



**CERAMIC FUEL CELLS LIMITED**

*Clean power for your home*

# FY09 - Preliminary Final Results



Brendan Dow  
Managing Director  
Ceramic Fuel Cells Limited  
18 August 2009

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



## **Disclaimer**

**This Presentation has been prepared by, and is proprietary to, Ceramic Fuel Cells Limited ('CFCL').**

**This Presentation does not constitute or form part of an offer for sale or subscription or an invitation or solicitation of an offer to subscribe for or purchase any securities and neither this document nor anything contained herein shall form the basis of any contract or commitment whatsoever.**

**No representation or warranty, express or implied, is given by CFCL, its Directors, employees or professional advisors as to the accuracy, fairness, sufficiency or completeness of the information, opinions or beliefs contained in this document. Except in the case of fraud, no liability is accepted for any loss, cost or damage suffered or incurred as a result of the reliance on such information, opinions or beliefs.**

**The information in this Presentation reflects prevailing conditions and the views of CFCL as of this date, which are subject to change.**



# **FY09 – Operational Review**



## **Customers and Products**

- **Deployed and successfully operated prototype micro combined and power (m-CHP) products with leading partners in Europe and Japan**
- **Now developing fully integrated m-CHP products**
- **Developed and launched “BlueGen”, a high efficiency power and heat generator product**
- **Signed memorandum of understanding with VicUrban to install the first BlueGen unit in a showcase sustainable building in late 2009**
- **In positive discussions with prospective sales and distribution partners, and building a strong pipeline of customer interest for BlueGen and m-CHP products, in Europe, North America, Japan and Australia**



## **Building Manufacturing Capacity**

- **Built a large scale fuel cell plant in Heinsberg, Germany**
  - To be opened in October 2009
  - Design Capacity 10,000 fuel cell stacks per year
  - Options for later expansion
  - Final cost €9.5 million - almost €3 million under budget
- **Ceramic powder plant in Merseyside, UK**
  - Making high quality ceramic powders using the Company's proprietary technology, for internal use and for customer sample products
  - First customer order received for a biomedical application
- **Formalising commercial supply chain partnerships for fuel cell components, balance of plant components and BlueGen**



## **World-Leading Technology**

- **Achieved world-leading electrical efficiency of 60% while exporting electricity to the grid (no transmission losses)**
  - **Continued strong progress in fuel cell stack reliability and lifetime**
    - Fuel cells operating for 20,000 hours (more than two years)
    - Fuel cell stacks operating for 13,000 hours (one and a half years)
  - **Extensive intellectual property portfolio supplemented with further patents granted**
- **Industry's highest electrical efficiency**  
**(other fuel cells = 30-45%, other mCHP = 20% or lower)**
    - = **compelling competitive advantage (power is more valuable than heat)**
    - + **new product opportunities (BlueGen)**



