Tuesday, 18 March 2025

RESEARCH REPORT

CORPORATE CONNECT

BluGlass Limited (BLG)

Building cutting edge GaN laser diodes using proprietary novel technology

Price Target	$0.063
Share Price	$0.019
Implied Return	232%

Investment Summary

- BLG is the world's only pure-play visible Gallium Nitride laser company, supplying GaN lasers to the global photonics industry, focused on the quantum, bio-medical, defence, and industrial markets.
- GaN lasers have significant advantages (wavelength, power, precision, reliability) crucial for global OEMs developing next-generation applications. This presents a fast-growing, large addressable market estimated at US$38bn for laser technology by 2033.
- Significant barriers to entry protect BLG's market position. GaN laser diodes require complex manufacturing processes and long development lead times. BLG is one of just a handful of GaN laser diode suppliers able to meet the significant global unmet market demand.
- BLG's unique manufacturing process (RPCVD), with key benefits over the industry standard, and vertically integrated manufacturing capability forms the backbone of its competitive advantage and position as a global GaN leader.
- BLG is commercialising its products by partnering with industry leaders and research institutes on revenue-generating projects that advance its technical roadmap while providing non-dilutive capital to support its direct-to-market GaN laser business. Recent wins include the Microelectronics Commons CLAWS Hub funded by the US Dept. of Defense.
- Based on current forecasts, we derive a DCF value of $0.063 per BLG share. Potential upside comes from faster contract wins and stronger market growth.

Earnings Estimates (A$)

		FY23	FY24	FY25e	FY26e	FY27e
Sales	$m	9.5	10.0	11.1	26.3	56.1
growth	%		5.4%	10.8%	136.8%	113.3%
EBITDA	$m	-7.6	-6.7	-6.8	-5.3	1.4
EBIT	$m	-11.5	-9.7	-10.0	-8.7	-2.2
margin	%		-96.9%	-89.9%	-33.1%	-3.9%
PBT	$m	-11.8	-10.0	-10.1	-8.9	-2.6
Adj NPAT	$m	-11.8	-10.1	-10.1	-8.9	-2.6
growth	%		-13.7%	-0.1%	-12.5%	-71.1%
Rep NPAT	$m	-11.8	-10.1	-10.1	-8.9	-2.6
Adj EPS	cps	-0.8	-0.6	-0.4	-0.3	-0.1
EPS grwth	%		-27.8%	-33.7%	-12.5%	-71.1%
PE	x	-2.5	-3.4	-5.2	-5.9	-20.4
DPS	cps	0.0	0.0	0.0	0.0	0.0
Payout	%	0.0%	0.0%	0.0%	0.0%	0.0%
Div yield	%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: Company data and CCR estimates

Joh Snyman

+61 400 897 559

johsnyman@corporateconnect.com.au

Company Data

ASX code	BLG
ASX price	$0.019
Shares on issue	1,827.1m
Market capitalisation	$34.7m
Cash on hand	~$3.8m[1]
12-month price range	$0.018 – $0.039
ASX turnover (3m avg. daily vol.)	0.35m

[1] Cash = Latest reported balance 2Q FY25

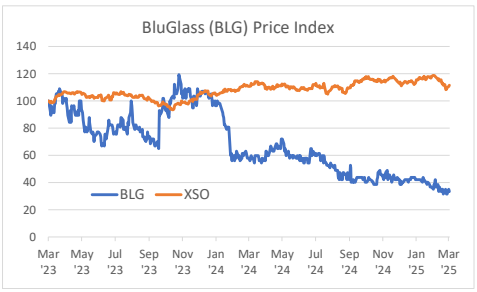
Key Personnel

Jim Haden	CEO
Samuel Samhan	CFO
Ian Mann	COO and CTO
James Walker	Non-Exec Chair

Major Shareholders (Aug 2024)

Citicorp Nominees Pty Ltd	3.63%
BNP Paribas Nominees Pty Ltd	2.94%
UBS Nominees Pty Ltd	1.75%
Access Macquarie Ltd	1.27%
Salon Today Pty Ltd	1.25%

Price Chart (ASX: BLG)



Source: Factset

BluGlass Limited (BLG)

Building cutting edge GaN laser diodes using proprietary novel technology

Investment Summary

Investment Thesis

BluGlass Limited (BLG) is a leading supplier of Gallium Nitride (GaN) laser diode products to the global photonics industry, focused on the quantum, bio-medical, defence, and industrial markets. The key elements of the investment thesis for BLG are as follows:

- **High growth industry** – GaN lasers are crucial for global OEMs, systems integrators, electronics manufacturers, defence contractors and research organisations developing next-generation devices. With significant advantages over traditional infra-red lasers, GaN lasers are expected to grow share in a rapidly expanding market. BLG provides in-demand wavelengths focussing on quantum, bio-medical and defence applications, where the total addressable market is estimated at US$38bn by 2033.
- **Cutting edge flexible products** – BLG's portfolio of laser products represent cutting edge technology, offered as both off-the-shelf standard products as well as highly tailored solutions for particular customers and applications. The portfolio delivers cost-effective solutions built on strong performance, flexibility and fast development. The current portfolio is focussed on violet and blue parts of the spectrum, but the company's longer-term aim is to extend into longer wavelength green lasers by developing novel laser architectures which leverage its proprietary RPCVD manufacturing technology.
- **Proprietary manufacturing technology** – The company has developed a unique manufacturing process (RPCVD), which offers significant benefits over the industry standard (MOCVD). This forms a strong competitive advantage and solidifies BLG's position as one of the leading pure-play GaN laser suppliers globally, with opportunity to capitalise on the fast-growing market. The IP employed in RPCVD and BLG's other technologies, is protected by a number of international patents and other mechanisms in key jurisdictions for semiconductor manufacturing.
- **Commercialisation pathway** – BLG is commercialising its products by pursuing revenue-generating product development projects that have follow-on production opportunities with leading industry and academic partners. There partners are helping BLG to accelerate the development of novel capabilities and technologies underpinning long-term customer and revenue growth.
- **Partnership momentum** - BLG has entered a number of large contracts including the Microelectronics Commons CLAWS Hub funded by the US Department of Defense, and partnering with US-based photonics innovator Applied Energetics Inc and the University of California Santa Barbara (UCSB). These contracts underscore the current momentum in the company's product portfolio.
- **Strong value proposition** – BLG's go-to-market strategy is focused on meeting the genuine market need for custom solutions to address specific customer challenges by providing enhanced manufacturing agility and flexible form factors. The flexibility of customised products to meet diverse individual needs is highly valued by prospective customers. This differentiation continues to be validated by the growing list of customers and partners, with the majority of BLG's orders involving custom integrations.
- **Vertically integrated production** – BLG operates three leading-edge facilities across the US and Australia, providing access to key markets for semi-conductor development and commercialisation. The company runs a vertically integrated manufacturing process, which is more efficient, lower cost and offers greater flexibility.
- **High barriers to entry** – Given the complexity of manufacturing laser diodes and long development lead times, barriers to entry for potential new entrants are high. Consequently, there are only a very limited number of global competitors in the GaN laser space. Moreover, they tend to be part of larger technology or electronics companies, rather than pure play GaN laser producers, with products typically not customised to a great extent (e.g. wavelengths or form factors).
- **Moving towards profitability** – Based on current relatively conservative assumptions around GaN laser industry growth and BLG market share, the company is anticipated to become EBITDA and operating cash flow positive from FY27.

Milestones

Key events and data points to track the company's progress over coming periods include the following:

- Conversion of a current development project into a long-term manufacturing contract of material scale.
- New revenue-generating product development agreements with leading government agency, industry and academic partners.
- Further optimisation of the Silicon Valley manufacturing fab to improve laser performance and yield.
- Securing additional equity capital to fund operations until BLG scales and reaches cash flow breakeven.
- FY25 result due in Aug 2025.

BluGlass Limited (BLG)

Building cutting edge GaN laser diodes using proprietary novel technology

Company Profile

BluGlass Limited (BLG) is the world's first pure-play visible Gallium Nitride (GaN) laser diode company, and one of just a handful of end-to-end GaN laser manufacturers globally. The company develops and manufactures high-performance GaN lasers (advanced semiconductor devices) for the global photonics industry, focused on the defence and aviation, quantum sensing and quantum computing, bio-medical and industrial markets.

The company has transformed from an Australian R&D startup to a vertically integrated manufacturer with a portfolio of niche GaN laser products servicing global markets.

BLG's manufacturing capability ensures it can address complex customer challenges and offer cutting-edge, custom laser development and manufacturing, from small-batch custom lasers to medium and high-volume off-the-shelf products.

Its internationally recognised, proprietary, low temperature, low hydrogen, remote plasma chemical vapour deposition (RPCVD) manufacturing technology enhances laser efficiency, power output, and wavelength capabilities, creating brighter, better performing lasers for advanced applications.

The company is engaged in strategic partnerships with globally leading companies, defence primes (US Dept. of Defense), and research universities on large, revenue generating projects to advance and commercialise its products. This model provides non-dilutive capital to support its direct-to-market GaN laser business, which is slower to scale but with greater long-term opportunity.

Its technology is protected with 58 patents.

Laser diode

Visible Gallium Nitride (GaN) laser diodes are semiconductor devices that emit light in the violet, blue, and green spectrums. These lasers leverage the wide bandgap properties of GaN materials to produce highly efficient and high-power laser beams, making them essential for a range of next-generation applications.

Gallium Nitride (GaN)

Gallium Nitride (GaN) is a high-performance semiconductor material known for its photonic properties, where it is used extensively in light-emitting applications, and for its exceptional efficiency, power handling, and high-frequency capabilities. Unlike traditional silicon, GaN has a wide bandgap, allowing it to operate at higher voltages, temperatures, and speeds while minimizing energy loss.

GaN conducts electrons one thousand times faster than silicon, and is essential for next-generation electronics and optoelectronics, enabling faster, more efficient, and compact devices. It is a key material in power electronics, 5G telecommunications, laser diodes, and high-brightness LEDs, where its superior properties drive advancements in performance and energy efficiency.

Background

BLG was established in 2005 to commercialise technology developed at Macquarie University. The company was listed on the Australian Stock Exchange in 2006. Headquartered in Sydney and with manufacturing facilities in NSW and the US, the company employs around 25 people.

As an R&D company, BLG has developed a proprietary manufacturing technology known as Remote Plasma Chemical Vapor Deposition (RPCVD) to address key limitations and challenges of the industry-standard Metal Organic Chemical Vapor Deposition (MOCVD) technology for the manufacture of gallium nitride (GaN). From 2012-2018 the company refined its RPCVD process, demonstrating several competitive advantages over MOCVD, including the world first active-as-grown tunnel junction technology and dual-n-wave laser architectures, both paving the way to higher-performance lasers. During this time the business also established its foundry services business, where the company developed a reputation for helping customers solve unique challenges through its unique technology advantages and deep GaN expertise.

Recognising growing market demand for high-performance GaN-based laser diodes, BLG shifted its focus in 2019 from its capital equipment and technology licensing strategy, to exploit its unique technology capabilities by launching its direct-to-market GaN laser product business.

The company expanded its supply chain to augment its epitaxy wafer production facility in Sydney, opening a packaging and test facility in the US, and establishing front and back end wafer fabrication contract manufacturers to capture the supply chain from wafer to application.

From 2022 - 2023, BLG accelerated its transition to a fully integrated GaN laser manufacturer, acquiring a Silicon Valley-based laser diode fabrication facility to gain greater control over production and supply chain, and appointing industry veteran Jim Haden as President, then CEO, to accelerate commercialisation. The company launched its first commercial laser product portfolio, focusing on GaN lasers in underserved wavelengths and with flexible form factors to meet unmet market demand.

BLG has secured a growing number of customer orders across each of its target markets, with demand being led by the quantum, defence and aviation sectors, as the company's unique capabilities for high-precision GaN lasers is attracting key partnerships and revenue generating contracts with government agencies, OEMs, national labs, research organisations and starts-ups, including with the US Department of Defense's Microelectronics Commons Hub.

BLG continues to scale its GaN laser production, recently demonstrating world-record GaN laser performance of its single-mode lasers, and demonstrating world-leading DFB GaN laser capabilities for next-generation defence, aviation and quantum applications.

Business Model

Prior to 2021, BLG was largely an R&D focussed operation. This changed with the appointment of Jim Haden, who has a long track record of taking laser technology to market and optimising manufacturing operations. The company in-sourced its wafer fabrication with the acquisition of its Silicon Valley manufacturing facility under Haden's leadership and is now in the process of transitioning to a production focussed commercial operation. At this stage of its evolution, BLG generates four main revenue streams:

- Large development projects – Participation in paid development contracts with government agencies, global institutions and industry leading companies.
- Foundry services – Contract development and manufacture of compound semiconductor wafers for external non-laser customers (power electronics, microLEDs, LEDs, VCSELs).
- Laser product sales – Production of GaN lasers for use in applications across several industry verticals.
- R&D tax rebates – BLG receives various R&D incentives from Government in the form of tax rebates.

BLG's commercialisation strategy is centred on partnering with industry and defence primes on large-scale revenue-generating research and development projects.

The development contracts that BLG enters are typically structured such that the technology development phase is succeeded by follow-on manufacturing contracts and service agreements of significant potential scale.

