



## The small company specialists

# COMPANY INFORMATION

**Ceramic Fuel Cells Limited (LSE:CFU)**

Info sheet compiled March 2007

**Company Eye Ranking**

**18/50**

### EDITOR'S NOTE

The company is a developer of flat-plate solid oxide fuel technology which is designed to be incorporated into electrical power generation products suitable for domestic use. These include combined heat and power units that use natural gas and other hydrocarbons, including renewables as fuel. During the last year Ceramic Fuel Cells Limited ("CFCL") passed a key milestone of 10,000 hours of system operation in commercial field trials units across its current programme of independent customer field trials in Germany, Australia and New Zealand.

The company Launched NetGen(TM), a pre-commercial m-CHP unit, in October 2005. CFCL has granted three additional patents, one in the US and two in Europe, this brings the total number of patents to 29.

This company has a very promising future and we believe that it could make a positive return for a medium or long type investor. However, the risk is that the company requires additional capital and does not commercialise its technology.

### 1 YEAR CHART



### FUNDAMENTALS

Company Name	Ceramic Fuel Cells Limited
Current Price	43.25
Status	AIM
Market Cap	133.96 m.
Shares in Issue	309.51 m.
Price-to-Book Ratio	4.1
Activities	fuel cell systems
Sector	Electrical Components & Equipment
Corporate advisor	Libertas Capital Corporate Finance Limited
Registrar	Computershare Investor Services Pty Ltd Computershare Investor Services PLC

### HISTORY

Originally established in 1992 as a research consortium, CFCL was restructured for commercialisation in 1999. The company is acknowledged globally as a leading producer of flat-plate allceramic SOFC and stack technology. CFCL's world class pilot production facility in Melbourne, Australia provides the manufacturing capabilities for raw material processing, anode and cathode ink preparation,

tapecasting, laser cutting, screen printing, sintering, firing, automated stack assembly, extensive testing and quality control.

The company also has the capability to design and manufacture key balance-of-plant components and integrate them into prototype systems.

### THE BUSINESS

The market for fuel cells and distributed hydrogen are projected to grow from US\$900 million (primarily for research contracts and demonstration and test units) to US\$15.1 billion over the next decade. With pension funds and other institutional money also eyeing the clean-energy arena, the relative trickle of money entering this space is

expected to become a steady stream.

UK government has voiced its support for CHP and distributed generation in its Energy Challenge Report, published July 2006, and by allocating an additional £50 million to develop microgeneration technologies.



## The small company specialists

# COMPANY INFORMATION

### ACTIVITIES

CFCL has been developing solid oxide fuel cells and core balance of plant for the last 12 years at its R&D, manufacturing and testing facility in Melbourne, Australia. The Company employs over 100 staff with offices in Australia and the UK. CFCL has invested a total of \$64 million in its technology and facilities to date.

CFCL has achieved a number of significant technical milestones. It has 28 patent families in major jurisdictions, relating to fuel cell materials, cell and stack configurations, fuel processing and system control technologies.

CFCL is now seeking to commercialise its flat plate solid oxide fuel cell technology for application in micro combined heat and power systems (m-CHP) for use in the home. CFCL plans to manufacture fuel cell stacks and core balance of plant and supply these to appliance manufacturers that will build m-CHP systems. These will be sold to utility companies for deployment in their customers' homes. CFCL's fuel cells run on natural gas that is conventionally piped into the home, but can also run on propane and butane bottled gases.

The Company has built several fully integrated prototype m-CHP systems incorporating its fuel cells. Several of these systems, designed to generate 1kW of power and 1kW of heat, have been deployed in field trials with commercial partners in Germany, Australia and New Zealand.

CFCL passed a key milestone of 10,000 hours of system operation in commercial field trials of m-CHP units across its current programme of independent customer field trials in Germany, Australia and New Zealand.

Launched NetGen(TM), a pre-commercial m-CHP unit, in October 2005. NetGen(TM) is less than half the size of the field trial m-CHP units. •Granted four additional patents: two relating to CFCL's solid oxide fuel cell (SOFC) technology; one for the process of producing ceramic powders used in solid oxide fuel cells; and one relating to the process of producing electricity using a fuel supply that includes hydrocarbons higher than methane. This brings the total number of patents within the portfolio to 50 (in 28 patent families).

### LIST OF CLIENTS

#### Powerco – NZ Utility

Contract signed in November 2004 for a two unit trial. Powerco is one of New Zealand's largest gas and electricity distributors, servicing some 400,000 consumers, representing 46% of New Zealand's gas connections and 16% of its electricity connections.

