



# Annual General Meeting

20<sup>th</sup> November 2008

CEO Report  
Giles Bourne

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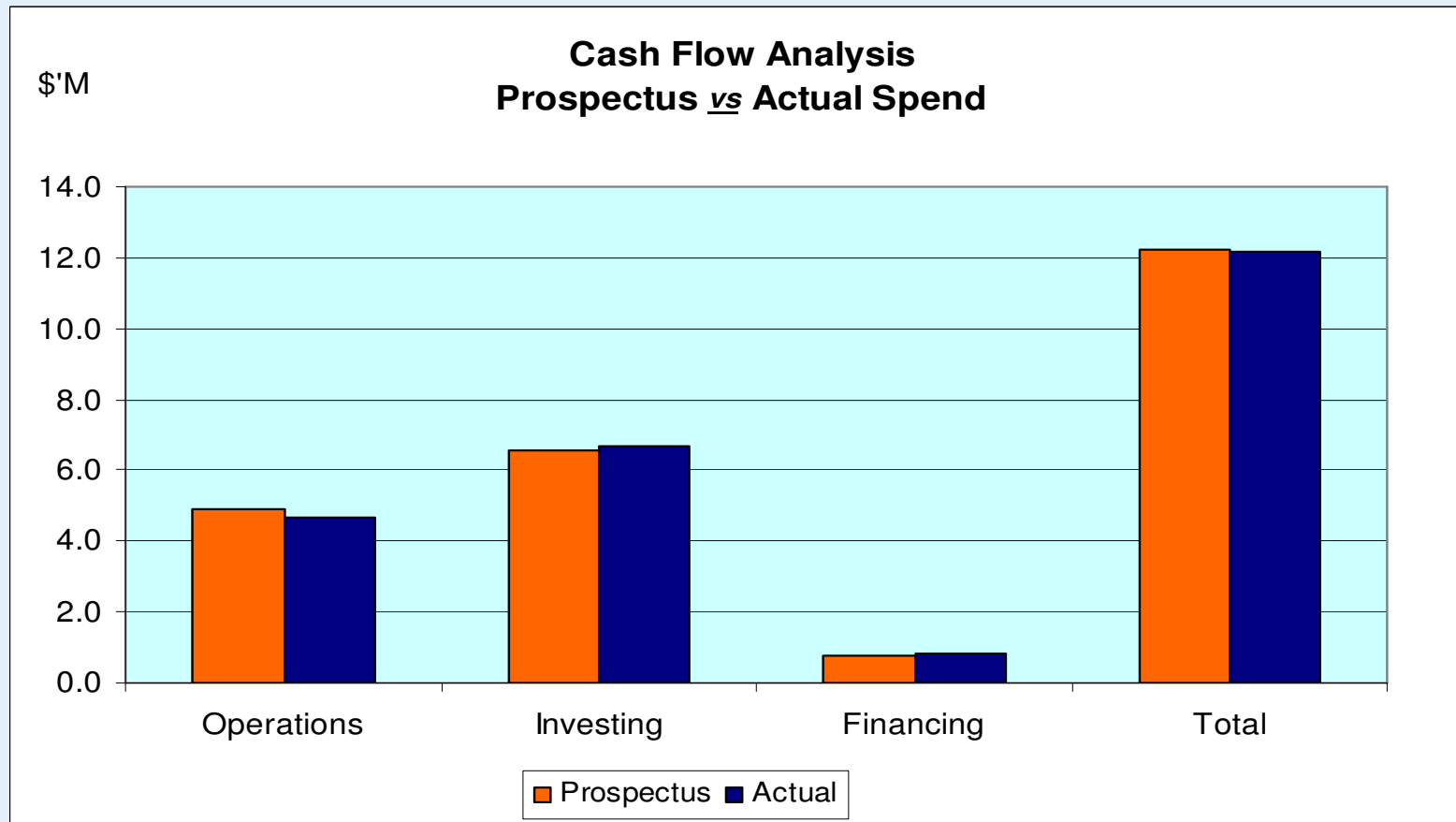
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# Agenda

- *Funds status*
- *Year in review*
- *BluGlass site opening*
- *Key markets*
- *IP and technology developments*
- *Current state-of-play - who are we speaking to?*
- *Outlook for 2009 and beyond*