Revenue from the R&D contracts provide non-dilutive capital to fund development of the company's nascent direct-to-market GaN laser products and critically will see BLG's lasers 'designed-in' into next-generation applications in rapidly growing markets. These markets range from underwater LiDAR, quantum sensing and quantum computing applications, defence and aviation applications, to biotech and medical applications. This is a well-established commercialisation pathway for laser companies, providing access to a large opportunity over the long-term.

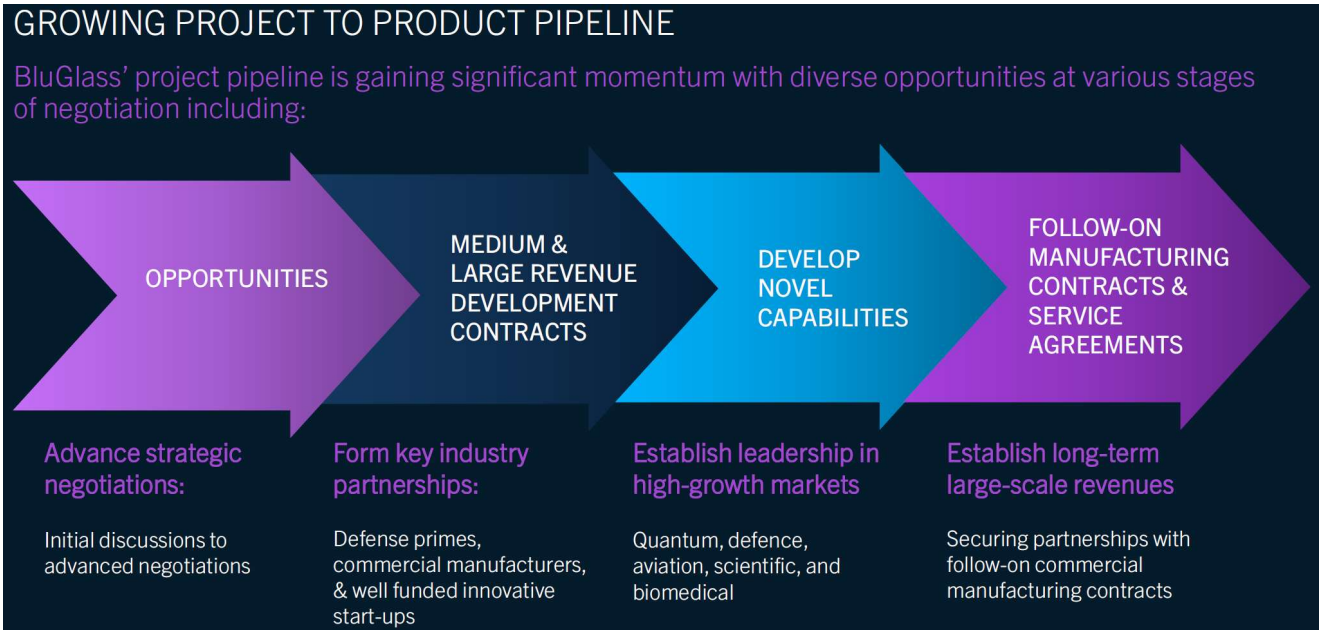
BLG has secured key partnerships with industry leaders, such as North Carolina State University (NCSU) – hub lead for the US Department of Defense's Microelectronics Commons, US-based photonics innovator Applied Energetics Inc, Uviquity Inc, and the University of California Santa Barbara (UCSB), which are helping BLG to accelerate the development of novel capabilities and technologies underpinning long-term customer and revenue growth.

BLG's vertically integrated manufacturing capability and focus on addressing customer challenges through supporting custom integrations and value-add form factors, ensures that the company is well positioned to build its reputation as a partner-of-choice within the fast-growing visible laser market.

BluGlass Limited (BLG)

Building cutting edge GaN laser diodes using proprietary novel technology

Fig. 1 – BluGlass commercialisation pathway



Source: BLG

Assets

Overview

BLG's total asset base amounted to $23.1m as at June 2024. Key assets of the group include the following.

- Cash of $5.6m
- Trade and other receivables of $8.2m – Includes a R&D tax rebate of $5.4m and other receivables of $2.1m.
- Inventories of $0.9m – Entirely comprised of consumables.
- Plant & equipment of $8.1m – Includes a right of use asset of $3.1m (facility leases) plus plant & equipment of $4.2m and leasehold improvements.
- Intangibles of $0.0m – Comprises capitalised R&D costs of $12.1m that have been fully impaired.

The company is also carrying accumulated tax losses not brought to account of $26.6m (Australia) and $3.0m (USA). These represent potential tax benefits of $6.6m and $0.6m respectively at applicable corporate tax rates (25% and 21%).

Facilities

The Company supports its GaN laser operations with vertically integrated manufacturing capabilities at its fabrication centres located across three sites globally:

- Sydney, New South Wales (Australia) – Epitaxial wafer facility and R&D
- Fremont, California (USA) – Front and back-end laser fab
- Nashua, New Hampshire (USA) – Laser diode packaging and testing facility

BluGlass Limited (BLG)

Building cutting edge GaN laser diodes using proprietary novel technology

The upgraded Sydney facility was opened in Aug 2019 and increased capacity by >30%. The facility now has five deposition systems for epitaxy, several of which incorporate BLG's unique RPCVD technology. One of these is a higher capacity BLG-500 system, which is an Aixtron MOCVD system retrofitted with RPCVD capability. This system can produce six 6" wafers or 42 2" wafers simultaneously.

The Sydney facility is used to manufacture the GaN semiconductor materials (called epitaxy) for BLG's lasers and to produce custom epitaxy for external customers. It is estimated the facility has a production capacity of up to 10,000 wafers pa, or the equivalent in revenue terms of ~A$253m pa.

BLG commenced its US operations in 2020, opening its Nashua packaging and test facility outside the Boston area.

Key laser diode fab acquired in Silicon Valley

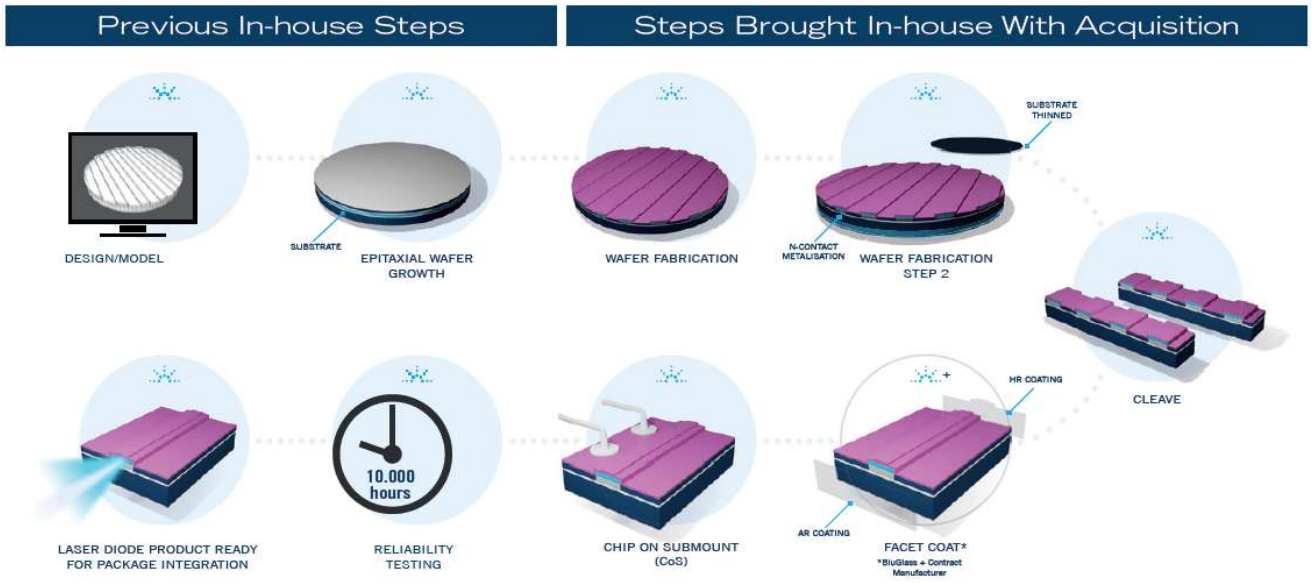
In 2022, the company completed its acquisition of a purpose-built laser fab in Silicon Valley, bringing its full laser supply chain in-house. BLG's owned fab has accelerated the company's laser development, increased production capability, and will drive significant positive uplift in gross margins and growth runway. The peer group of producers of GaN lasers appear to be delivering gross margins of 35-45%. BLG is expected to reach similar levels once it reaches meaningful market share levels. Indeed, BLG's market positioning with customisation, flexible form factors, unmet wavelengths, and amplification devices means it is selling lasers for a premium price over competitors.

The Fremont fab was previously producing complete Indium Phosphide laser diodes on 2" and 4" wafers. The production steps brought in-house with the acquisition include:

- Adding conductive metal layers required to complete the diode structure on top of the wafer.
- Cutting the wafers into laser bars or individual dies.
- Coating the sides of the dies.
- Before shipping the dies to Nashua for mounting into packages and testing.

Acquiring the fab broadly quadrupled BLG's capacity to produce GaN laser diodes in volume terms, with prospective annual wafer capacity of ~10,000 wafers at full production, representing potential annual revenue of ~US$160m (A$253m).

Fig. 2 – Production processes brought in-house



Source: BLG

This transaction reduced BLG's supply chain complexity by bringing in-house key downstream process steps previously outsourced to five specialist contract manufacturers. It also brought potential to add additional deposition equipment for future capacity expansion. Longer term, having a captive supply chain and full operational control should have a very beneficial impact on revenue and profit, as BLG would generate higher ASPs and not be sharing earnings with contract manufacturers.

BLG expects that over time, bringing 3rd party production processes in-house will significantly improve potential gross margins (from ~30% to ~45%), including halving of wafer productions costs. However initially the costs of operating Fremont have had a negative impact on margins pending the sufficient scale-up of production, likely from FY25.

Moreover, the acquisition has enabled BLG to complete design iterations more rapidly, accelerating its product development pathway. The time taken for a complete design iteration when relying on 3rd parties meant that only 4-5 full iterations were completed in a year, whereas BLG can now complete up to 48 full iterations in a year, radically speeding up development and enabling the company to develop advanced capabilities, including GaN DFB lasers and optical amplifiers. Having in-house capabilities also speeds development of extended wavelength green and ultra-violet laser diodes (which are higher value products) and allows BLG to progress several development programs concurrently.

BLG was able to acquire the fab at a price of US$2.5m (A$3.3m), which is extremely attractive relative to the cost of building a new facility. There were also further costs of A$3.5m associated with converting the facility to GaN laser production and A$2.5m for more coating and reliability testing equipment (so A$9.3m in total). Nevertheless, this was a highly attractive transaction given the estimated cost of building an equivalent fab of ~US$40-50m.

Finally, having a GaN laser diode fab located in Silicon Valley places BLG closer to potential customers in key target markets and enables it to tender for US Government and Department of Defense contracts. There is also the benefit of access to a potent local talent pool of specialist semiconductor engineers and scientists as well as focussed investors with a deeper understanding of the semiconductor industry.

Acquisition and integration of GaNWorks Foundry

The Fremont facility was further enhanced in Dec 2023 when BLG acquired its contract manufacturer GaNWorks Foundry for US$0.8m and integrated its operations into Silicon Valley. This acquisition included specialist GaN wafer equipment and transfer of crucial manufacturing steps that complete the vertical integration of the Silicon Valley facility. Some of these process steps include GaN n-side wafer metalisation, wafer thinning, and laser bar cleaving capabilities.

In addition, the acquisition included the transition of expert GaN laser engineers.

BLG's Fremont wafer fab now benefits from having all core wafer processes under its operational control, reducing cycle times, improving production yields, increasing learning cycles, and delivering significant long-term cost savings. The company continues to improve these processes since integration and believes that it has identified more opportunities to enhance capabilities. These are currently being implemented to increase production yield and throughput, as well as to improve product performance and reliability.

Products and Services

Foundry Services

BLG offers compound semiconductor development services for customers through its boutique foundry services subsidiary, EpiBlu. EpiBlu provides design, prototyping and low volume manufacturing of GaN epitaxial wafers, using both MOCVD and proprietary RPCVD technologies, at the Silverwater (Sydney) facility.

The business is relatively small scale compared to global leaders such as IQE. However, it captures an important niche through its ability to offer small volume, cost-effective custom services to help clients trial and develop new devices. This includes use of R&D facilities and associated staff. BLG and EpiBlu have developed a reputation for solving complex challenges and developing novel capabilities. The foundry services leverage more than a decade of GaN epitaxy expertise to help customers develop next generation applications.

BluGlass Limited (BLG)

Building cutting edge GaN laser diodes using proprietary novel technology

The company's deep epitaxy expertise, combined with its unique deposition capabilities, are a key competitive advantage, complementing its laser business and providing additional revenue and customer opportunities. Additionally, it is this expertise that has enabled it to become a laser industry challenger developing world-leading results in such a short space of time.

BLG will continue to offer foundry services and contract manufacturing going forward, but the primary business focus is on growing its laser product portfolio and laser sales.

Epitaxy

Epitaxy is a critical technology for manufacturing compound semiconductors, which combine two or more elements to create advanced materials with unique electronic and optical properties. These engineered materials enable miniaturised, high-performance devices that go beyond the capabilities of traditional silicon semiconductors.