## **FY09 – Financial Review**

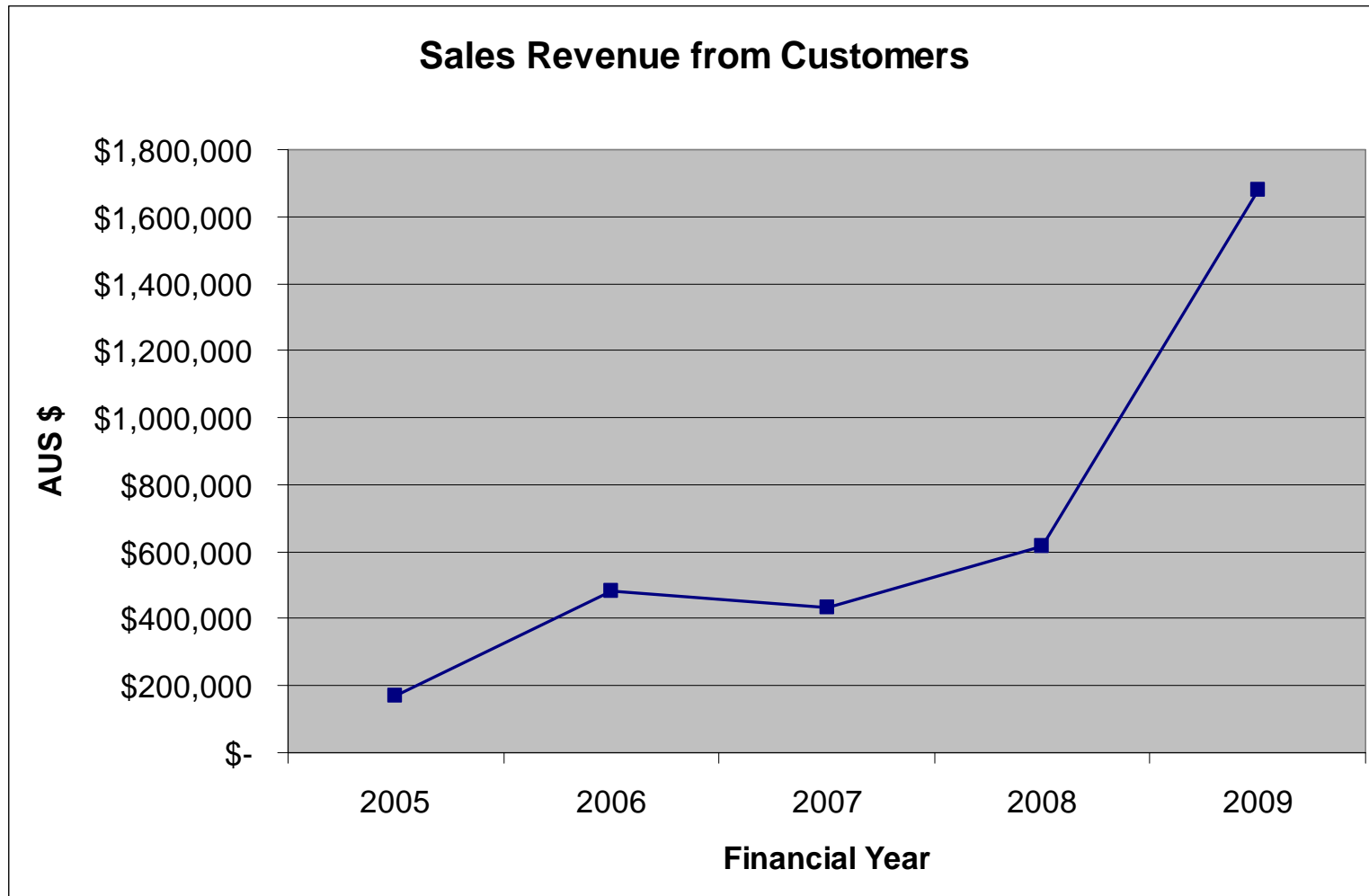


## Financial

- Sales revenue from customers up 172% to A\$1,679K (£840K)
- Operating costs (before impairment charge) down 12.2% to A\$21,208K (£10,604K)
- Operational cash outflow reduced by A\$3.3 million (£1.6 million) to A\$16.5 million (£8.3 million)
- Losses on financial investments required significant impairment charges, leading to an increase in net loss to A\$42.2 million (£21.1 million)
- Raised A\$32.2 million (£16.1 million) in a placement and rights issue in April 2009
- At 30 June 2009, cash of A\$25.5 million (£12.8 million) and investments valued at A\$4.3 million (£2.1 million)