# Funds Status





# Year in review

- *Established pilot manufacturing plant*
- *Built prototype commercial reactor*
- *Established business development capability*
- *Strengthened IP position*
- *BluGlass site opening*



# BluGlass Site Opening



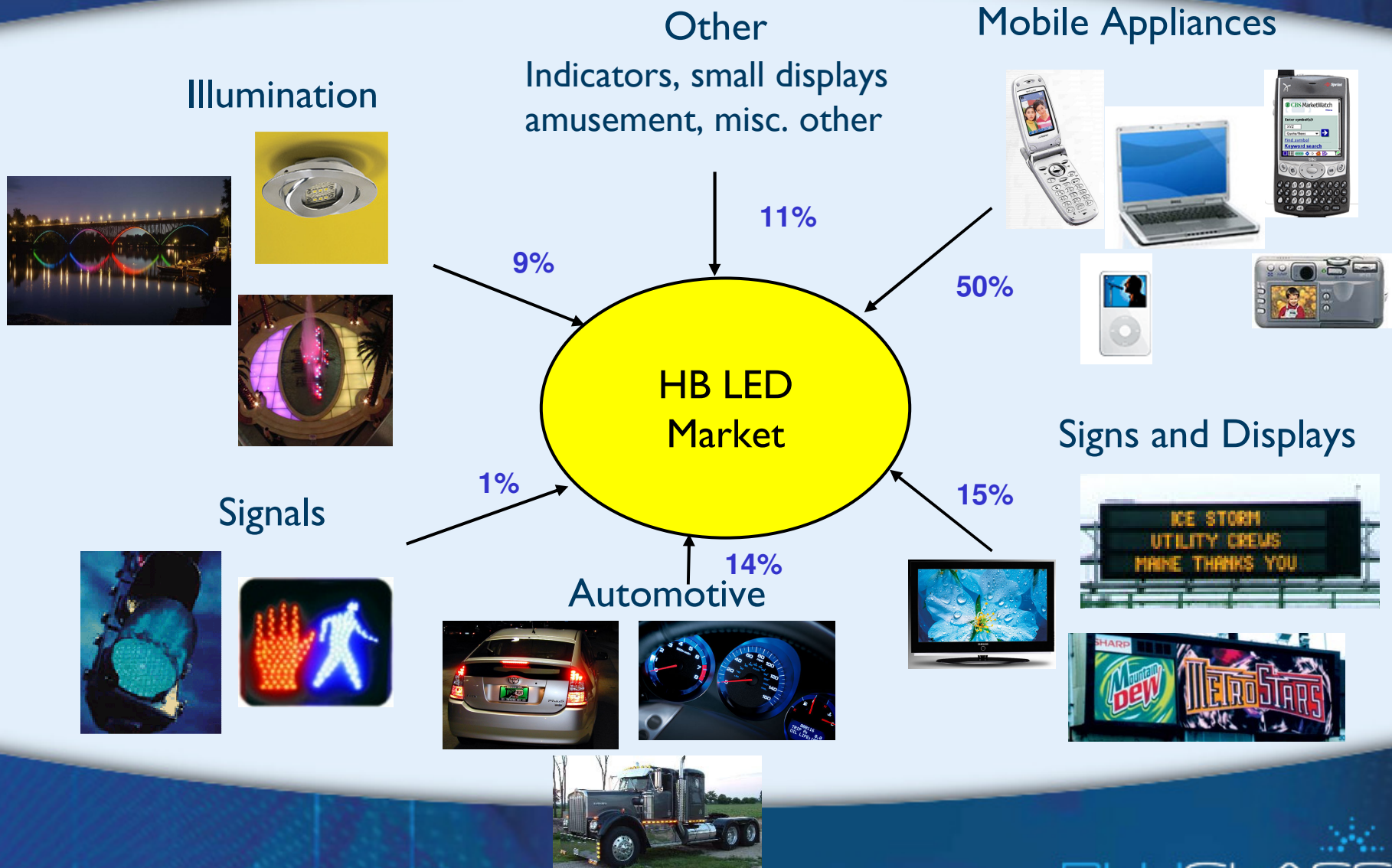


# BluGlass Site Opening

- *17 July 2008 the BluGlass site was officially opened by the Hon Peter Garrett, AM, MP Minister for the Environment, Heritage and the Arts*
- *Newly built class 1000 & 100K cleanrooms*
- *Full device fabrication facilities & mechanical workshop*
- *Commercial reactor is being performance tested and the data is under evaluation*
- *Commercial interest in the RPCVD process is growing with BluGlass committed to providing samples to key industry players*
- *Newly established Technology Council*