The epitaxy process involves depositing ultra-thin atomic layers onto a specialised substrate inside a reactor. This precision-controlled growth method allows manufacturers to build semiconductor materials with atomic-scale accuracy, effectively growing an electronic circuit directly onto a wafer. By carefully designing crystal structures, engineers can significantly enhance the efficiency, speed, and performance of semiconductor-based technologies.

Over the past two decades, advancements in epitaxy have driven breakthrough innovations in smartphones, high-speed internet, laser displays, solar panels, and next-generation electronics, making devices smaller, faster, and more energy-efficient.

Laser Diodes

BLG specialises in the production of visible light Gallium Nitride (GaN) lasers. The company offers a full suite of end-to-end laser diode services that includes design, fabrication, and packaging capabilities that can range from off-the-shelf products to unique customised products.

GaN lasers present a large and fast-growing revenue opportunity, in a market with relatively few global competitors and high barriers to entry. GaN lasers offer significant advantages over traditional infrared (invisible) laser technology and are used in a rapidly growing number of applications across different industry verticals. These include:

- Industrial – Cutting and welding materials, machine sensing, 3D printing
- Display – Augmented/virtual reality, heads-up display, projectors
- Life sciences – Flow cytometry, medical diagnostics, DNA sequencing, endoscopy
- Scientific – Quantum computing and sensing
- Defence – Sensors for navigation

BLG solves customer challenges by offering commercial laser products with significant variations in terms of design, modality, and form factors to serve a number of unique needs. In this way, the company's offerings address often underserviced segments of the market.

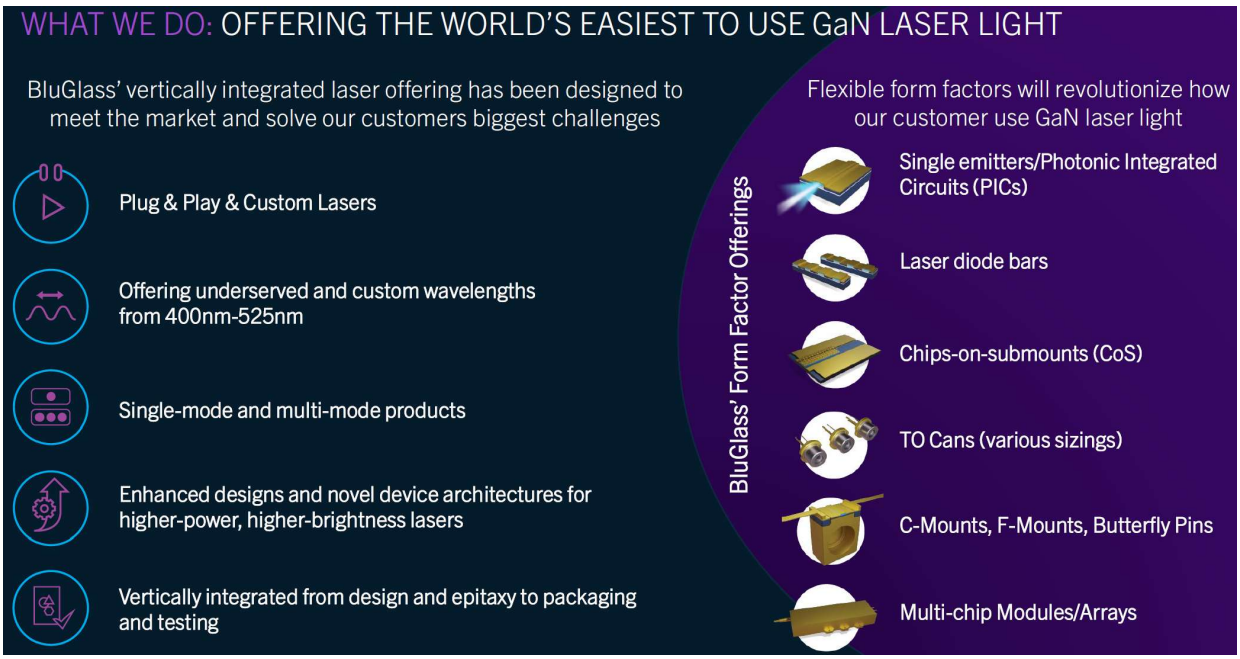
BLG's use of proprietary RPCVD manufacturing technology with its inherent advantages (discussed further in the Manufacturing section below) enables it to significantly challenge competitors in the manufacturing of GaN lasers, in particular for the high-precision applications demanded by the defence, aviation and quantum markets.

BLG's laser portfolio spans the visible wavelength spectrum from ultra-violet (397nm) to aquamarine (488nm) today, with the company extending its wavelength range further into UV and into green. Initial product launches spanned violet at 405nm and 420nm as well as blue at 450nm.

BluGlass Limited (BLG)

Building cutting edge GaN laser diodes using proprietary novel technology

Fig. 3 – Key products



Source: BLG

Form Factors

Form factor is the hardware design and package of the laser diode ready for customer integration. BluGlass provides flexible integration options, such as combining its laser diode components with heatsinks, sealed environments, and even optical components to provide easier to use solutions for customers.

Current portfolio

BLG is an agile manufacturer pursuing a project-to-product commercialisation strategy, a well-established growth pathway for laser companies to expand into high-value markets. This allows BLG to streamline production, standardise high-performance laser products, and accelerate commercialisation.

BLG's current portfolio includes:

- Off-the-shelf GaN laser diodes – Available in ultra-violet to aquamarine (397-488nm) wavelengths, with single-mode and multi-mode options. Applications include industrial (cutting, welding, materials processing), medical (biomedical imaging, phototherapy, diagnostics), defence (directed energy applications, laser-based sensing), quantum & photonics (quantum sensing and computing, optical communications).
- Custom GaN laser solutions – Tailored for specific power, wavelength, and precision requirements for defence, photonics, optical technologies, navigation, aerospace, marine applications and more.
- Gain chips – The company introduced its semiconductor optical amplifier (SOA) and Master Oscillator Power Amplifier (MOPA) gain chips at Photonics West in Jan 2025. BLG's single mode and DFB gain chips combine high-fidelity power and performance at the wafer level, paving the way to drastically improve size, weight and cost for defence and aviation applications, and eliminating several downstream packaging steps.

As the company continues to innovate, we expect the portfolio to grow as BLG takes advantage of its manufacturing capabilities to serve wider parts of the laser diode market. This makes BLG well positioned to capitalise on the many macro tailwinds on the horizon in terms of new and emerging applications.

Fig. 4 – BLG current laser portfolio

	Violet			Blue			Green
	395nm	**405nm**	**420nm**	**450nm**	**470nm**	**488nm**	**525nm**
Available	SM-200mW	MM-1W MM-3W SM-250mW	MM-1W MM-3W SM-250mW	MM-1W SM-100mW			
In Development		SM-300mW -400mW	SM-300mW -400mW	MM-1.6W MM-2.2W MM-3.5W SM-250mW	MM-2W SM-100mW -200mW	SM-100mW -200mW	MM-0.5W -2W SM-80mW -100mW
Next Generation		SM-500mW	SM-500mW	MM-5W		MM-1.5W -2W	

Source: BLG

MM = Multi-mode, SM = Single mode

Quantum precision - Progressing novel DFB laser development

BLG and its development partner University of California Santa Barbara (UCSB) are the world leaders in visible GaN Distributed Feedback (DFB) lasers for ultra-precision applications. GaN DFB lasers are not commercially available to date. These lasers provide a narrow width with high purity, lending to very complex applications such as quantum computing, that require a high degree of precision.

Over recent periods, BLG and UCSB have continued to make significant development inroads, including increasing the side-mode suppression ratio of the DFB lasers by 100%, exhibiting power output over 100mW from a single diode, and operating at single-frequency over a wide range of current densities. BLG also reduced operating voltages by 27%, which is a key factor in device reliability, thermal management, and wavelength stability.

Ultra-precision, single-frequency DFB visible lasers are not commercially available in the near ultra-violet (UV) and visible spectrums. Visible DFB lasers offer multiple advantages for emerging technologies with its precise and stable operation critical to enabling quantum sensing, navigation, and communication needs as well as next-generation defence and aviation applications. They also address key challenges for quantum computing, facilitating scaling-up in production volume and scale-down in size.

BLG's pioneering DFB development is attracting significant customer and partner interest. In Jan 2024, the company received its first order of the prototype blue GaN DFB lasers from an advanced laser systems pioneer for evaluation in next generation defence, aviation and scientific applications.

Manufacturing and Go-to-market

Proprietary manufacturing technology

All microelectronic devices, including computer chips, transistors, LEDs and laser diodes, are enabled by semiconductor materials. Semiconductor materials can include Silicon as well as advanced compounds such as Gallium Nitride (GaN) and Silicon Carbide (SiC). Compound semiconductors are made by depositing layers of semiconductor material on a substrate.

In the case of GaN devices, a layer of GaN crystal is formed by reacting certain Gallium containing compounds with a Nitrogen source. The industry standard process, Metal Organic Chemical Vapour Deposition (MOCVD), uses high flows of highly toxic ammonia (NH_3) as the Nitrogen source. As the ammonia molecular bonds are robust, this process requires the substrate to be heated to a minimum of 940°C, and typically over 1200°C, to initiate the chemical reaction.

BLG has developed a proprietary manufacturing technology for the manufacture of GaN, called Remote Plasma Chemical Vapour Deposition (RPCVD). This patented process is similar to the industry standard process, Metal Organic Chemical Vapour Deposition (MOCVD), with several key benefits.

The key advantage of the RPCVD technology is that it operates at significantly lower temperatures (up to hundreds of degrees cooler) than the conventional MOCVD process. The critical light emitting active region of GaN photonics relies on a temperature sensitive material called Indium Gallium Nitride (InGaN). By growing these critical temperature sensitive layers, and the above layers of the structure at lower temperature, it can lead to increased device quality, reduced resistivity and performance losses, and enhanced longer and shorter wavelength devices, which require more Indium rich layers to achieve the required wavelength.

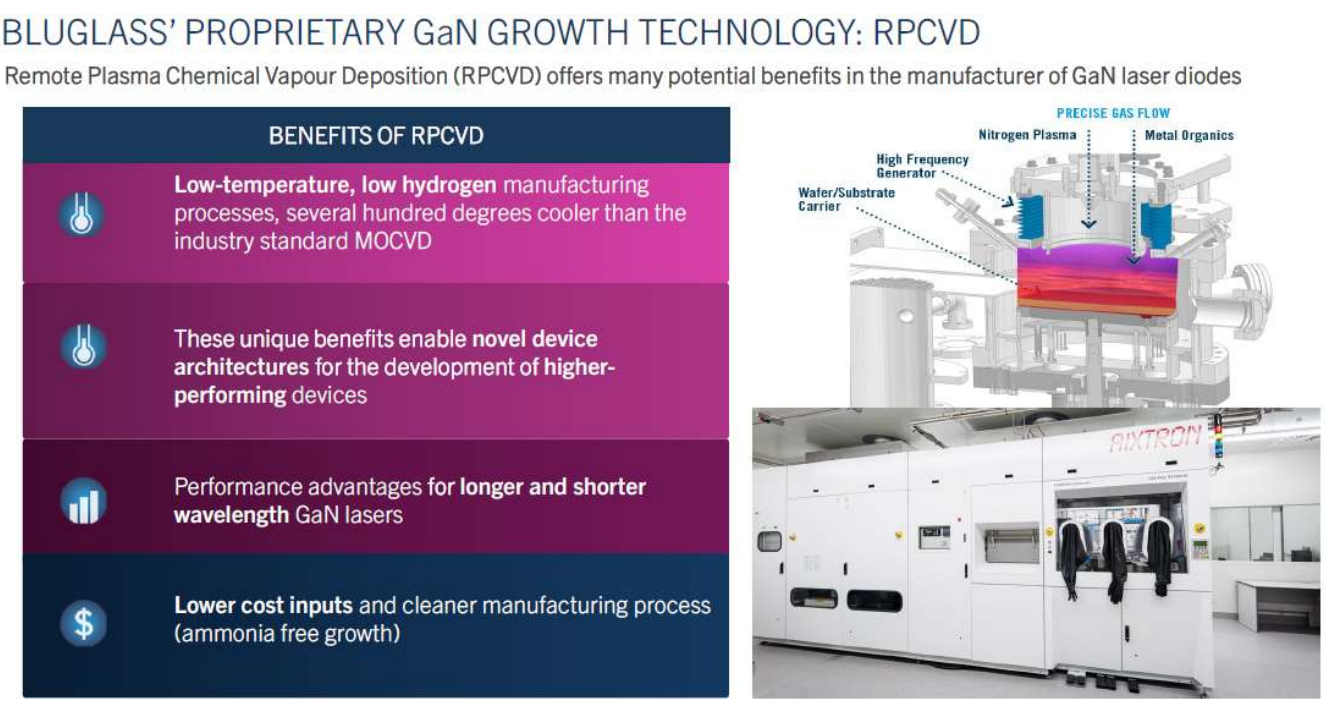
RPCVD also involves less active hydrogen when depositing layers of GaN. Inert Nitrogen (N_2) plasma is used as the source of nitrogen instead of ammonia (NH_3), which avoids some issues in the standard MOCVD process where active hydrogen can interact with the epitaxial layer being formed.

The lower temperatures and reduced hydrogen can result in higher performance epitaxial layers, which contributes to brighter laser diodes.

BLG's expertise is in leveraging the best of both MOCVD and RPCVD to produce its GaN lasers.

At the same time, the company also offers foundry services utilising its deep epitaxy knowledge.