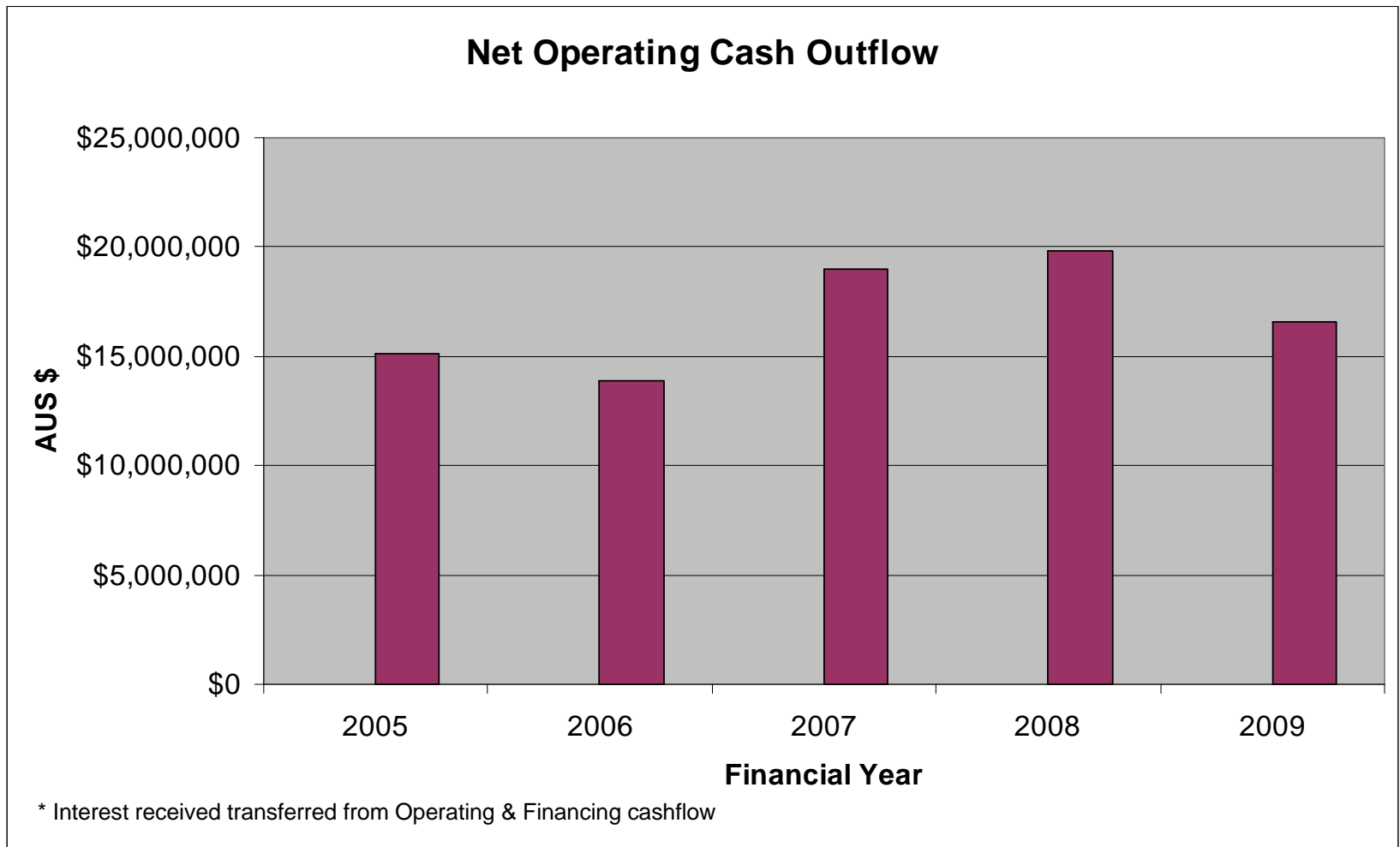


# Increasing Sales Revenue...





## ... and Controlling Costs





**CERAMIC FUEL CELLS LIMITED**

*Clean power for your home*

# **Product Offerings**



## Products

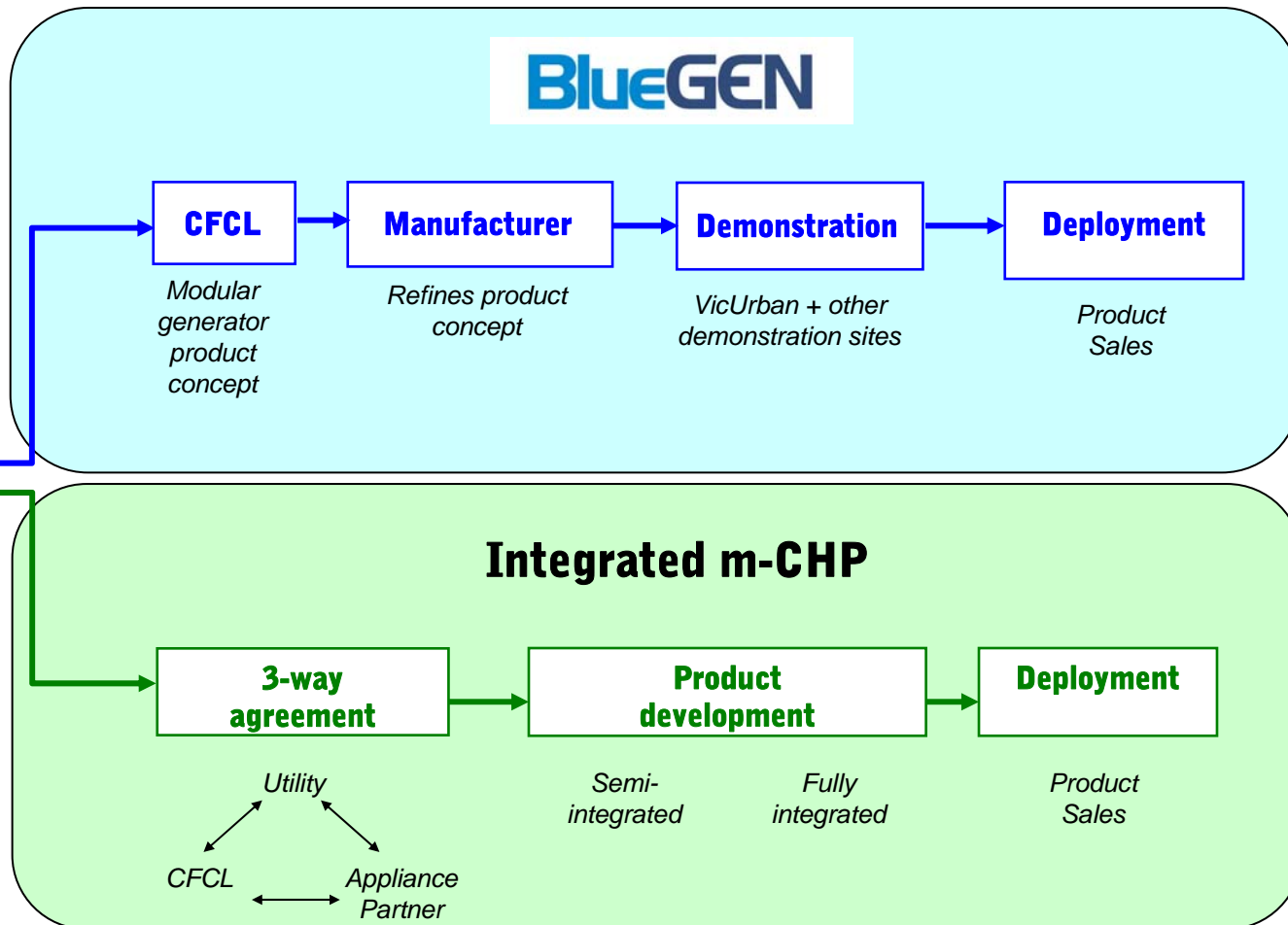
- **CFCL fuel cell modules inside m-CHP units and BlueGen**
- **Parallel product offerings for different customer segments and different markets**
  - **BlueGen = modular product = power only or power + hot water**
  - **mCHP = fully integrated power + heating system**
- **Common technology platform**
  - **Both products use CFCL Gennex fuel cell module and common 'balance of plant' components**
  - **Different products and customer offerings, for global markets, from the same technology platform**



# Parallel Product Paths



**GENNEX**  
fuel cell module





## Product Offerings

	<b>BlueGen</b>	<b>Integrated m-CHP</b>
<b>Description</b>	Modular generator connected to a hot water tank. Auxiliary heating device is optional.	Fully integrated heating and power system with auxiliary heating device, thermal storage tank and integrated control system.
<b>Purpose</b>	<ol style="list-style-type: none"> <li>1. Generate Electricity</li> <li>2. Recover heat for hot water</li> </ol>	<ol style="list-style-type: none"> <li>1. Provide heating for the home</li> <li>2. Generate Electricity</li> </ol>
<b>Typical applications</b>	Add-on generator appliance to augment existing home heating	Complete replacement appliance for hot water, space heating and electricity
<b>Key Markets</b>	<ul style="list-style-type: none"> <li>• Europe and North America – as an add-on power generator and where demand for home heating is lower</li> <li>• Japan</li> <li>• Australia / Asia</li> </ul>	Europe and North America – as a home heating and power solution, where demand for home heating is higher
<b>Common technology platform</b>	<ul style="list-style-type: none"> <li>• Gennex 2kW fuel cell module, running on natural gas, with 55-60% electrical efficiency</li> <li>• Common ‘balance of plant’ components</li> </ul>	



