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CSIRO Report confirms Large Carbon Savings from BlueGen Gas-to-Electricity Generator

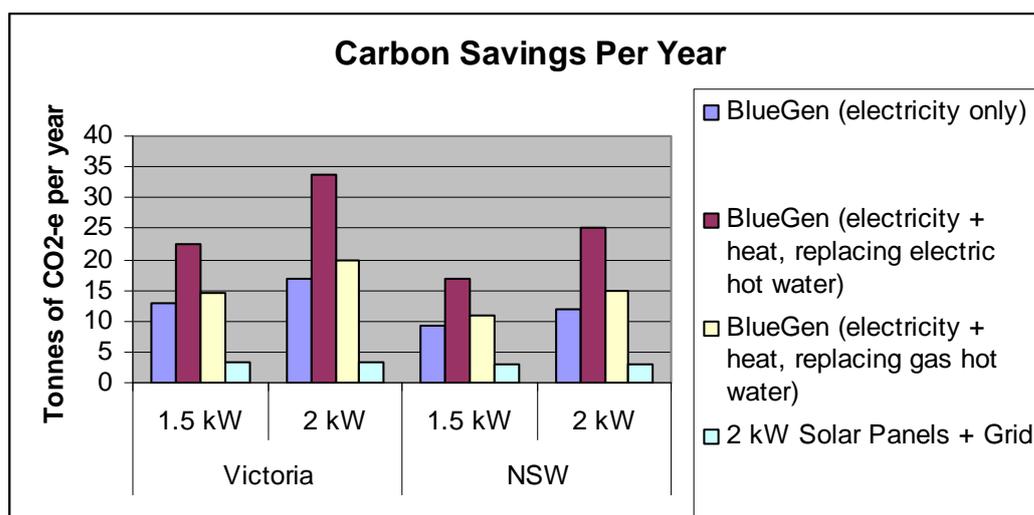
Ceramic Fuel Cells Limited (AIM/ASX: CFU) – a leading developer of high efficiency and low emission electricity generation units for homes and other buildings – today announced that a report by CSIRO has confirmed the significant carbon savings from the company's BlueGen gas-to-electricity generator.

CSIRO is the Australian Government national science agency and Australia's pre-eminent research organisation.

In its report – *Desktop Greenhouse Gas Emission Comparison of the BlueGen Fuel Cell Unit with Other Means of Providing Electricity and Heat to Australian Homes*, prepared by Peter Campbell – CSIRO determines that a 2-kilowatt BlueGen unit can save up to 33 tonnes of carbon dioxide a year when replacing power derived from brown coal.

The average household in Victoria produces around 10.7 tonnes of greenhouse gas emissions each year from energy used in the home.¹ A home with a BlueGen unit can offset all of these carbon emissions – and more.

By comparison, a home with a 2-kilowatt solar panel using the grid as a back-up can save 3.2 tonnes of carbon dioxide a year.



Brendan Dow, managing director of Ceramic Fuel Cells Limited, said: "This independent report reinforces what we know already – that using a BlueGen unit to produce low-emission energy allows homeowners to save huge amounts of carbon dioxide, and therefore make a significant difference to the environment."

¹ See <http://www.saveenergy.vic.gov.au/blackballoons.aspx>

About the size of a dishwasher, BlueGen uses patented fuel cell technology to convert natural gas into electricity with very high efficiency. Over a year, each BlueGen can produce twice the electricity needed to power an average home – the excess power can be exported to the power grid. BlueGen also produces enough heat to meet the average home's daily needs for hot water.

A summary of the CSIRO report is attached and the full report is available at http://www.cfcl.com.au/Recent_announcements/

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Summary of the CSIRO Report follows.

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About Ceramic Fuel Cells Limited

Ceramic Fuel Cells Limited is a world leader in developing fuel cell technology to provide highly efficient and low-emission electricity from widely available natural gas. Ceramic Fuel Cells is developing fully integrated power and heating products with leading energy companies E.ON UK in the United Kingdom, GdF Suez in France and EWE in Germany. The company has sold BlueGen units to major utilities and other foundation customers in Germany, the United Kingdom, Switzerland, The Netherlands, Japan and Australia.