Fig. 5 – Proprietary manufacturing technology



Source: BLG

Go-to-market: project to product strategy

Since launching its laser business in 2020, BLG has pursued a project-to-product strategy to accelerate commercialisation and drive profitability under laser veteran CEO, Jim Haden. Having successfully transitioned several advanced laser companies from start-up to profitable, high-growth commercial entities, Haden has been instrumental in bringing BLG's GaN laser technology to market, improving laser performance and reliability to successfully launch its first suite of products and secure initial customer orders.

The project-to-product strategy provides a structured path to scale, leveraging joint development projects to generate early revenue while building a pipeline of future product customers. BLG anticipates that initially 90% of revenue will come from projects and 10% from product sales. As BLG establishes itself as a leading supplier of GaN lasers, this ratio will flip, with product sales ultimately driving ~90% of revenue. This phased approach ensures non-dilutive capital supports the company's direct-to-market business, allowing it to scale sustainably while minimising financial risk.

During the project phase, BLG strategically partners with government agencies, OEMs, research organisations and companies developing next-generation technology where its GaN laser solutions offer a clear competitive advantage – such as superior power efficiency, wavelength flexibility, and performance in high-precision applications. This way, BLG's lasers are tested in customer applications that are being developed concurrently, enabling the company to refine its products with customer feedback.

These partnerships not only provide near-term revenue but position BLG for multi-year manufacturing contracts, converting project collaborators into long-term customers as the industry adopts GaN laser solutions, in new and existing markets at scale. By systematically shifting from development-driven revenue to a product-led model, BLG is establishing a sustainable, high-margin business while securing a foothold in the rapidly growing GaN laser market.

BLG's go-to-market strategy is focused on meeting the genuine market need for custom solutions to address specific customer challenges by providing enhanced manufacturing agility and flexible form factors. This market differentiation continues to be validated by the growing list of customers and partners, with the majority of BLG's orders and proposals involving the development of custom integrations, and/or novel capabilities and applications.

BLG continues to invest in the infrastructure and relationships required to win high-value product development projects. It is anticipated these partnerships will help the company further develop its portfolio and improve pathways to commercial viability.

As an approved member of the US DoD's ME Commons, and with its vertically integrated supply chain (Australia and the US), BLG is the only GaN laser supplier currently able to supply US government agencies and defence primes, placing BLG at a highly strategic advantage.

Customers

BLG is working with a diverse range of customers, from government agencies, leading original equipment manufacturers (OEMs), to renowned international universities and research institutions, and industry start-ups.

The go-to-market strategy has seen BLG experience strong momentum in its business over recent periods with several successful contract wins. These include:

- A$5.5m US Department of Defense sub-contracts for laser development with North Carolina State University, lead member of the Microelectronics Commons CLAWS Hub (A$2.6m + A$2.9m). This contract is to advance BLG laser capabilities in key dual-use markets, being quantum, defence, commercial aviation, bio-medical and sensing.
- Multi-phased JDA with US semiconductor pioneer to develop novel Photonic Integrated Chips (PICs). BLG secured A$1.2m for the first phase of development and also entered a follow-on master supply agreement for commercialisation in a market estimated to be valued at $5bn by 2030.
- A$1.9m secured from a European wafer customer for the transfer of non-laser IP rights, developed under paid foundry contract.
- A$120,000 order from repeat customer for GaN laser products from a leading US research university.
- MOU with Applied Energetics to combine high-performance solutions and expertise across a wide range of emerging technologies.

Key partnerships

CLAWS Hub – Microelectronics Commons program

In FY24, BLG was awarded its largest contract to date, signing an A$2.6m laser development contract with North Carolina State University (NCSU) – the lead member of the Commercial Leap Ahead for Wide Bandgap Semiconductors (CLAWS) Hub.

The CLAWS Hub is one of eight Microelectronics Commons innovation hubs established by the US Department of Defense. Funded by the CHIPS and Science Act, the US$2bn ME Commons program is focused on expanding the USA's global leadership in microelectronics. Core development agreements are awarded on an annual basis, with BLG delivering all milestones under its first contract, meeting single-mode electro-optical performance metrics across core 405nm, 420nm, and 450nm wavelengths.

BLG's' future collaborative role in the CLAWS Hub potentially includes advancing the core technology and extending DFB lasers from blue to violet, as well as developing ultra-violet through to green single-mode lasers and Photonic Integrated Circuits (PICs). The company's CLAWS participation has increased BLG's visibility and reputation with both hub members and the broader defence, quantum sensing and computing, and high-speed communication communities. These are the likely end markets where the technology will be applicable.

The current members of the CLAWS Hub include:

- North Carolina State University (lead)
- BluGlass
- GE
- North Carolina Agricultural and Technical State University
- Adroit Materials
- Coherent
- Kyma Technologies
- Wolfspeed

University of California Santa Barbara (UCSB) – DFB lasers

BLG is an invited member of the University of California Santa Barbara's Solid-State Lighting & Energy Electronics Centre (SSLEEC) consortium, the preeminent GaN consortium in the world.

The SSLEEC is an invitation-only collaboration between industry leaders and the UCSB's pre-eminent gallium nitride researchers, including Nobel Laureate, Professor Shuji Nakamura, and industry luminary Professor Steven DenBaars.

BLG is partnering with UCSB to bring visible Distributed Feedback (DFB) lasers to commercial viability. These are visible lasers operating in near single-frequency, with ultra-narrow line-width (suitable for atomic scale stimulations) and high in purity, leading to breakthroughs in technology capabilities and next-generation devices. BLG's GaN DFB lasers are being designed for wafer-scale fabrication to reduce downstream optical complexity and cost, at the same time as addressing critical challenges in quantum technologies and computing, while simultaneously enabling greater production volume and smaller device sizes.

Applied Energetics MOU

In FY24, BLG began collaborating with Applied Energetics to develop advanced laser systems for military and commercial applications under a Memorandum of Understanding (MoU). A leader in defence and dual-use photonics, Applied Energetics (OTCQB: AERG) specialises in ultrashort pulse (USP) optical systems used by the US Department of Defense, defence primes, intelligence community, and commercial sector. The collaboration leverages BLG's complementary GaN laser products, including its Distributed Feedback (DFB) lasers, within Applied Energetics' advanced dual-use laser systems.

The two companies are focused on developing new laser wavelengths, and higher performance solutions that deliver more efficient and cost-effective solutions for next-generation military, aviation, and commercial markets. Combining the complementary laser technologies and capabilities enables both companies to address new market segments, particularly applications where size, weight and power are critical. The collaboration reinforces BLG's reputation within US government and intelligence sectors, and aligns with its product development roadmaps.

Uviquity Inc.

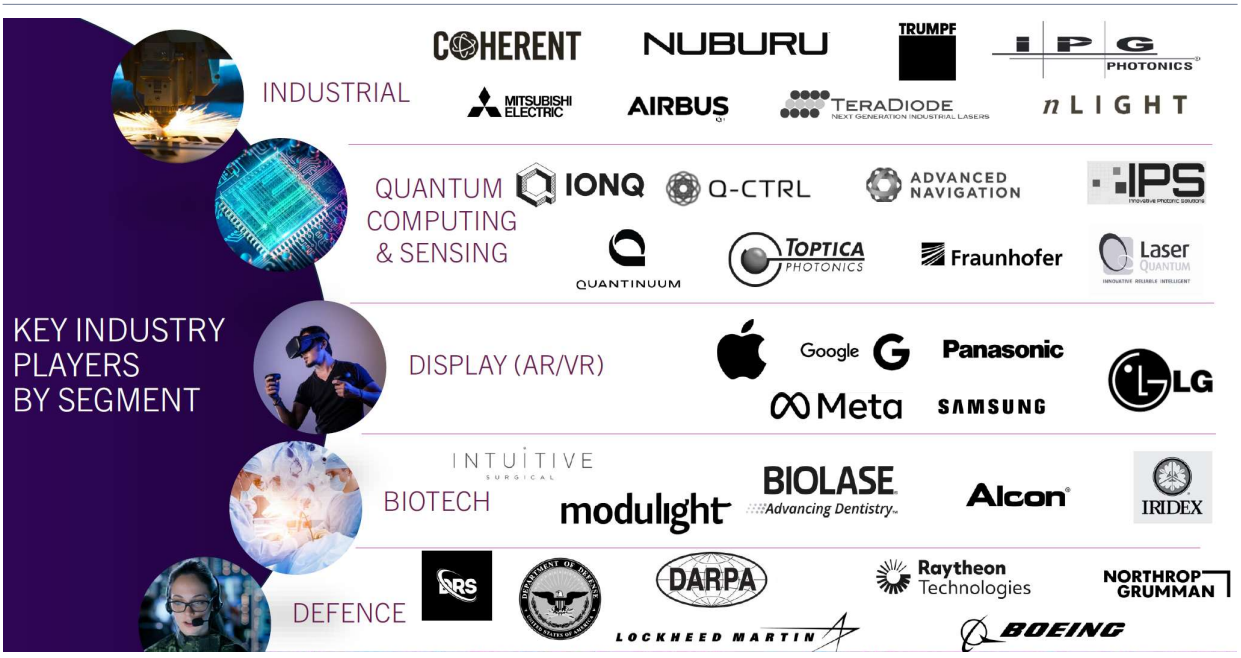
In 2024, BLG secured a A$1.2m order for the first of a three-phase joint development agreement with a leading US-based venture-backed start-up pioneering integrated photonics.

The multi-year development agreement will see BLG and its collaboration partner develop novel photonic chips that combine highly complementary technologies for the production of GaN photonic integrated circuits (PICs), with a follow-on master supply agreement for commercialisation in a rapidly emerging market (~$5bn by 2030).

Target end customers

BLG's target end customers are leading global original equipment manufacturers (OEMs) of various devices and other applications for visible GaN lasers across several industry verticals. These target verticals and some leading corresponding OEMs are illustrated in the chart below.

Fig. 6 – Diverse target client base



Source: BLG

Suppliers

Vertically integrated production

To scale its laser diode production capability, BLG previously put in place an extensive supply chain to ensure its capability to ship at commercial volumes. This included having sufficient in-house epitaxy capacity, and then securing 3rd parties to carry out certain extended post-epitaxial stages required to convert epitaxial wafers to final microelectronic devices for customers. These stages include such functions as optical coating, cutting wafers into individual diode chips and packaging the chips in casings to facilitate ready integration onto circuit boards. Testing of individual diodes was done in-house at the Nashua facility.

However, as discussed in the Facilities section, the acquisition of the Fremont fab has enabled BLG to bring these extended processes in-house to create a vertically integrated production process.

Manufacturing equipment suppliers

There are three major companies globally that manufacture equipment employing the MOCVD process, listed below. These companies supply BLG with semiconductor chip manufacturing equipment. BLG retrofits this equipment with RPCVD technology to enable its proprietary process. Retrofitting RPCVD technology enables different layers of the same epitaxial structure to be grown using either MOCVD or RPCVD without moving the wafer from the reactor chamber.

The three major suppliers are:

- Aixtron (Germany)
- Veeco (USA)
- Advanced Micro-Fabrication Equipment (China)

Partnering with key manufacturers of MOCVD equipment is another potential way for BLG to commercialise its proprietary RPCVD technology, through the sale of equipment modules to add RPCVD functionality to existing systems. However, these potential partners have not shown significant interest in RPCVD for laser diodes, although they have continued interest for other applications.

Wafer suppliers

GaN laser manufacturing relies on specialist bulk GaN wafers. BLG purchases its bulk GaN wafers from reputable suppliers in Japan and Europe.

Suppliers include:

- Kyma Technologies
- Kyocera
- Mitsubishi Chemical Corporation
- SOITEC
- Sumitomo Chemical Corporation
- Toyoda Gosei

Government and regulation

Intellectual property protection

BLG has developed a proprietary novel manufacturing technology for compound semiconductors, known as Remote Plasma Chemical Vapour Deposition (RPCVD). This process is similar to the industry standard process, Metal Organic Chemical Vapour Deposition (MOCVD), but with a number of key advantages (refer Manufacturing and Go-to-market section earlier in this report).

The IP employed in BLG's proprietary RPCVD manufacturing technology, as well as tunnel junction, LED and laser device technology, is protected by a number of international patents and other mechanisms in key jurisdictions for semiconductor manufacturing.

BLG's current intellectual property portfolio (as at Jun 2024) comprises:

- 42 internationally granted patents in key jurisdictions, including Japan, Taiwan, China, USA, and Europe.
- 12 applications in Patent Cooperation Treaty stage
- 3 US provisional patents
- 11 patent families
- 17 trademarks

Rights secured to DFB laser fabrication IP

During FY24, BLG secured the rights to license key DFB fabrication IP from development partner, the University of California Santa Barbara (UCSB) Solid State Lighting and Energy Electronics Consortium (SSLEEC). The two provisional patents protect laser design, microfabrication techniques, and specialised optical structures for high-performance GaN Distributed Feedback (DFB) lasers for use in wavelengths spanning ultraviolet to green.

Some IP transferred to European wafer customer

In July 2024, BLG received a one-off payment of A$1.93m from a European wafer customer to acquire IP developed for the customer under a paid foundry services contract. BLG has provided contract foundry services to this customer since Jan 2022.

The IP relates to the GaN growth techniques used on the customer's specialty wafers. BLG developed the IP for the customer under a paid contract development program. The IP transfer is limited to MOCVD deposition of GaN and does not include any of BLG's proprietary RPCVD technology or laser diode IP.