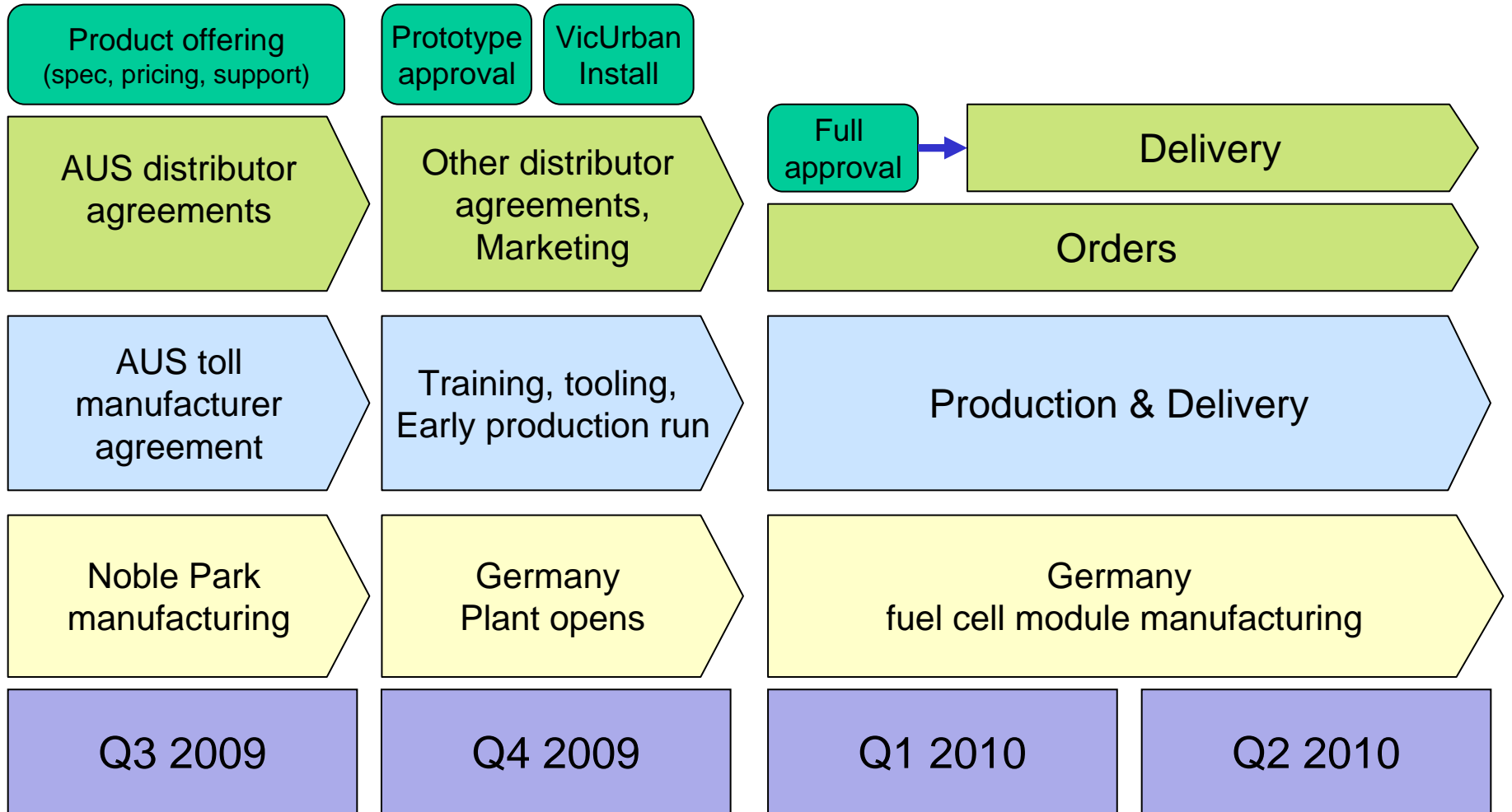
**BlueGEN**

- **One BlueGen can produce all the power and hot water for an average home**
  - Up to 17,000 kWh of electricity per year
  - Enough heat for 200 litres of hot water per day
- **Electrical efficiency 55-60%**
  - Twice as efficient as the grid
  - Highest efficiency = more power from the same fuel = lower costs, higher carbon savings
- **‘CE’ product approvals**
  - Obtained approval for demonstration BlueGen
  - Full CE approval for BlueGen due in January 2010





# BlueGEN Timeline





## Integrated mCHP Products

- Successfully operated six semi integrated units, over 52,000 hours' total
- Delivering fully integrated products Q4 2009

