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BluGlass Ltd - Announces Major Cost Breakthrough

BluGlass Ltd, today announced new figures demonstrating that its innovative technology has been independently assessed as having the potential to reduce by more than 45% the cost of manufacturing gallium nitride, a core component of LED lights.

BluGlass has revealed the detail of its potential cost savings after presenting its technology and value proposition to a representative section of industry leaders in Asia, Europe and the US and receiving a positive response.

LED's - light emitting diodes - are the future of lighting technology worldwide. LED's are greatly more efficient than traditional incandescent light bulbs and comparable to compact fluorescent bulbs. LED's are also more environmentally friendly to manufacture than compact fluorescents, which are currently the most common replacement for incandescent bulbs.

BluGlass is commercialising a unique process for producing gallium nitride (GaN) at a lower cost than current commercial processes. GaN is a key component in the manufacture of LED's.

Lowering the cost of manufacturing LED's will accelerate their penetration into the \$US100 billion per annum global market for general lighting products. The world market for high brightness LED's alone is valued at US\$4 billion per annum and is expected to rise to more than US\$7 billion per annum by 2009*.

BluGlass CEO David Jordan said today that US-based independent experts Wright Williams & Kelly (WWK) had concluded that BluGlass' technology had the potential to reduce the cost of GaN by 48% at the light emitting diode (GaN-LED) wafer level, and 10% for a simple blue LED device. The costing results are detailed in the attached Executive Summary from WWK who are the world leading cost modeling group for the semiconductor industry

"This is a very significant breakthrough for BluGlass in proving the potential of our technology to cut the cost of LED manufacture. Our aim is to accelerate the development of cheaper and more environmentally friendly LED lighting for homes, businesses and industry around the world".

With the millions of wafers and tens of billions of packaged LEDs produced each year, these cost savings translate to significant potential gains to global LED manufacturers.

Mr. Jordan has just returned to Australia after presenting the BluGlass technology and value proposition to several international LED equipment, materials, wafer and device manufacturers.

"The reception to our BluGlass technology was very encouraging" Mr. Jordan said.

"The companies we spoke to readily understood and supported the benefits offered by such material cost reductions. They additionally valued our demonstrated ability to uniformly deposit GaN over large area and the prospect of tight process control.

"This gives us further confidence in the value this technology can offer to the market."

The novel BluGlass **R**emote **P**lasma **C**hemical **V**apour **D**eposition, (RPCVD) manufacturing technology allows low temperature deposition of GaN onto specially engineered glass

substrates in place of sapphire, the complete elimination of costly and toxic ammonia and a significant reduction in the use of other reactant materials and consumables.

Jordan further stated: "These newly projected cost savings validate the plans outlined by BluGlass in its capital raising prospectus. We will maintain our impressive progress in demonstrating device and process performance and developing a professionally engineered manufacturing tool. In the coming months our new facility in Silverwater in Sydney will showcase the technology, the fabrication process and our commercial production demonstration equipment."

About BluGlass Ltd:

BluGlass is commercialising a new process for producing gallium nitride (GaN) at a lower cost than current commercial processes. GaN is a key component in the manufacture of light emitting diodes (LED's). LED's can have a positive environmental benefit in reducing energy demand and greenhouse gas emissions.

However, the high cost of making LEDs has to date been one of the key factors in limiting their uptake in the general lighting market. Current LED manufacturing costs have restricted their use to electronics, mobile handsets and special situations such as traffic lights and signage.

BluGlass' technology aims to reduce the cost of manufacturing LED's and bring them into common usage in residential and commercial lighting. BluGlass and many lighting energy experts believe that compact fluorescent lighting is a short-term step forward from incandescent light bulbs and that LED's will ultimately become the most commonly available, energy efficient form of lighting worldwide.

LEDs are the longest-lasting, most energy efficient form of lighting, offering tailored "warm" light. They are four to five times more efficient than traditional incandescent light bulbs, and generate significantly less heat. They also have an operational life of up to 10 years, 100 times greater than an incandescent bulb and 12 times more than a compact fluorescent.

BluGlass was founded in June 2005 as a result of research conducted at Macquarie University in NSW during the past decade. It was listed on the Australian Stock Exchange in September 2006 (ASX code BLG).

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*Strategies Unlimited, September 2005

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BluGlass Ltd
Cost of Ownership Impacts for GaN-LED Deposition and Device Assembly

Executive Summary

To determine the potential cost savings of the RPCVD process at the epi-wafer and device assembly levels, BluGlass retained the services of Wright Williams & Kelly, Inc. (WWK), an internationally recognized expert group in cost of ownership modeling.

This report summarizes the results of WWK's cost of ownership models, comparing the RPCVD process on two inch diameter (2") buffered glass substrates against the more conventional MOCVD process on similar sized sapphire substrates. The 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.

The following cost comparison is based on a 21 x 2" wafer capacity commercial production tool for both the MOCVD and RPCVD processes. The wafer level analysis shows an overall cost savings of 48% for RPCVD, with the major cost driver being a 70% reduction in materials and consumables costs. The largest factors in this area are a substantial reduction in substrate cost and the complete elimination of ammonia. Over a projected seven year useful life, the operating costs for RPCVD are almost US\$8M lower than MOCVD for a single piece of equipment.

In order to determine the impact of BluGlass' epi-wafer cost advantage on final assembled LED costs, WWK constructed a downstream assembly cost model for a 0.35 x 0.35 mm square mesa structure blue LED in a standard "Blue LED T1" encapsulated package with water clear lens. WWK used an outside expert to provide a backend assembly process flow; a list of capital equipment including vendor, pricing and production capacity; a list of basic materials and consumables; and an estimate of testing costs. The integrated cost model assumed no difference in processing costs between MOCVD and RPCVD post-epi-wafer and shows that the RPCVD process generates a 10% cost advantage at the finished LED level.

The methodologies used to generate the above results are compliant with standards from Semiconductor Equipment and Materials International (SEMI) covering the areas of equipment reliability (E10), cost of ownership (E35), and overall equipment efficiency (E79).

With more than 3,000 users worldwide, Wright Williams & Kelly, Inc. is the largest privately held operational cost management software and consulting company serving technology-dependent and technology-driven organizations. WWK maintains long-term relationships with prominent industry resources including SEMATECH, SELETE, SEMI, and national labs and universities. Its client base includes nearly all of the top 20 semiconductor manufacturers and equipment and materials suppliers as well as leaders in nanotechnology, micro-electro-mechanical systems (MEMS), opto-electronics, thin film record heads, magnetic media, flat panel displays, and solar panels.