BLG continues to provide contract foundry services to the customer, with increased volumes being expected. A paid development contract remains on foot, with the IP transfer enabling BLG to expand its collaboration into a commercial manufacturing contract as the customer's product development matures.

BluGlass Limited (BLG)

Building cutting edge GaN laser diodes using proprietary novel technology

Business Analysis

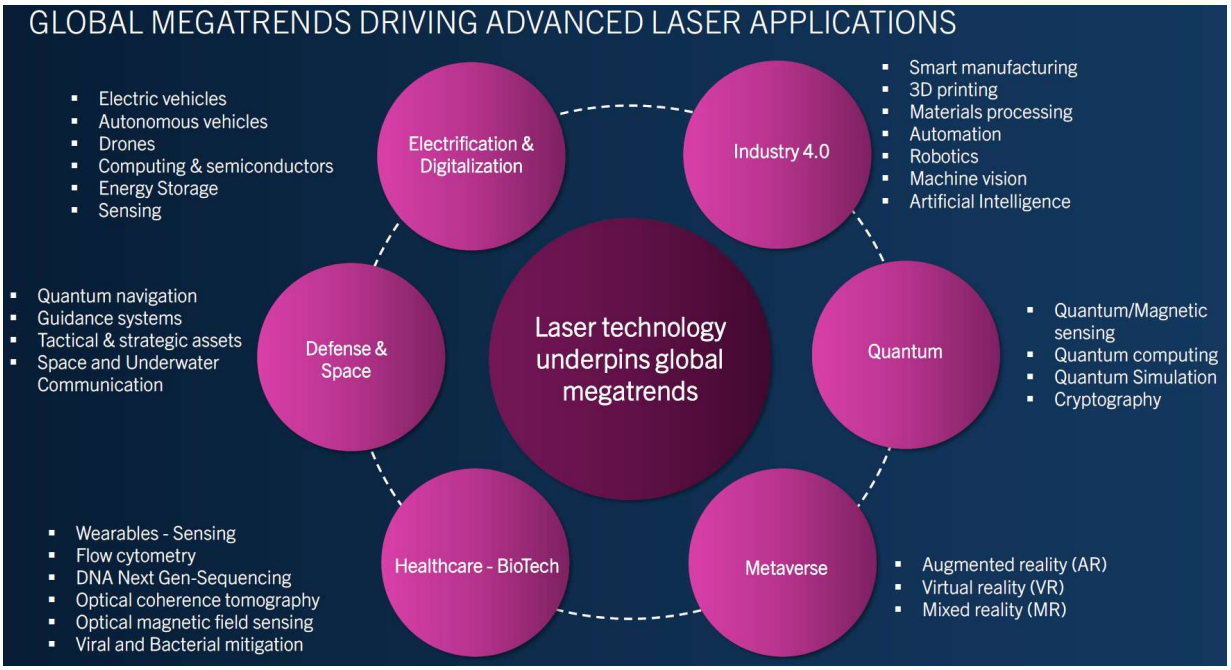
The Global Laser Market

Background

The global laser market has almost tripled in the past decade, driven by the widespread adoption of high-tech applications such as smart phones and TV's, 3D printing, electric vehicles and renewable energy storage, as well as significant growth across industrial materials processing.

Laser technology is a critical component for many applications on the cutting edge of technology, driven by several global macro trends, as illustrated in the chart below.

Fig. 7 – Key sectors dependent on laser technology applications



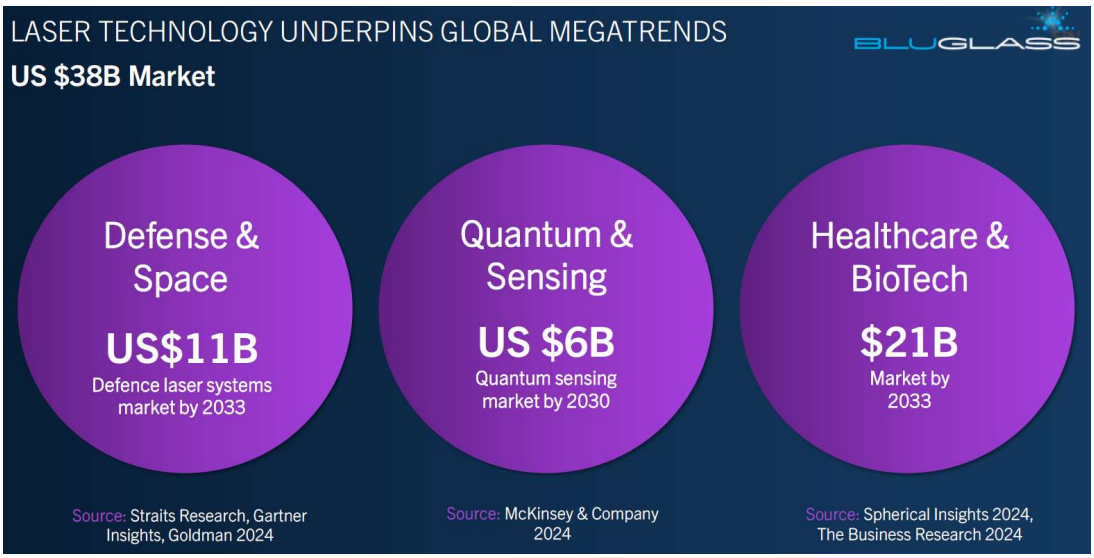
Source: BLG

Market size and segments

The global market for laser devices is estimated at around US$25bn for 2025. GaN lasers are an emerging technology displacing traditional infrared lasers, due to the inherent advantages of GaN lasers' visible light, including superior brightness, higher absorption in key industrial metals that contributes to improved precision and cleaner processing, as well as better interaction with both organic and quantum materials. GaN lasers are both disrupting existing markets at the same time as opening new ones not previously available with traditional lasers. The GaN laser market now accounts for ~10% or US$2.5bn of the total market and is expected to remain the fastest growing laser segment.

Within the total addressable market, BLG's competitive advantages are being sought after by customers across three rapidly growing market segments – defence and space, quantum sensing and quantum computing, and biotech and biomedical markets, which represent an aggregate addressable market of US$38bn across all laser types by 2033.

Fig. 8 – Global laser market projections

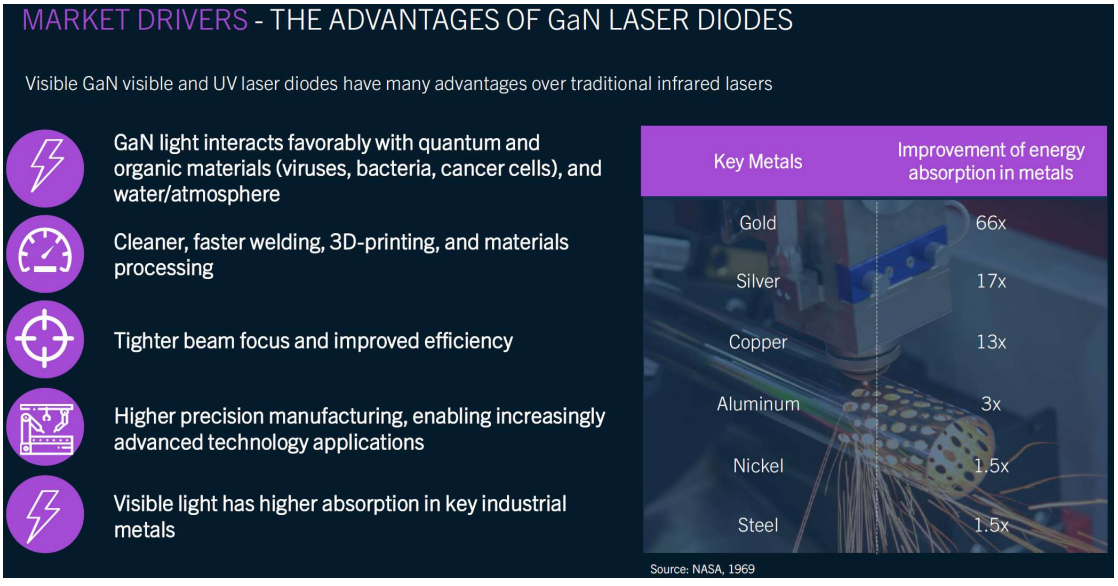


Source: BLG

Growth drivers

Demand for GaN lasers is expected to accelerate over the next decade driven by the mega trends noted above and emerging new applications for the technology. This is further underpinned by the unique advantages of GaN lasers over traditional laser systems, which is summarised in the chart below.

Fig. 9 – GaN laser advantages



Source: BLG

The supply of GaN lasers is expected to remain constrained in the medium-term largely due to high barriers to entry, a lack of focus from legacy suppliers, and limited end-product flexibility. As these factors persist, the supply-demand imbalance is likely to continue, creating favourable market conditions for pure-play GaN laser suppliers like BLG.

The company is well positioned to take advantage of these market dynamics. With a history of innovation and cutting-edge R&D, combined with its unique technology advantages, and demonstrated performance advantages for the precision markets, BLG is emerging as a provider of choice to serve the GaN laser market. As this market continues to evolve and grow, the company will likely continue to expand its product offerings to fully capitalise on the opportunity.

The market opportunity

Following customer and partner demand, BLG has more recently focused its short and medium-term product development to capitalise on where it can lead the market - in emerging high-precision industry verticals:

- Quantum/Scientific
- Biotech
- Defence

Updated market research and analysis by independent organisations has led to revised and extended market projections for each of the sectors, with GaN lasers not only changing how advanced technologies are manufactured, but advancing the technologies that can be manufactured. The total addressable market for these rapidly emerging verticals across all laser segments is estimated to be around US$38bn by 2033.

Goals and Strategy

BLG continues to position itself to take advantage of the fast-growing GaN laser diode market to maximise shareholder returns. In the short term, the company continues to pursue revenue-generating development partnerships as it works towards industry acceptance and commercialisation of its growing product portfolio and advanced capabilities, including leveraging the advantages of its proprietary RPCVD manufacturing technology.

Solving complex customer challenges is the key tenet of BLG's value proposition, enabling the company to build long-term partnerships with government agencies, OEMs, distributors, and systems integrators.

This commercialisation pathway is further underpinned by the ongoing focus on continuous improvement and innovation, which are expected to assist the company in achievement of its long-term goals and development of its business opportunities.

BLG's most recent efforts have been concentrated on:

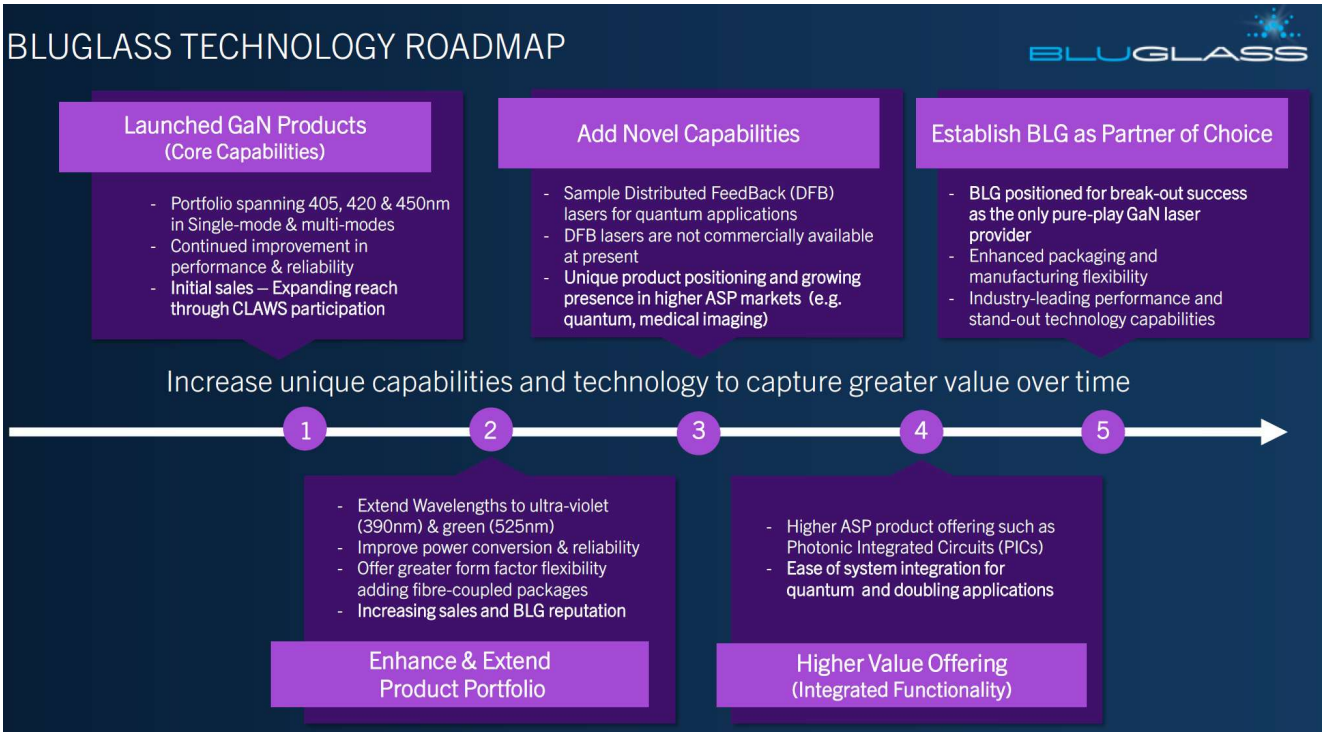
- In-sourcing contract manufacturers and optimising its Silicon Valley fab
- Developing the product portfolio and adding new capabilities
- Winning medium and large development contracts with key partners, including the US DoD.