<b>Market</b>	<b>Partners</b>	<b>Status</b>
<b>United Kingdom</b>	E.On UK Gledhill Building Products	- Semi integrated unit installed in June 2008, still operating - Agreed in February 2009 to a future order profile of 100,000 units from 2012 (subject to performance targets and project milestones) - First fully integrated unit to be delivered in Q4 2009
<b>Germany</b>	EWE Bruns Heiztechnik	- Semi integrated units installed in March, April and August 2008 and are still operating - First fully integrated unit to be delivered in Q4 2009 - Discussing and planning the next stage of product development, including timing, volumes and costing
<b>France</b>	GdF Suez De Dietrich Remeha	- Semi integrated unit installed in April 2008, agreed shut down in August 2009. - In July the partners agreed to the next project stage. The first fully integrated unit to be delivered in late November 2009.



**CERAMIC FUEL CELLS LIMITED**

*Clean power for your home*

## **Leading Partners**



# Leading Global Partners

## Germany



Among the largest German utilities: innovative energy products incorporating electricity, gas and telecommunications. Sales of €4.7bn across 4,700 staff. Leader in DG and fuel cells. [www.ewe.de](http://www.ewe.de)



Specialist German boiler and thermal store manufacturer with over 44 years experience. Flexible manufacturing facilities, various brands. [www.bruns-heiztechnik.de](http://www.bruns-heiztechnik.de)

## France



Global energy group formed between Gaz de France and Suez: energy supply in gas and electricity. Global sales of €74.3b across 196,500 staff. [www.gdfsuez.com](http://www.gdfsuez.com)



De Dietrich Thermique is a leading French boiler manufacturer. Extensive sales & distribution network supported by significant R&D resources. Part of the De Dietrich Remeha group. [www.dedietrich-heating.com](http://www.dedietrich-heating.com)

## United Kingdom



One of the UK's largest integrated electricity and gas companies: second largest generator in the UK. Sales of €12bn across 15,000 staff. Experience with deploying CHP units. [www.eon-uk.com](http://www.eon-uk.com)



UK based boiler and thermal store manufacturer. Innovative tank designs for maximalising thermal efficiency from CHP technologies. [www.gledhill.net](http://www.gledhill.net)

## Japan



Leading global gas appliance company. Based in Japan, operations in Asia, Oceania, Americas. Owns Rheem and Solahart brands. Sales of US\$2.5bn, 15,000 staff. [www.palomaglobal.com](http://www.palomaglobal.com)



## Australian Partnerships

### VicUrban

- MoU signed May 2009
- 3 BlueGen units installed in VicUrban showcase sustainability sites from late 2009

### Appliance Partners

- Australian appliance companies will make the BlueGen product  
– in discussions now

### Sales / Installation Partners

- Australian partners will sell, install and service the BlueGen product  
– in discussions now



*CERAMIC FUEL CELLS LIMITED*

*Clean power for your home*

# **Manufacturing**



## Building Manufacturing Capacity

**UK plant makes ceramic powder**

**Melbourne R&D and pilot production**

**Automated fuel cell plant in Germany**

- Completion October 2009
- Designed for capacity of 10,000 fuel cell stacks per year
- Building works complete, equipment installed and being commissioned on-site
- Final cost of ~ 9.5 million Euros, almost 3 million Euros under budget
- Working with fuel cell component suppliers – CeramTec and HC Starck in Germany – to reduce unit costs at commercial performance targets

**Commercial Supply Chain partnerships**

- Europe, South East Asia, Australia



## Outlook 2009- 10

- **Generate sales revenue from selling BlueGens and integrated mCHP products.**
- **Targets for 2009-10 include:**
  - Finalising the BlueGen offering
  - Installing BlueGen with VicUrban and at other high profile demonstration sites
  - Agreements with appliance partners to make BlueGen
  - Agreements with BlueGen sales and distribution partners
  - CE and local safety approvals for BlueGen
  - Developing and deploying integrated mCHP products in larger numbers with European utility customers
  - Deploying early BlueGens in Japan
  - Completing the commissioning of the Heinsberg fuel cell plant
  - Formalising agreements with component suppliers
- **Continue to enhance the technical performance of the fuel cell systems, focusing on reliability and lifetime.**
- **Generate revenue from selling advanced ceramic powder products.**



## **For More Information**

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

[News](#)

[BlueGen Specifications](#)

[Webcasts](#)

[enquiries@cfcl.com.au](mailto:enquiries@cfcl.com.au)