# High Brightness LED application segments

*A rapidly growing and evolving market*





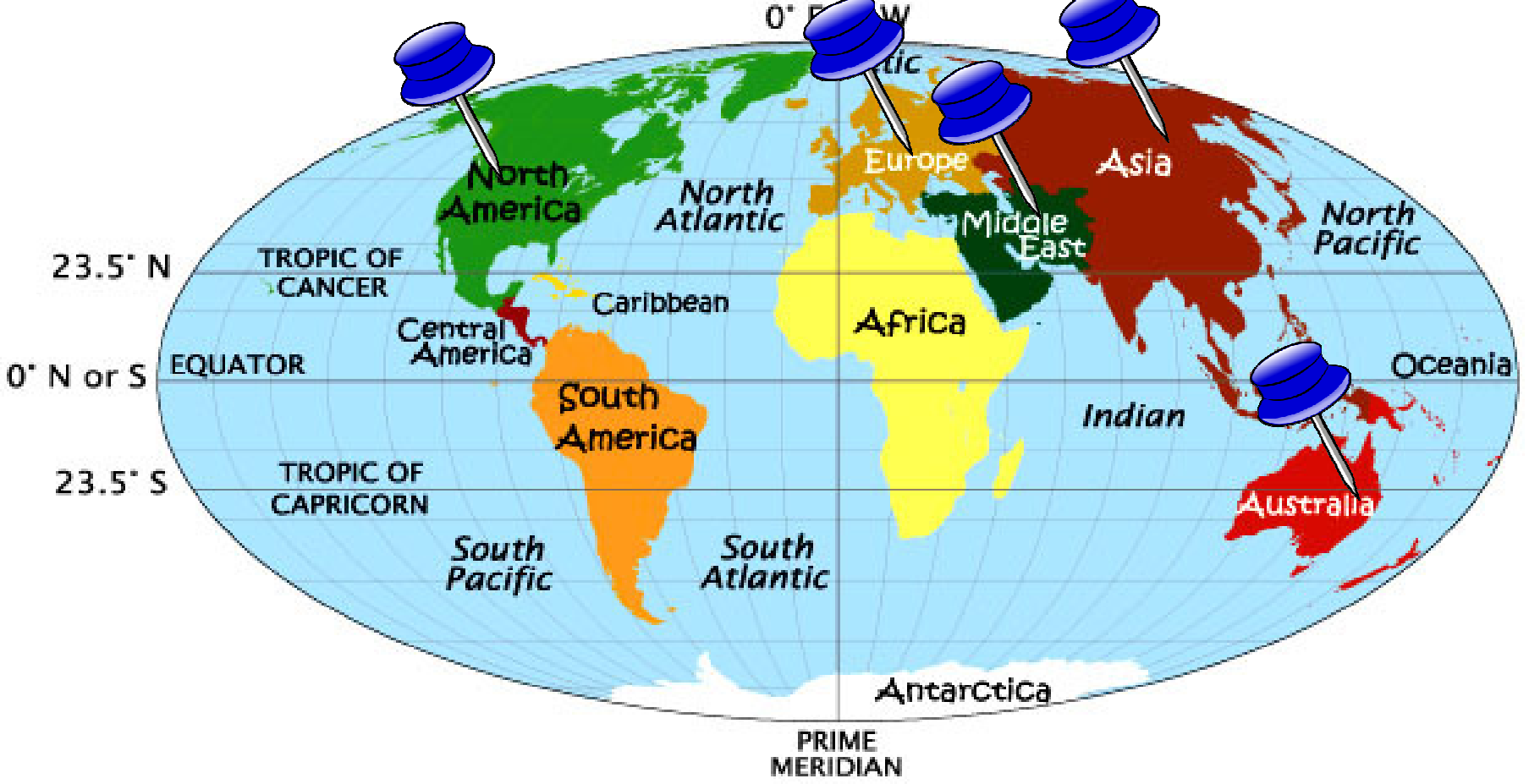
# Key Markets

- *BluGlass remains focussed on the LED market*
  - *Cost advantages of the RPCVD process*
  - *Growth of solid state lighting market*
  - *Attractive revenue model through licensing*
- *BluGlass continues to explore technology and commercial opportunities for other nitride based III/V (e.g. power electronics & solar cells)*