The chart below highlights the company's technology roadmap, currently focussing on extending and improving the product portfolio, adding novel capabilities such as DFB lasers and semiconductor optical amplifiers, and confirming BLG as a partner of choice in the GaN laser market.

BluGlass Limited (BLG)

Building cutting edge GaN laser diodes using proprietary novel technology

Fig. 10 – BLG strategic outlook



Source: BLG

Competition

Competitive landscape – GaN laser diodes

BLG is one of a very limited number of end-to-end GaN laser diode manufacturers globally, and the only supplier to use RPCVD technology to manufacture products commercially.

The key market participants BLG competes with are summarised in the table below (Fig. 12) and compared based on several key metrics.

Many of the competitors are larger organisations that offer GaN lasers as part of a broader product suite in microelectronics, rather than as dedicated GaN laser producers.

Fig. 11 – Competitive landscape

COMPETITIVE LANDSCAPE

		NICHIA	OSRAM	SHARP	KYOCERA SLDLASER	nuvoTon 新唐科技
Characteristics	Pure-play GaN laser challenger	Global conglomerate and market leader	Global lighting company	Global consumer electronics company	Japanese owned white light laser company	Taiwanese laser company
Pure-play GaN laser company	●				●	
Full-suite GaN manufacturing capability	●	●	●	●	●	●
Mature product portfolio		●	●	○		○
Market leadership	GaN DFB lasers	High-power MM lasers	LED/GaN lasers		High-power white light	
Manufacturing agility and flexibility	●					
Custom development and fast prototyping	●				○	
Flexible form factors	●				○	
Custom integration	●					
RPCVD & AAG Tunnel Junction Technology	●					
Novel GaN architectures; DFB, Gain Chips	●	●				
US DoD/ AUKUS Defence Contract Eligibility	●					

Source: BLG

Apart from GaN laser suppliers, the three major global equipment suppliers for MOCVD epitaxy may seek to use RPCVD, which is patented, or develop a similar technology. However, they appear more interested in working with BLG than developing their own technology.

However, competition could potentially develop from manufacturers of Molecular Beam Epitaxy (MBE) equipment, such as Riber (ALRIB-FR) and Veeco (VECO-US). The MBE technology operates at much lower temperatures than even RPCVD, using a beam of Nitrogen molecules.

However, MBE does not have the throughput or scalability of MOCVD technology and cannot be retrofitted into MOCVD equipment in the way that RPCVD technology can, enabling different layers in the same epitaxial structure to be grown using either MOCVD or RPCVD without removing the wafer from the reactor chamber.

Competitive advantages

There are numerous challenges to the global supply of GaN lasers. Critical to this constrained supply is the lack of providers focused on delivering these products to market, with only a handful of GaN laser suppliers active globally.

Other key challenges to GaN laser supply include:

- Non-specialist producers – Most competitors are not dedicated GaN laser suppliers, but are captive in larger organisations with large, differentiated product portfolios often focused on the commoditised LED and micro-LED markets.
- Low mix/high volume business models – Limited form factor flexibility, customisation and manufacturing agility in current business models Is creating significant unmet needs in quantum/scientific, defence, and biotech verticals.
- High barriers to market entry

As the first pure-play GaN laser supplier, BLG is well positioned to address these supply issues and leverage the fast-growing GaN laser market. It has taken significant steps to increase its supply capabilities at scale, while retaining its manufacturing agility and innovative edge, while working to establish the high-quality standards of its products through vertically integrating its manufacturing process.

In addition, it is strongly focussed on providing customised solutions to customers to assist them with bringing next generation laser applications to market. This strategy has been validated by the market with key customers and partners choosing to work with BLG to develop next-generation applications.

Key Risks

As with any investment, there are certain risks associated with BLG's operations along with the surrounding economic and regulatory environments common to the laser diode industry.

Product development and commercialisation

BLG operates in a cutting-edge industry, where R&D and innovation is critical. While the company has a portfolio of laser products, the majority of orders to date are in the qualification phase. BLG will need to successfully navigate this phase of development to reach commercial production. Any failure to meet performance expectations could delay or imperil commercialisation.

Competing technology

BLG competes with various other providers of GaN laser systems which overlap with its offering to different degrees. Competitors may succeed in developing alternative products that are more innovative, easier to use, or more cost-effective than those of BLG. This may cause pricing pressure for BLG's offering and may impact its ability to attract new or retain existing customers.

In addition, certain established businesses that currently operate in unrelated industries could also enter the market. Any number of these companies may have substantially greater resources than BLG to devote to new product development. The company believes it will compete based primarily on the quality, performance and flexibility of its products. The ability of BLG to respond and adjust to any changes in the industry will affect its success and ability to grow its position.

Maintenance of key partnerships

BLG has a number of key development partnerships with laser industry leaders, universities and government. These partnerships contribute meaningful revenues in the near term and represent the company's pathway to commercialisation of its products.

Accordingly, BLG needs to keep investing in these key relationships to ensure it maintains support from partners to help sustain revenue while it works to commercialise its portfolio.

Intellectual property

BLG currently has a significant number of patents and pending applications for intellectual property. It is constantly alert to unauthorised use of its IP and ready to defend its rights according to law. Should it be unsuccessful in protecting its IP, this could materially weaken its position in the market. Additionally, any litigation or mediation for an infringement could be costly, no matter the outcome, and divert management's attention from normal commercial operations.

Third party suppliers

BLG has brought most production steps in the manufacture of epitaxial wafers through to final laser diode devices in-house, to create a vertically integrated process. It is therefore less reliant on 3rd party suppliers and/or service providers than in the past. However, it is still dependent on key suppliers of its manufacturing equipment, in particular at its Silicon Valley fab.

R&D tax rebates

BLG derives material amounts of funding from research and development tax rebates. Any future changes in the laws or availability of these rebates could negatively impact the company's cash flows.

Foreign exchange risk

As the company operates in both Australia and the US, there is some risk of potential foreign exchange movements. However, given both revenue and expenses in each jurisdiction, there is a natural hedge to some extent. BLG reports in Australian dollars, so there will be some translation risk, but this is not expected to be material relative to other drivers of the business.

Key personnel and management

BLG's success is closely linked to the company's ability to recruit and retain high-quality personnel. The company acknowledges the importance of its key personnel to the continued success of its business and endeavours to create a work environment and offer conditions that encourage employees to pursue long-term careers with the company.

Funding

BLG is still generating modest levels of revenue and has negative operating cash flows at this stage of its development and product commercialisation. The company will likely need to raise additional capital to fund operations until sufficient scale is reached for cash flow break-even. While it has sufficient epitaxial capacity to meet near term revenue targets, additional capital is expected to be needed to fund further capex to enable the business to be upscaled for long-term growth.

Financial Analysis

Business Economics

FY24 result

BLG continued to produce epitaxial wafers and laser diodes in FY24, while continuing to develop its next generation GaN laser diodes and deliver key technical milestones under the contract with North Carolina State University in its capacity as lead of the Microelectronics Commons CLAWS Hub.

The company delivered a record $10.0m in revenue in FY24, up 5.4% on pcp. This growth reflects the early benefits of BLG's commercialisation strategy, which focussed on building partnerships with industry and defence primes on revenue generating development projects. Accordingly, customer revenue was up >300% on pcp to $4.6m. This was driven by the NCSU CLAWS contract and stronger initial laser product revenues. The uplift in customer revenue enabled a stronger reported revenue result despite R&D tax rebates received in the year being down 36% to $5.4m.

However, the result included a one-off payment of $1.9m received by BLG, which is related to the transfer of some IP to a European wafer developer customer. The underlying customer revenue growth was therefore lower than the headline number, but nevertheless still a strong improvement on FY23. Importantly, it demonstrates the company's reduced reliance on the R&D tax rebate.

Reported EBITDA was -$6.7m, a 12% improvement on the -$7.6m achieved in FY23. This was driven by the stronger revenue outcome of +5.4% noted above and good control of total operating costs, which were down 2.3% to $16.7m.

Reported NPAT was -$10.1m, a 13.7% improvement on -$11.8m in FY23. Operating cash flow performance was significantly improved at -$7.0m, up from -$11.9m in the pcp.

1H FY25 result

BLG has carried this strong momentum into FY25, delivering record half-year revenues of A$4.1m, advancing its technology capabilities, delivering world-class innovation, attracting industry-leading partners, and filing important new intellectual property.

The company recently filed three US provisional patents for next-generation high-power, tunable GaN lasers, strengthening its strategic position in the US$173bn quantum technologies market. BLG's innovations enable customers to tackle complex challenges, including atmospheric LiDAR detection of clear air turbulence, underwater communications, and GPS spoofing and jamming through localised quantum solutions.

Operational highlights

Some key operational highlights during FY24 and 1H FY25 include:

- Securing a coveted position within the US Department of Defense's Microelectronics Commons, and winning A$5.5m in development contracts as part of the CLAWS Hub.
- Completing the GaNWorks acquisition and integration into the Silicon Valley fab.
- Partnering with commercial and academic leaders to build laser industry credibility, including securing a A$1.2m contract for the first phase of a multi-year JDA with a US customer.
- Filing three US patent applications for high-power tunable GaN lasers for defence, aviation and quantum markets.
- Showcasing new product capabilities and performance data at SPIE Photonics West.
- Continuing to grow the revenue pipeline and advancing customer negotiations.

BLG's partnerships play an important role in helping the company advance its technical roadmaps, improve the quality, performance and reliability of the core laser portfolio (405nm-450nm), as well as progress its next generation and novel products.

During FY24, BLG experienced some disruptive equipment failures and consequent downtime, impacting the manufacture and shipping of products to customers. In response it has developed new processes, equipment fixes and purchasing strategies. The company has continued to enhance its fab up-time, ensuring products are flowing off the line and further improving repeatability, product availability, speed of delivery and manufacturing yields.

BLG continues to grow its business, advance its technology capabilities, deliver world-class innovation, attract industry leading partners, and establish a reputation as an agile partner of choice in the market.

Outlook

Looking forward, BLG is expected to continue its strategy of pursuing medium and large product development projects with follow-on production potential to scale its laser and project revenues. The company will seek to leverage collaborations with industry and academic partners to develop innovative new GaN laser products, solve customer challenges, and support increased adoption of GaN lasers in applications across high-growth industries.

BLG will concurrently look to further optimise its Silicon Valley manufacturing fab to improve laser performance and yield, support new and repeat customer orders, and qualify its visible lasers within customer applications. As the company executes its technical and commercial roadmaps, each milestone enhances its ability to grow market influence and drives the business towards sustainable profit and positive operating cash flow.

As a pure-play provider, BLG is strongly positioned to capitalise on the rapidly-growing GaN laser systems market. This is underpinned by BLG's world-leading performance of its single-mode and DFB lasers for the rapidly emerging ultra-precision markets, such as quantum, defence, and aviation, combined with greater manufacturing and packaging flexibility, and proprietary architectures that improve laser performance and facilitate next-generation applications.

Given the significant advantages of GaN lasers over traditional infrared lasers, they continue to grow overall market share. We expect the company will see a significant increase in laser diode revenues over coming periods as it scales up manufacturing activity, subject to ongoing successful product qualification.

Capital Management

During 2H FY24, BLG raised a further $10.17m before costs to fund ongoing operations, invest in additional fab equipment, and for working capital purposes. A well-supported placement to sophisticated investors raised $4.3m at $0.037 per share, and a SPP on the same terms contributed $5.87m. This led to the issue of 116.2m and 158.6m new shares respectively. The issue price represented a 19.6% discount to the last closing price and a 24.3% discount to the 15-day VWAP.

At Jun 2024, BLG had total debt of $4.7m, including leases. Total cash holdings were $5.6m, so the company's had a positive net cash position of $0.9m. By Dec 2024, total debt reduced to $3.2m, including leases. Cash holdings were $3.8m, resulting in a positive net cash position of $0.6m.

During 1H FY25, BLG had negative operating cash flow of $0.05m. This included the receipt of $5.4m in R&D tax rebates. Capital expenditures were $0.5m and debt was reduced by ~$1.2m net.

At the date of this report, BLG's issued capital and other instruments comprise the following:

- 1827.1m ordinary shares
- 48.4m unlisted options and performance rights of various expiry dates

Forecasts and Valuation

We have modelled BLG's business based on its reported results to date and our understanding of the company's operations and strategy. Our forecasts are summarised in the appendix to this report. We have also completed a DCF valuation for BLG, based on our current forecasts. The chart below presents the valuation and arrives at an equity value of $0.063 per BLG share.

It is important to note that our forecasts and valuation are based on a number of assumptions, which could vary significantly in nature, timing and magnitude from the estimates we have adopted. Some of the key assumptions are discussed below. Given the rapid and significant transformation of the industry in which the company operates, there is naturally a high level of uncertainty surrounding any forecast assumptions, and accordingly, our forecasts and valuation should be treated with due caution.

The following key assumptions underpin our forecasts and valuation, together with the assumed valuation inputs shown:

- Total revenue is forecast to grow to ~A$148m by FY29, representing a CAGR of ~71% pa over the 5 years, driven mainly by a combination of laser market growth and increased BLG share.
- We assume the addressable laser market expands to US$15.2bn by FY29 and BLG's serviceable addressable market (SAM) grows to US$3.7bn, representing CAGRs of 23.7% and 24.7% respectively. This is driven by ongoing strong demand for lasers in key target market segments, including quantum/scientific, biotech and defence.