*** Ceramic Fuel Cells is arranging group visits to the VicUrban Aurora site in Epping North, Victoria to view a BlueGen unit in operation.*

To register for a site visit please contact Ceramic Fuel Cells at receptionist@cfcl.com.au or phone 03 9554 2300. The BlueGen unit is not open to the public for unscheduled visits.

*** A presentation with a photo of the BlueGen unit and graphs of performance data, is available at http://www.cfcl.com.au/Recent_announcements/.*

Ceramic Fuel Cells is listed on the London Stock Exchange AIM market and the Australian Securities Exchange (code CFU).

www.cfcl.com.au

Summary of CSIRO Report

The CSIRO report examines the emissions savings from using BlueGen under three scenarios.

Scenario 1 - Continuous Power Production

In the first scenario the BlueGen is run continuously. This produces more electricity than the average household needs, and excess electricity is exported to the local power grid. The report examines the savings when the BlueGen is constantly generating 1.5 kW of electricity (for maximum efficiency) and 2.0 kW (for maximum output):

Scenario 1	Savings vs the grid (tonnes of CO ₂ -e per year)			
	Victoria		NSW	
	1.5 kW	2 kW	1.5 kW	2 kW
BlueGen (electricity only)	12.88	16.85	9.20	11.94
BlueGen (electricity + heat offsetting <i>electrical</i> heating)	22.64	33.66	16.93	25.26
BlueGen (electricity + heat offsetting <i>gas</i> heating)	14.53	19.68	10.85	14.77
2 kW Solar Panels + Grid	3.20	3.20	2.958	2.958

In each scenario the savings are higher in Victoria than in New South Wales because of the very high emissions intensity of the Victorian power grid, due to almost all of Victoria's electricity being generated from brown coal.

The highest savings are when the BlueGen is operated to produce 2kW of electricity plus hot water to replace an electric hot water system – this results in savings of up to 33 tonnes of carbon per year for a single home in Victoria. If BlueGen operates at 1.5kW and replaces a gas hot water system the savings are 10 tonnes in NSW and 14 tonnes in Victoria.

If an average home installs a 2kW solar PV system, and imports the rest of its power from the grid, the carbon savings are about 3 tonnes per year.

Scenario 2 - Producing Enough Power for the Average Household in a Continuous Block

In the second scenario, the BlueGen is run for long enough during the day to produce the average amount of electricity the household would use over the day – the output is then turned down so the unit is not exporting any power to the grid. The carbon savings are much lower in this scenario – but still higher than the savings from a 2kW solar unit.

Scenario 2	Savings vs the grid (tonnes of CO ₂ -e per year)			
	<i>Victoria</i>		<i>NSW</i>	
	1.5 kW	2 kW	1.5 kW	2 kW
BlueGen (electricity only)	3.631	3.175	3.572	2.986
BlueGen (electricity + heat offsetting electrical heating)	11.51	17.77	9.827	14.39
BlueGen (electricity + heat offsetting gas heating)	2.462	3.790	3.00	3.899
2 kW Solar Panels + Grid	3.20	3.20	2.958	2.958

Scenario 3 - Producing Enough Power for the Average Household, based on Hourly Requirements

In the third scenario the BlueGen is operated to try to 'match' the daily load profile of the average home. This scenario assumes that electricity cannot be fed back into the grid. For simplicity the model assumes BlueGen only operates at zero power export, 1.5 kW or 2 kW – and it ignores the value of the heat which BlueGen uses to make hot water. In practice the power output of the BlueGen can be modulated across the range of 500W to 2kW.

The Company considers this scenario is unlikely to be used in practice however CSIRO includes this scenario in its report for completeness. In this scenario the home with a BlueGen saves 2.2 tonnes of emissions per year in Victoria and 1.6 tonnes in NSW. The home with a 2kW solar panel saves about 1.6 tonnes in both States.