# IP and Technology Developments

- *\$5M Commercial Ready grant*
- *\$450K ARC Linkage grant*
- *Other grants under application*
- *IP portfolio*
  - *4 patents lodged*
  - *Other patents under preparation*
- *Development of the research scale reactor – BLG 150*
- *BluGlass is active in key nitrides and LED conferences*
  - *Taiwan, Switzerland, USA etc.*

# Current State of Play





# PIDA, Taiwan November 2007



**Bluglass is a ray of light for clean techs**

02 Jun 2008 | The Australian Financial Review - AFR Market Wrap | Tony Featherstone  
Clean technology stocks are not for the faint-hearted. For all potential, many have burnt investors.

The "efficiency" sub-sector of clean tech, which includes companies trying to reduce energy consumption, has been especially weak.

It includes a grab-bag of stocks such as Gale Pacific, Bluglass, Traffic Technologies and Pro-Pac Packaging. The average one-year return is minus 41 per cent (see table).

But some such as Bluglass, soon to commercialise its technology produce semi-conductor materials for lighting, are making solid operational progress.

Bluglass has been easing to 48¢ - a September 2006.

Bluglass headed to problems with one

But like most small interest.

The Sydney company Lift Capital scan

No Bluglass director still hurt. When

The resignation of personal reasons as a non-executive have spooked investors

Then there is the understood. It is on the radar of some brokers cover the

Bluglass was spun a technology for gallium nitride, which emits

The substance is a light emitting diode some laptops, traffic

<http://www.afr.com/home/vi>

News

12 November 2007

BluGlass announces reactor sale, uniform large-area plasma generation, and Technical Advisory Committee

BluGlass Ltd of Sydney, Australia (which was spun off from Macquarie University, New South Wales in mid-2005) says it has taken three critical steps in the commercialization of its GaN-on-glass blue LED technology, setting it on track to demonstrate commercial production in 2008.

Power and Propulsion Group (SP3) of ) has successfully tested a key component remote plasma CVD (RPCVD) design that demonstrated uniform large-

entered a provisional agreement to al will involve ongoing collaboration for technologies.

Committee of eminent scientists and LED production process and to access advice will provide independent advice to

a second Federal Government grant, this The first payment from the latest grant



BluGlass's Pilot Manufacturing Reactor

REPORTS

**Cheaper Wafer Process Opens Markets for LEDs**

Backed by a A\$5 million grant from the federal government, Australia's next-generation lighting company BluGlass Ltd has just opened a pilot manufacturing plant in Sydney. The plant will be used to demonstrate its light emitting diode (LED) technology and facilitate licensing.

BluGlass is commercializing a unique Australian-bred manufacturing technology known as remote plasma chemical vapor deposition (RPCVD) to reduce the cost of gallium nitride (GaN) semiconductor wafers, a core component of high brightness LEDs.

BluGlass CEO Giles Bourne said: "Our lighting technology will have tremendous benefits for the environment because it not only produces LEDs without the emission of toxic gases, but LED lights use a fraction of the electricity of traditional incandescent bulbs.

"As well, we believe that the ability of our patented RPCVD process to grow nitrides at low temperatures has created new opportunities for hybrid technologies with significant commercial prospects in areas such as oxide-nitride mixed structures, solar technology and silicon."

**RPCVD vs MOCVD Processes**

The BluGlass RPCVD process has been developed as a

by-products.

The BluGlass RPCVD process has been developed as a lower temperature process of between 500 and 700°C for the deposition of crystalline GaN films, making it compatible with growth on glass substrates, as well as synthetic sapphire and silicon. The process doesn't require hydrogen or ammonia, and this results in less expensive gas abatement infrastructure with charcoal or activated alumina filters being sufficient, making the system friendlier to the environment and safer to operate with no toxic ammonia risk.

**Cost-Effective "Green" Process**

The new reactor will be used to demonstrate the significant

energy and cost savings to deliver for next independent analysis savings of more than 40% level.

BluGlass's low cost into mass markets.