#### ETTA - Training

Contract signed in April 2005 for a one unit trial. Energy and Telecommunications Training Australia (ETTA, part of GippsTAFE) is one of Australasia's largest and most prominent training institutions for the electricity, gas and telecom industries.

#### EWE - German Utility

Contract signed in June 2005, to evaluate two units. EWE is one of the largest utilities in Germany and is extensively

involved in fuel cell technology and distributed energy. In June 2006, signed a second international contract with EWE, the fifth largest utility in Germany, to supply them with ten NetGen(TM) units, following the initial two m-CHP field trials that began in January 2006. This is CFCL's most significant contract to date, taking the company within striking distance of its target selling of 12 NetGen(TM) units by December 2006.

#### Szencorp - Green Building

Contract signed in July 2005, for one unit, with options to extend and upgrade to new versions of CHP units. CFCL will install its micro-CHP in a revamped commercial building in Albert Road, South Melbourne.

#### Gaz de France

Contract signed in December 2006 to develop a fully integrated m-CHP unit for the French residential market.

### DEVELOPMENT HIGHLIGHTS

CFCL embraced the European market and increased its focus on products and customers.

The Company continued to increase its production rate of fuel cells and, importantly, the power output per cell, which will become increasingly important as the Company moves towards manufacturing its cells in higher volume and at lower cost.

CFCL commenced discussions with a number of potential application partners, including major boiler manufacturers. CFCL's experienced UK based executives largely led these discussions. Several major utilities from Australia and Europe and potential application partners from Europe subsequently visited CFCL's Melbourne headquarters.

CFCL expects potential partners to make commitments once further reliability of the fuel cell units has been demonstrated. The Company plans to establish a fuel cell manufacturing plant in Europe in order to provide continuous production processes to allow for much higher volume production levels than that achievable at the existing Melbourne facility.

CFCL is continuing to work on improving the design and performance of its fuel cell. Such improvements include changes to the powder composition to increase the power produced by each cell. This is important as ultimately it can lead to smaller fuel cell 'stacks', which can reduce the cost of producing a given amount of electricity.

CFCL also improved the balance of plant (control system) in the demonstration fuel cell generator units by focusing on better design and integration, resulting in smaller size, fewer materials, lower costs and better controls.

21 September 2006 CFCL announced a further major step towards commercialisation with the development of its next generation of fuel cells.

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.



## The small company specialists

# COMPANY INFORMATION

### EXPANSION

#### 15 March 2006

Ceramic Fuel Cells Limited has been granted a new patent in Japan, for a coating used on electrical interconnects in fuel cells. This new Japanese patent gives CFCL a total of

46 granted patents. These are contained in 28 patent families (each family represents a single invention covered in multiple jurisdictions) that have been granted or are in the process of being examined by the various Patent Offices

### NEW GROWTH OPPORTUNITIES

Clean technology may have the potential to replicate the growth stages of sectors such as biotech and telecoms. Macro-economic drivers favour clean technology companies. It is clear that the demand for clean technologies is expected to grow over the coming years as a result of a number of factors driving their uptake:

- The increasing cost and the supply volatility of fossil fuels and the increasing exposure to governmental legislation.

- Clean technology can expect further growth from the consumer market as interest in energy-efficient devices is fuelled by the limitations of the current power supply infrastructure.

- As climate change generates greater consumer awareness, corporates are finding that efforts to reduce carbon emissions can bring positive market attention. Corporate social responsibility and sustainability strategies are driving businesses to examine early associations with clean technologies to solve strategic issues.

### TARGET MARKET

CFCL is focusing its energies on Europe as its first target market. The decision to adopt this focus has been validated by the European market showing world leadership in setting standards for fuel efficient and environmentally friendly appliances and energy generating systems, and in establishing an emissions trading scheme. CFCL is well positioned to meet these opportunities in the European market. The Company established a European subsidiary with an office in the UK. CFCL's UK based executives have focused on increasing CFCL's profile with European utilities, manufacturers, suppliers and government agencies.

The fuel cell field trial agreement with EWE (signed in June 2005) and the Letter of Intent (signed in July 2005) illustrates the support for distributed generation within the European market and the willingness of European utilities to take a leadership position.

The European market for natural gas fuelled micro-CHP units is conceivably as large as the current market for natural gas powered hot water systems, which has been estimated at 6 million units per annum. The current European sale of conventional engine micro-CHP unit is small but growing quickly.