BluGlass Limited (BLG)

Building cutting edge GaN laser diodes using proprietary novel technology

- BLG market share is assumed to grow from a very low base to ~2.5% of the SAM by FY29, resulting in laser diode product and project revenue of ~US$95m at a CAGR of ~130%.
- There is potential for BLG's market share to grow more rapidly given its strong positioning and participation in various development projects with significant follow-on production opportunities. However, at this early stage of the company's commercialisation, we aim to be more conservative, pending further confirmation of its ability to drive uptake of its products.
- Foundry services revenue and R&D rebates are forecast to decline at a CAGR of ~22% and ~15% respectively over this period.
- We assume gross margins of ~43%, broadly in line with the typical laser diode and related systems industry range of 35%-45%.
- SG&A costs are assumed to have a large fixed component, reflecting steady R&D costs and existing production facilities with sufficient spare capacity to accommodate the forecast ramp-up in production.
- This allows BLG to rapidly close losses and then grow earnings as the revenue line scales up. We forecast EBITDA profit is first reached for FY27, growing to ~A$16.8m in FY29. This represents an EBITDA margin of 11.3%. We assume a long-term EBITDA margin of ~13.5%.
- As the company has sufficient epitaxial and downstream manufacturing capacity to achieve the above revenue targets, capex needs are expected to be relatively limited. We forecast average capex of ~$4.1m pa over the next 5 years. Greater capex may be required if BLG is able to up-scale demand for its products materially above current assumptions.
- Based on BLG's current balance sheet position and the above assumptions, we factor in a $15m capital raising in FY25 using a 15% discount to the current share price. This results in the issue of ~929m new shares.

Fig. 12 – DCF Valuation

Year	2025e	2026e	2027e	2028e	2029e	2030e
EBIT	-10.0	-8.7	-2.2	4.3	12.9	22.1
Depreciation & Amort	3.2	3.4	3.6	3.8	3.9	4.1
Tax	0.0	0.0	0.0	-1.0	-3.2	-5.4
Adj for Net Int tax shield	0.0	0.0	0.0	-0.1	0.0	-0.1
Inv in Net working capital	-0.3	-2.7	1.2	4.2	-2.6	-2.5
Operating CF before financing	**-7.1**	**-8.0**	**2.6**	**11.2**	**11.0**	**18.2**
Capex	-3.7	-3.9	-4.1	-4.2	-4.4	-4.6
Inv in Intangibles	0.0	0.0	0.0	0.0	0.0	0.0
Inv in net other assets	0.7	2.9	4.4	5.9	5.1	4.7
Free CF before financing	**-10.1**	**-9.0**	**3.0**	**12.8**	**11.7**	**18.3**
Terminal Value [FCF*(1+g)/(WACC-g)]	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**260.1**

Risk free rate (Rf)	4.35%	NPV of explicit free cash flow	$10.1
Market risk premium (Rm-Rf)	6.5%	NPV of terminal value	$132.8
Beta (β)	1.70	Non-operating assets	$34.8
Cost of equity capital (Ke)	15.4%	**Total Company Value ($m)**	**$177.8**
Cost of debt (Kd)	7.0%	Less Net Debt	-$0.3
Corporate tax rate (Tc)	25.0%	Less Minority Interests	$0.0
Target gearing [d/(d+e)]	35.0%	**Value of Equity ($m)**	**$177.5**
WACC	11.8%		
		Shares on Issue (EFPO) (m)	2800.3
Terminal growth rate (g)	4.5%	Adj for notional conversion ($m)	0.0
		Value per share ($)	**$0.063**

Source: CCR and company data

Appendix 1: Board of Directors and Key Management

Mr James Walker

Non-executive Chair | B Comm, FCA, GAICD

James is an experienced leader in commercialising technology in new markets, with roles as a Non-Executive Chair, Director and Chief Executive of ASX listed companies. He also has deep experience as a Chief Financial Officer for a UK, AIM-listed technology company as well as executive roles in other growth companies.

He is currently a Non-Executive Chair of Native Mineral Resources (ASX: NMR) and Executive Director of Scalare Partners (ASX:SCP).

James has over 25 years' experience as a Chartered Accountant, company secretary and senior executive of various high growth private companies. James has successfully completed multiple ASX IPOs, corporate acquisition transactions, secondary round raises on both the ASX and UK AIM markets and private capital raises.

James thrives on scaling businesses, commercialising technology and building new global markets, with extensive experience across a wide range of international high growth businesses, including deal-tech, data-driven customer experience, sensor systems, mining technology services, automotive, aviation, biotechnology, hotel telemarketing, drone detection and security sectors.

James Walker has been the Chair of BluGlass for four years and director of the Company for six years. Special Responsibilities include Chair of the Audit Committee and member of the Risk Committee.

Mr Jim Haden

CEO | MsEE, BEE

Jim Haden is an expert laser diode executive with more than three decades' industry expertise. He has a demonstrated track record transforming advanced technology businesses from R&D and early-stage product development to profitable, high growth commercial entities. He has held senior executive and advisory roles at several of BluGlass' prospective customers and competitors, including Senior Technical and Operations Adviser at Kyocera SLD.

Jim's deep technical, commercialisation and leadership skills along with his extensive customer and supply chain network experience will be invaluable in helping BluGlass transition to profitability and deliver a pipeline of next-generation laser products to market.

In his most recent role at Soora Laser Diode (now Kyocera-SLD), Jim was responsible for guiding operations and development teams to stabilise, improve, and ramp high power blue GaN lasers. This product development delivered a leading automotive customer (BMW) and rapid revenue growth, assisting in their acquisition by Kyocera in January 2021.

Prior to this, Jim was the Chief Operating Officer at nLIGHT, helping transform the business from early-stage revenue generation to its current market leadership position. During his time with nLIGHT, he more than doubled revenue, delivered a four-fold increase in R&D return on investment, streamlined production management, and improved manufacturing yields and cost margins; ultimately assisting the business to attract expansion capital of US$25M.

Other senior roles include Director of Operations and Product Line Management at Coherent Incorporation, Director of Operations at JDS Uniphase (now Lumentum), and Director of Operations at Spectra Diode Lasers (acquired by JDS Uniphase for US$41B).

Jim oversees all aspects of the business and has been leading the company for three years.

BluGlass Limited (BLG)

Building cutting edge GaN laser diodes using proprietary novel technology

Mr Jean-Michel Pelaprat

Non-Executive Director | BSPhy

Jean-Michel brings deep photonics industry expertise, with over 30 years' experience establishing, commercialising and scaling laser and semiconductor businesses. As co-founder and former Director of NUBURU – a US-based company recognised as a pioneer in blue GaN lasers for industrial, 3D printing and display – Jean-Michel helped steer the business from start-up to a recognised industry leader. Jean-Michel retired as Director of NUBURU in March 2022 and remains as head of the Advisory Board, as the company merges with Tailwind Acquisition Corp to take the business public.

Jean-Michel held numerous leadership positions in high-growth photonics businesses, including President and CEO of Vytran, a fiber optics capital equipment company supplying optical communications, fiber lasers, medical devices, sensing & aerospace applications. He led the business to growth and profitability during the 2009-2010 recession and served on the Board of Vytran's sister company, NKT Photonics.

Other senior roles include Chair and CEO of Novalux, Inc. a startup developing red-green-blue (RGB) semiconductor laser sources for the projection display industry, and Director of Nuvonux, a pioneer in infrared high-powered semiconductor lasers for industrial and defence.

Prior to Novalux, Jean-Michel spent 13 years at Coherent, Inc. There, his positions included Vice President and General Manager for both Diode-Pumped Solid-State (DPSS) and Laser business and Semiconductor Laser groups—with a focus on aggressive organic growth combined with several M&As. He pioneered the DPSS and the Optically Pumped Semiconductor Laser (OPSL) mass-market adoption. He was also the Vice President of Strategic Marketing for the company.

Jean-Michel holds a degree in Physics from the University of Montpellier, France (USTL) and has undertaken Sales Management and Finance education at the Wharton School of Business and studied Strategic Marketing for the High-Tech Industry at Stanford University. He previously served as the Chair of the Corporate Associates committee and as Director of the Optical Society of America.

Jean-Michel has been a director of BluGlass for three years.

Mr Stephe Wilks

Non-Executive Director | BSC, LLM

Stephe Wilks is a professional company Director, with a long record leading successful global technology companies in high growth and disruptive industries. He has headed several Australian and international technology companies, including as Regional Director (Asia and Japan) Regulatory affairs for BT Asia Pacific, Managing Director of XYZed Pty Ltd (an Optus company), Chief Operating Officer of both Nextgen Networks and Personal Broadband Australia, and as Consulting Director of NM Rothschild and Sons.

Stephe was the Chair of Australia's largest private IT services company, Interactive, where he remains a non-executive director. His extensive finance, strategic management, M&A and public affairs expertise add significant value to the BluGlass Board.

Stephe Wilks has been a director of BluGlass for six years. Special Responsibilities include member of the Audit and Risk Committees.

Current Directorships include Vonex Limited (ASX:VN8) October 2020 – present, and former Directorships include Over the Wire (ASX:OTW) Jul 2021 – May 2022 and 1st Group Ltd (ASX:1ST) Jun 2021 – Nov 2022.

Mr Vivek Rao

Non-Executive Director | BS-Electronics, MS-EE

Vivek Rao is the President & Chief Operations Officer of SPT Microtechnologies (a Division of SPP Technologies).

Vivek is a seasoned semiconductor professional with more than 30 years' experience in the semiconductor capital equipment industry in various managerial and technical leadership roles and brings to the Board a strong understanding of BluGlass' target markets and customers.

Vivek has been a director of BluGlass for seven years. Special Responsibilities include Audit and Risk Committee Chair.

Former Directorships include Revasum Limited (ASX: RVS) January 2018 – September 2021.

RESEARCH REPORT

CORPORATE CONNECT

BluGlass Limited (BLG)

Building cutting edge GaN laser diodes using proprietary novel technology

BluGlass (BLG: A$0.019)

Valuation data

Year ending Jun	2023	2024	2025f	2026f	2027f
EPS (c)	**(0.8)**	**(0.6)**	**(0.4)**	**(0.3)**	**(0.1)**
P/E ratio (x)	**(2.5)**	**(3.4)**	**(5.2)**	**(5.9)**	**(20.4)**
P/E relative					
EPS growth (%)		**-28%**	**-33.7%**	**-12.5%**	**-71.1%**
EV / EBIT (x)	**0.0**	**(4.1)**	**(3.9)**	**(4.5)**	**(18.0)**
EV / EBITDA (x)	0.0	(5.9)	(5.8)	(7.4)	27.7
CFPS (c)	(0.8)	(0.4)	(0.3)	(0.1)	0.2
Price / CF (x)	0.0	(4.9)	(7.6)	(17.5)	9.9
DPS (c)	0.0	0.0	0.0	0.0	0.0
Yield (%)	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Franking (%)	0%	0%	0%	0%	0%
NTA per share	$0.01	$0.01	$0.01	$0.01	$0.01
Pr / NTA	1.3	1.5	1.8	1.8	1.6

Profit and loss ($m)

Year ending Jun	2023	2024	2025f	2026f	2027f
Sales revenue	9.5	10.0	11.1	26.3	56.1
growth over pcp	*0.0%*	*5.4%*	*10.8%*	*137%*	*113%*
EBITDA	(7.6)	(6.7)	(6.8)	(5.3)	1.4
Dep'n and amort'n	(3.9)	(3.0)	(3.2)	(3.4)	(3.6)
EBITAg	**(11.5)**	**(9.7)**	**(10.0)**	**(8.7)**	**(2.2)**
Goodw ill amortisation	0.0	0.0	0.0	0.0	0.0
EBIT	**(11.5)**	**(9.7)**	**(10.0)**	**(8.7)**	**(2.2)**
growth over pcp		*-16%*	*2.7%*	*-12.7%*	*-74.9%*
Net interest expense	(0.2)	(0.3)	(0.1)	(0.2)	(0.4)
Pre-tax profit	(11.8)	(10.0)	(10.1)	(8.9)	(2.6)
Tax	0.0	(0.1)	0.0	0.0	0.0
Effective tax rate	*0.0%*	*-1.3%*	*0.0%*	*0.0%*	*0.0%*
Preference dividends	0.0	0.0	0.0	0.0	0.0
Minorities	0.0	0.0	0.0	0.0	0.0
Share of assoc	0.0	0.0	0.0	0.0	0.0
CCR adjustments	0.0	0.0	0.0	0.0	0.0
CCR adj profit	**(11.8)**	**(10.1)**	**(10.1)**	**(8.9)**	**(2.6)**
Reported profit (pre abn)	(11.8)	(10.1)	(10.1)	(8.9)	(2.6)
Abn / extra's (after tax)	0.0	0.0	0.0	0.0	0.0
Reported net profit	(11.8)	(10.1)	(10.1)	(8.9)	(2.6)

Profitability ratios

Year ending Jun	2023	2024	2025f	2026f	2027f
EBITDA / sales (%)	-79.8%	-66.7%	-61.0%	-20.2%	2.5%
EBITAg / sales (%)	**-121%**	**-96.9%**	**-89.9%**	**-33.1%**	**-3.9%**
EBIT / sales (%)	**-121%**	**-96.9%**	**-89.9%**	**-33.1%**	**-3.9%**
Return on assets (%)	-53.0%	-42.3%	-34.5%	-30.0%	-6.3%
Return on equity (%)	-85%	-68.1%	-51.3%	-81.5%	-31%
Dividend cover (x)	0.0	0.0	0.0	0.0	0.0