News

10 April 2007

GaN-on-glass process could yield 48% savings for LED epi, suggests cost of ownership model

BluGlass Ltd of Sydney, Australia (which was spun off from Macquarie University in mid-2005) has released figures suggesting that its remote plasma CVD (RPCVD) process for low-temperature deposition of GaN onto glass substrates (rather than conventional MOCVD on sapphire) can cut the cost of manufacturing GaN-based LEDs at both the epitaxial level and the assembled device level, according to an independent assessment commissioned from US-based firm Wright, Williams & Kelly Inc (WWK), a cost-of-ownership modeling group for the semiconductor industry.

The model compares the RPCVD process on 2-inch diameter buffered glass substrates versus the more conventional MOCVD process on similar-sized sapphire substrates, based on a 21 x 2" wafer-capacity commercial production tool. MOCVD data was collected by an independent industry expert and includes current best estimates of material and other input costs and productivity for a US-based manufacturing facility.

Wafer-level analysis shows a cost saving of 48% for RPCVD, driven by a 70% reduction in materials and consumables costs (mainly due to using glass rather than sapphire substrate and replacing costly and toxic ammonia with nitrogen). In addition, over a projected useful reactor life of seven years, operating costs are almost 58m lower due to RPCVD's operating temperature of 700°C being about 300°C lower than that of MOCVD.

Also (using an outside expert to provide a backend assembly process flow) an integrated downstream assembly cost model for a 0.5mm x 0.35mm square mesa-structured chip in a standard "Blue LED T1" encapsulated package with a water-clear lens shows that the RPCVD process leads to a 10% cost advantage at the final assembly level for a simple blue LED device (assuming no difference in post-epitaxial processing costs between MOCVD-grown GaN-on-sapphire and RPCVD-grown GaN-on-glass).

Stock of the Week

**Bluglass Announces Pilot Plant to Open**

Thursday June 19, 2008, 8:46 am

Original Announcement: [BluGlass Pilot Plant Opening](#)

BluGlass announced that its pilot manufacturing plant built in Sydney to demonstrate its light emitting diode technology and facilities was officially opened on 17 July 2008. The important milestone comes as: the Company's first commercial-scale semiconductor was produced in the new Silverwater plant; and an Australian Research Council grant was awarded to BluGlass to improve technology. The demonstration plant and reactor is expected to attract significant interest from global lighting manufacturers for new ways of making LED lighting fixtures for commercial, industrial and household use. The Company intends to sell reactors, license its technology and earn royalties from the LED chips that its clients produce.

More information about [BLG.AX](#)

**BluGlass wins \$5m lighting tech grant**

The Sydney Morning Herald, September 26, 2007

The government has announced a \$5 million grant to a company working on an energy-efficient project tipped to provide the next generation of lighting in homes.

The grant will help BluGlass Ltd to commercialise light emitting diodes (LEDs).

BluGlass CEO Ian Macfarlane said the company's technology would significantly cut the cost of the most expensive component of LEDs.

Macfarlane did many different jobs in the electronic world, from forming the numbers on digital watches to emitting information from remote controls or simply indicating when an appliance is on.

BluGlass has a patented process for making low-cost gallium nitride wafers, a core element of LED technology.

Macfarlane said the technology has great potential, with the gallium nitride market expected to double over the next five years, worth more than \$10.8 billion.

The technology's future of lighting because of their high energy efficiency, robust construction, long life, brightness and colour quality and their use of environmentally friendly materials.

Macfarlane said the technology will soon exceed fluorescent bulbs and, in time, will replace incandescent bulbs.

Macfarlane said energy efficiency had a crucial role to play in reducing carbon emissions so the technology is as exciting as the potential of the technology.

The technology would have the same impact on hi-tech industries as the advent of the silicon chip in the 1970s.

**ECO INVESTOR**

June 2007 Year  
Investments  
Environmental P

Inside This I

- Eastern Star Gas
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- Vermitech
- And More...

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# Looking Forward

*Over the next 12 months BluGlass expects to;*

- *Complete the process development*
- *Provide samples to key potential customers*
- *Invite prospective customers from Asia and North America to the BluGlass facilities for live demonstrations*
- *Develop strategic partnerships and explore potential for joint ventures*
- *Execute license deals and equipment sales*



**Thank You**

**Giles Bourne, CEO**

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