### DIRECTORS

#### **Julian Dinsdale Chairman**, Age: 61

Director and Chairman since December 2002. Has 30 years experience in international commercialisation of high technology companies, and has established his own hi-tech companies. He has held prominent Directorship and Chairman positions in the energy industry.

#### **David Carruthers Non-exec Director**, Age: 57

Previously he served as CFO of global operations with BP Finance (based in London) and the European CEO based in Brussels. He has also held the post of Managing Director of the Treasury Corporation of Victoria during the state's privatisation programme.

#### **Robert (Bob) Kennett Non-Executive Director**, Age:56,

Has spent his career in the energy sectors and has been focused on Combined Heat and Power and renewables. He was Managing Director of Powergen Combined Heat and Power Ltd for 12 years and, for three years simultaneously, was Chairman of PowerGen Renewables Ltd. Bob is currently a consultant advising financiers and

investors on business opportunities in the UK Combined Heat and Power and Renewable Energy markets.

#### **Brendan Dow Chief Executive Officer**, Age 40

Brendan has held senior executive positions in the appliance industry for over 15 years, and was previously Australian Managing Director of Ziehl-ebm. He has a wealth of experience in M&A, market development, business strategy and operations.

#### **John Dempsey**, Age: 59

Non-Executive Director and member of Audit Committee has been a qualified Accountant since 1974 and has worked in publicpractice, commerce and the Queensland rural sector in various positions. Previous appointments have included deputy Mayor of the City of Cairns, member of the Queensland Sugar Industry Tribunal, and Director/Partner in a public accountancy practice in Cairns. Mr Dempsey is presently an Owner/Principal of an accountancy practice in Brisbane and has been a Board Member of Energex Limited since 1999.



The small company specialists

# COMPANY INFORMATION

## RSI - 14



## ROLLING EPS



## SHAREHOLDINGS

	Number	%
Metasource Pty Ltd	38,250,000	34.00
Energex Ltd	36,800,783	32.71
Aegon UK	38,171,512	12.33

	Number	%
Jolimont Ventures Pty Ltd	3,989,596	3.55

## FINANCIAL HISTORY

### Profit and loss account for the six months to 31<sup>st</sup> Dec 2006

\$	6 months to 31 <sup>st</sup> Dec 2006	Year to 30th June 2006
Revenue from continuing operations	2,522,591	505,525
Other income	3,895	36,716
Research & Product Development	(5,774,788)	(5,319,443)
General & Administration	(3,706,198)	(2,786,243)
Sales & Marketing	(986,125)	(617,273)
Borrowing costs	-	(506,313)
Loss before income tax	(7,940,625)	(8,687,031)
Income tax expense	-	-
Loss for the half-year attributable to members of Ceramic Fuel Cells Limited	(7,940,625)	(8,687,031)
Basic and diluted earnings per share	(2.57) Cents	(7.76) Cents

### Balance Sheet as at 31<sup>st</sup> December 2006

\$	As at 31st December 2006	As at 30th June 2006
Cash and cash equivalents	3,313,565	11,367,347
Trade and other receivables	338,290	110,859
Financial assets	11,856,632	30,087,872
Other	345,954	269,200
Total Current Assets	15,854,441	41,835,278
Financial assets	59,906,835	44,661,266
Plant and equipment	4,608,889	2,090,618
Intangibles	1,000	1,000
Total Non-Current Assets	64,516,724	46,752,884
Total Assets	80,371,165	88,588,162
Trade and other payables	1,219,611	1,330,551
Provisions	863,821	869,179
Deferred (unearned) revenue	417,819	537,984
Total Current Liabilities	2,501,251	2,737,714
Provisions	87,510	96,497
Total Non-Current Liabilities	87,510	96,497
Total Liabilities	2,588,761	2,834,211
Net Assets	77,782,404	85,753,951
<b>EQUITY</b>		
Contributed equity	185,519,327	185,549,893
Reserves	98,840	99,196
Retained losses	(107,835,763)	(99,895,138)
Total Equity	77,782,404	85,753,951