Liquidity and leverage ratios

Year ending Jun	2023	2024	2025f	2026f	2027f
Net debt / (cash) ($m)	0.2	(0.9)	0.3	4.5	1.8
Debt / equity (%)	32.3%	31.4%	24.9%	83.5%	77.9%
Net debt / equity (%)	**1.7%**	**-6.0%**	**1.5%**	**40.9%**	**22.2%**
Interest cover (x)					

Segments ($m)

	2023	2024	2025f	2026f	2027f
Australia	1.1	2.5	3.2	12.0	28.2
USA	0.0	2.1	2.7	10.0	23.6
Corporate	8.3	5.4	5.2	4.3	4.3
Unalloc	0.1	0.0	0.0	0.0	0.0
Sales revenue	**9.5**	**10.0**	**11.1**	**26.3**	**56.1**
Australia	(10.2)	(5.5)	(3.7)	(2.9)	0.8
USA	2.6	(1.2)	(3.1)	(2.4)	0.6
Corporate	0.0	0.0	0.0	0.0	0.0
Unalloc	0.0	0.0	0.0	0.0	0.0
EBITDA	**(7.6)**	**(6.7)**	**(6.8)**	**(5.3)**	**1.4**

Cashflow ($m)

Year ending Jun	2023	2024	2025f	2026f	2027f
EBIT	(11.5)	(9.7)	(10.0)	(8.7)	(2.2)
Net interest paid	(0.2)	(0.3)	(0.1)	(0.2)	(0.4)
Dep'n and amort'n	3.9	3.0	3.2	3.4	3.6
Tax paid	0.0	0.2	0.0	0.0	0.0
Gross cash from op'n	**(7.8)**	**(6.8)**	**(6.9)**	**(5.5)**	**1.0**
(Inc) / dec in w k'g cap	(7.0)	(0.7)	(0.3)	(2.7)	1.2
Other	3.0	0.5	0.0	0.0	0.0
Operating cashflow	**(11.9)**	**(7.0)**	**(7.3)**	**(8.2)**	**2.2**
Investing cashflows					
Capex / Asset sales	(0.6)	(1.5)	(3.7)	(3.9)	(4.1)
Intangibles	0.0	0.0	0.0	0.0	0.0
Investments	0.0	0.0	(5.0)	5.0	0.0
Net other assets	(0.1)	0.0	(0.2)	2.9	4.4
Financing cashflows					
Equity raised	12.0	9.4	15.0	0.0	0.0
Dividends paid	0.0	0.0	0.0	0.0	0.0
Chg in loans	**(0.5)**	**0.4**	**0.3**	**4.2**	**(2.6)**
Chg in minorities	0.0	0.0	0.0	0.0	0.0
Other non-op flow s	0.0	0.0	(0.0)	0.0	(0.0)
Net chg in cash	**(1.1)**	**1.3**	**(0.9)**	**0.0**	**0.0**

Balance sheet ($m)

Year ending Jun	2023	2024	2025f	2026f	2027f
Cash	4.3	5.6	4.6	4.6	4.6
Receivables	7.6	8.2	8.7	12.3	13.1
Inventories	0.6	0.9	1.0	2.3	5.0
Other	0.0	0.0	0.0	0.0	0.0
Current assets	**12.4**	**14.7**	**14.3**	**19.2**	**22.7**
Net PPE	8.7	8.0	8.5	9.0	9.4
Investments	0.0	0.0	5.0	0.0	0.0
Goodw ill	0.0	0.0	0.0	0.0	0.0
Other intangibles	0.0	0.0	0.0	0.0	0.0
Other	0.6	0.5	0.7	0.3	0.1
Non-current assets	**9.2**	**8.5**	**14.2**	**9.2**	**9.5**
Total assets	**21.7**	**23.1**	**28.4**	**28.5**	**32.2**
Debt	4.5	4.7	4.9	9.1	6.5
Payables	1.2	1.4	1.6	3.9	8.5
Other	2.1	2.2	2.2	4.6	8.9
Total liabilities	**7.8**	**8.3**	**8.7**	**17.6**	**23.9**
Equity / reserves	101.8	112.9	127.9	127.9	127.9
Retained profits	(87.9)	(98.1)	(108.2)	(117.1)	(119.6)
Total s/h funds	**13.9**	**14.9**	**19.8**	**10.9**	**8.3**
Minorities	0.0	0.0	0.0	0.0	0.0
Total funds emp.	**21.7**	**23.1**	**28.4**	**28.5**	**32.2**

Model summary as at 18/3/25

RESEARCH REPORT

BluGlass Limited (BLG)

Building cutting edge GaN laser diodes using proprietary novel technology

Corporate Connect Research Pty Ltd Independent Research Report Disclaimer

General disclaimer and copyright
This report ("report" or "Research") has been commissioned by the Company the subject of this report ("**Company**") and prepared and issued by **Joh Snyman** of Corporate Connect Research Pty Ltd ("Corporate Connect Research") (ABN 95640 464 320 – Corporate Authorised Representative (AR 001304496) of Australian Financial Services License (AFSL) (Number 518031) in consideration of a fee payable by the Company. Corporate Connect Research may be paid additional fees for the provision of additional services to the Company. Where Corporate Connect Research has been commissioned to prepare content and receives fees for its preparation, fees are paid upfront in cash and NO part of the fee, compensation or employee remuneration paid will either directly or indirectly impact the content provided.

Accuracy of content
All information used in the publication of this report has been compiled from publicly available sources that are believed to be reliable, however Corporate Connect Research does not guarantee the accuracy or completeness of this report and has not sought for this information to be independently verified. Opinions contained in this report represent those of the analyst of Corporate Connect Research (**Joh Snyman)** at the time of publication.
The analyst has received assistance from the Company in preparing this document. The Company has provided the analyst with access to senior management and information on the Company and industry.
From time to time, Corporate Connect Research's representatives or associates may hold interests, transact or hold directorships in, or perform paid services for, companies mentioned in this report. Corporate Connect Research and its associates, officers, directors and employees, may, from time to time, hold securities in the companies referred to in this report and may trade in those securities as principal and in a manner that may be contrary to recommendations mentioned in this report.
As part of due diligence, the analyst has independently and critically reviewed the assistance and information provided by the Company to form the opinions expressed in the report. However, due diligence site visits have not been undertaken at this time. Care has been taken by the analyst to maintain objectivity in preparing this report and making any recommendation. The analyst is responsible for ensuring that this report accurately reflects his or her view of the matters set out in it and that it was prepared in an independent manner.
Forward-looking information or statements in this report contain information that is based on assumptions, forecasts of future results and estimates of amounts not yet determinable, and therefore involve known and unknown risks, uncertainties and other factors, which may cause the actual results, performance or achievements of their subject matter to be materially different from current expectations. This report is prepared as at the date stated in it, and to the maximum extent permitted by law, Corporate Connect Research (on its own behalf and on behalf of the analyst) disclaims any responsibility to inform any recipient of this report of any matter that subsequently comes to its notice, which may affect any of the information contained in this report.

Exclusion of liability
To the fullest extent allowed by law, Corporate Connect Research (on its own behalf and on behalf of the analyst) shall not be liable to any person for any direct, indirect or consequential losses, loss of profits, damages, costs or expenses incurred or suffered by you or any other person arising out or in connection with the access to, use of or reliance on any information contained in this report.
No guarantees or warranties regarding accuracy, completeness or fitness for purpose are provided by Corporate Connect Research (on its own behalf and on behalf of the analyst), and under no circumstances will any of Corporate Connect Research's analysts, representatives, associates or agents be liable for any loss or damage, whether direct, incidental or consequential, caused by reliance on or use of the content.

General advice warning
This report and any other Research must not be construed as personal advice or recommendation nor as an inducement to trade the report's named company or any other security. Corporate Connect Research encourages investors to seek independent financial advice regarding the suitability of investments for their individual circumstances and recommends that investments be independently evaluated. Investments involve risks and the value of any investment or income may go down as well as up. Investors may not get back the full amount invested. Past performance is not indicative of future performance. Estimates of future performance are based on assumptions that may not be realised. If provided, and unless otherwise stated, the closing price provided is that of the primary exchange for the issuer's securities or investments. The information contained within the Research is published solely for information purposes and is not a solicitation or offer to buy or sell any financial product or participate in any trading or investment strategy.
Analysis contained within the Research is based upon publicly available information and may include numerous assumptions. Investors should be aware that different assumptions can and do result in materially different results. The Research is distributed only as may be permitted by law. It is not intended for distribution or use by any person or entity located in a jurisdiction where distribution, publication, availability, or use would be prohibited. Corporate Connect Research makes no claim that the Research content may be lawfully viewed or accessed, whether inside or outside of Australia. Access to the Research content may not be legal for certain persons and in certain jurisdictions. If you access this service or content from outside of Australia, you are responsible for compliance with the laws of your jurisdiction and/or the jurisdiction of the third party receiving such content. The Research is provided to our clients through our website and our distribution partners.
Some Research products may also be made available to our clients via third party vendors or distributed through alternative electronic means as a convenience. Such alternative distribution methods are at Corporate Connect Research's discretion.

Access and use
Any access to, or use of, the Research is subject to the Terms and Conditions of Corporate Connect Research. By accessing or using the Research you hereby consent to Corporate Connect Research collecting and using your personal data (including cookies) in accordance with our Privacy Policy (https://corporateconnect.com.au/privacy/), including for the purpose of a) setting your preferences and b) collecting readership data so Corporate Connect Research may deliver an improved and personalised service to you. If you do not agree to our Terms and Conditions and/or if you do not consent to Corporate Connect Research's use of your personal data, please do not access this service.

BluGlass Limited (BLG)

Building cutting edge GaN laser diodes using proprietary novel technology

Australia
Corporate Connect Research Pty Ltd is a Corporate Authorised Representative (001304496) of Point Capital Group Pty Ltd who holds an Australian Finance Services Licence (Number: 518031) which allows Corporate Connect Research to offer financial service advice to wholesale and retail clients. Any advice given by Corporate Connect Research is general advice only and does not consider your personal circumstances, financial situation, needs or objectives. You should, before ac ting on this advice or making any investment decision or a decision about whether to acquire or dispose of a financial product mentioned in any Research, consider the appropriateness of the advice, having regard to your objectives, financial situation, and needs. If our advice relates to the acquisition, or possible acquisition, of a particular financial product you should read any relevant Product Disclosure Statement or like instrument, and also seek independent financial, legal and taxation advice.

New Zealand
The Research in this document is intended for New Zealand resident professional financial advisers or brokers This is not a solicitation or inducement to buy, sell, subscribe, or underwrite any securities mentioned or in the topic of this document. For the purpose of the FAA, the content of this report is of a general nature, is intended as a source of general information only and is not intended to constitute a recommendation or opinion in relation to acquiring or disposing (including refraining from acquiring or disposing) of securities. The distribution of this document is not a “personalised service” and, to the extent that it contains any financial advice, is intended only as a “class service” provided by Corporate Connect Research within the meaning of the FAA (i.e., without taking into account the particular financial situation or goals of any person). As such, it should not be relied upon in making an investment decision.

United Kingdom
This document is prepared and provided by Corporate Connect Research for information purposes only and should not be construed as an offer or solicitation for investment in any securities mentioned or in the topic of this document. A marketing communication under FCA Rules, this document has not been prepared in accordance with the legal requirements designed to promote the independence of investment research and is not subject to any prohibition on dealing ahead of the dissemination of investment research.
This Communication is being distributed in the United Kingdom and is directed only at (i) persons having professional experience in matters relating to investments, i.e. investment professionals within the meaning of Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the "FPO") (ii) high net-worth companies, unincorporated associations or other bodies within the meaning of Article 49 of the FPO and (iii) persons to whom it is otherwise lawful to distribute it. The investment or investment activity to which this document relates is available only to such persons. It is not intended that this document be distributed or passed on, directly or indirectly, to any other class of persons and in any event and under no circumstances should persons of any other description rely on, or act upon, the contents of this document.
This Communication is being supplied to you solely for your information and may not be reproduced by, further distributed to or published in whole or in part by, any other person.

United States
Corporate Connect Research relies upon the "publishers' exclusion" from the definition of investment adviser under Section202(a)(11) of the Investment Advisers Act of 1940 and corresponding state securities laws. This report is a bona fide publication of general and regular circulation offering impersonal investment-related advice, not tailored to a specific investment portfolio or the needs of current and/or prospective subscribers. As such, Corporate Connect Research does not offer or provide personal advice and the research provided is for informational purposes only. No mention of a particular security in this report constitutes a commendation to buy, sell or hold that or any security, or that any particular security, portfolio of securities, transaction or investment strategy is suitable for any specific person.

Analyst Verification
I verify that I, **Joh Snyman** has prepared this research report accurately and that any financial forecasts and recommendations that are expressed are solely my own personal opinions. In addition, I certify that no part of my compensation is or will be directly or indirectly tied to the specific recommendation or financial forecasts expressed in this report.

For more information contact Corporate Connect

https://www.corporateconnect.com.au/

Level 9
255 George Street
Sydney NSW 2000

Phone: +61 400 897 559
Email: enquiries@corporateconnect.com.au
https://www.corporateconnect.com.au/