The small company specialists

# COMPANY INFORMATION

## RISK FACTORS

In addition to the other relevant information, the following specific factors should be considered carefully when evaluating whether to make an investment in the Company. The investment offered in this document may not be suitable for all of its recipients. Before making an investment decision, prospective Investors should consult a person authorised under the Financial Services and Markets Act 2000 who specialises in advising on the acquisition of shares and other securities. A prospective Investor should consider carefully whether an investment in the Company is suitable for him/her in the light of his/her personal circumstances and the financial resources available to him/her. There are various risk and other factors associated with an investment of the type described in this document. In particular: the value of an

investment in the Company is largely dependent upon the expertise of the Directors and their ability to identify and acquire or invest in suitable companies or businesses. There can be no certainty that the Company will be able to identify suitable acquisition targets or complete the purchase of any identified targets at a price the Directors consider acceptable. In the event of an aborted acquisition it is likely that resources may have been expended on investigative work and due diligence, which cannot be recovered. The acquisition of other businesses can involve significant commercial and financial risks and there can be no certainty that any acquired business will not have a material adverse effect on the operations, results or financial position of the Company.

## CONTACT

170 Browns Rd  
Noble Park, VIC, 3174  
Australia  
Telephone: + 61 (3) 9554 2300  
Fax: + 61 (3) 9790 5600

## RANKING

	Ranking out of 50 (50 being highest)
<b>Business model - competitive advantage</b>	
Competition	12
Customers	20
Low cost	15
Management	
- corporate governance	
- quality	15
- shareholding	
Product	25
Sector	
<b>Financial evaluation</b>	
Early and profitable exit potential	19
Financial strength	
- cash flow	
- conservative accounting	
- need for funding	
Growth at a reasonable price	15
Risk	23
<b>Overall average rating</b>	<b>18</b>



## The small company specialists

# COMPANY INFORMATION

### FURTHER INFORMATION ABOUT THE RANKING

#### Competitive advantage

Companies are assessed according to their business model and how this translates into strong and sustainable competitive advantage. This can only be achieved with low cost activities and doing something different from the competition. This 'differentiation' must add value to the customer who is then prepared to pay a premium price. The differentiation is most obvious in the product but it can exist anywhere in the company's

value chain of activities, such as easy payment terms, convenient locations, superior management, and quality of suppliers. Companies that do not achieve competitive advantage because they have the same costs and/or do the same as the competition are marooned in a profitless zone. They helplessly try to compete with the one weapon left open to them, which is the disaster of cutting prices and typically leads to similar retaliation by competitors, with disastrous results.

### THE FOLLOWING ELABORATES ON THE RANKING CRITERIA

#### Competition

How intense is the competition and are there barriers to entry?

Services tend to be more protected than products from international competition. Does the sector ride the tailwind of multi-year mega trends? Is the business well positioned in the current stage of the economic cycle? What is its resistance to a recession?

#### Customers

Is the company controlling its customers and therefore its revenue streams? Are customers glued to the company and providing valuable and reliable recurring revenue or are they one-off, or 'transactional', providing shaky revenue? The company should ideally have weak and numerous customers.

#### Profitable exit potential

What is the potential for selling the share profitably? This is more applicable to pre-flotation investments.

#### Low costs

Has the company achieved low cost activities thus allowing more of the top line revenue to trickle down to the profit line?

#### Financial strength

Does the company have strong cash flow, the lifeblood of any business? Is the accounting conservative or is there 'accounting for growth'? Does it need more funding? Is the profit margin healthy and at least equal to its sector? What has been the track record in the growth rate of profits?

#### Management

Is there good corporate governance? What is the quality of management, as this is crucial to any business? Are the directors' shareholdings significant but not so large that they control the company?

#### Growth at a reasonable price

Does the share offer growth at a reasonable price? This is commonly measured using the PEG. This is the price earnings ratio (PE) divided by the forecast growth rate in earnings per share (EPS). The lower the PEG the better and under 1.0 is considered good for a blue chip company and under 0.6 for a small growth company.

#### Product

Is the product different from the competition and adds value to the customer? Are there threatening substitutes? Does it have a powerful brand?

#### Risk

What is the risk rating of the share due to factors such as new markets, its business model and strategies?

#### Sector

Is the company in an attractive sector that is profitable and adds value?

**This document must not be reproduced without the prior written consent of Company Eye.**

Risk Warning: Should you have any doubts about the suitability of this investment please consult with a professional adviser in accordance with the Financial Services and Markets Act 2000 ("FSMA 2000"). This document is provided as information only and is not intended to act as a financial promotion without the approval in accordance with section 21 of the FSMA by an authorised and regulated company. Company Eye does not accept responsibility for the accuracy of the information contained in this document and investors should not rely on this document when contemplating an investment. The value of investments can go down as well as up and you may not get back the full amount originally invested. This document should not be reproduced without the prior consent of Company Eye.