

20 April 2023

## March Quarter Activities Update

### Highlights

- Launched first suite of gallium nitride (GaN) lasers
- Received multiple initial customer orders across its newly launched gallium nitride laser product suite
- Vertical integration of core downstream manufacturing processes continues to progress
- Appointed Jim Haden as Chief Executive Officer
- Secured \$10.7 million to speed and scale product delivery, expand laser offering
- Completed first phase of Ganvix development of green Vertical Cavity Surface Emitting Lasers (VCSELs)

Global semiconductor developer BluGlass Limited (**ASX: BLG**) provides the following update and Appendix 4C Quarterly Report for the three months ended 31 March 2023 (Q3 FY23).

### Launched first GaN lasers

BluGlass launched its first suite of commercial gallium nitride (GaN) laser products for customer purchase at Photonics West in San Francisco in January. The Company's lasers are now available across the violet 405nm, 420nm, and blue 450nm wavelengths in both single-mode and multi-mode devices and in a range of flexible form factors, including TO Cans and Chip-on-Submounts.

The Company's initial product offering has applicability in a multitude of laser applications, including additive manufacturing, quantum sensing and computing, material sensing and treatment, and flow cytometry.

BluGlass has additional laser products in advanced development, spanning violet, blue and green wavelengths in both single-mode and multi-mode devices. These include higher-power versions of launched products as well as initial products in the 470nm, 488nm, and 525nm wavelengths.

### Multiple customer orders, ongoing strong interest

During the quarter, BluGlass received multiple initial customer orders spanning its GaN laser product suite and in flexible form factors. Customers include established industry players, leading laser original equipment manufacturers (OEM) in the quantum and industrial segments, and a renowned international energy research institution.

Initial orders are low volume as these lasers will be used by customers for testing and qualification within their own applications. Once qualified, BluGlass expects these orders will convert to larger, recurring orders.

"The strong interest in our launched laser products reinforces our market positioning and strategy, and we continue to build momentum with potential customers across our target verticals. Our first customers are established industry players, reflecting the growing need for alternative GaN laser suppliers, the quality of our first products, and BluGlass' reputation as an upcoming innovator in the market. We have commenced shipments of these initial orders, and our lasers are already being tested within customer applications," said CEO Jim Haden.

## Jim Haden appointed CEO

BluGlass appointed President Jim Haden to the role of Chief Executive Officer, effective 1 March. The appointment follows the Company's significant technical and commercial progress under Mr Haden's leadership as President of BluGlass including launching first commercial products, securing customer orders, and the acquisition of a purpose-built laser diode production facility in Silicon Valley. A laser industry veteran, Mr Haden joined BluGlass in September 2021, having previously held senior leadership positions at Kyocera SLD, nLIGHT, Coherent, and JDS Uniphase (now Lumentum).

## Vertical integration on track

Vertical integration of BluGlass' core wafer manufacturing processes into its Fremont fab continues to make good progress. P-side processing has been successfully vertically integrated and internal facet coatings demonstrated with electrical and light-output performance in-line or better than contract manufacturer performance benchmarks. The refinement and qualification of facet coatings alongside the transfer of thinning, cleaving, and n-metalisation manufacturing processes to the Fremont fab are ongoing.

"With our own production facilities, we will soon have end-to-end operational capability of the GaN laser manufacturing process, from epitaxy to packaging and reliability testing. Our highly skilled manufacturing teams are leveraging these in-house capabilities to fast-track learning cycles, drive performance improvements and accelerate development of next-generation products. End-to-end manufacturing also enables us to effectively partner with customers to solve their biggest challenges, delivering enhanced performance, greater packaging flexibility and custom laser production," said CEO Jim Haden.

## Secured \$10.7 million to scale product delivery

BluGlass raised \$10.7 million to scale product delivery and expand its laser offering to address new applications and markets. A strongly supported placement to institutional and sophisticated investors contributed \$10.2 million at \$0.06 per share, and a non-renounceable entitlement offer on the same terms raised \$470k. The \$470k was received in April 2023.

## Successful completion of Phase 1 of Ganvix VCSEL development

During the quarter, BluGlass successfully completed Phase 1 of its paid collaboration agreement for the development of green GaN vertical cavity surface emitting lasers (VCSELs) with Ganvix, Inc.

The two companies have now commenced Phase 2 of the development. Building on the green multi-quantum well (MQW) epitaxial development of Phase 1, the two companies are now collaborating to combine Ganvix's nanoporous VCSEL architecture with BluGlass' proprietary RPCVD technology to demonstrate the commercial feasibility of green GaN VCSELs.

Green VCSELs are an emerging technology for use in advanced applications such as augmented and virtual reality headsets, pico projectors, and 5G wireless communications. The paid collaboration, if commercialised, will result in ongoing customer revenues for BluGlass.

## Financials

Quarterly revenue of \$322k comprised ongoing foundry services for a European wafer developer, development on the Ganvix green VCSEL project, and payment for initial laser product orders. During the quarter, BluGlass received \$10.2 million via a strongly supported institutional placement and raised an additional \$470k in an entitlement offer on the same terms. Cash at end of the quarter was \$8.1 million (before receipt of entitlement offer funds).

BluGlass' research and development expenses for the quarter were \$4.1 million, inclusive of salaries, materials, and fabrication costs. These costs reflect the Company vertically integrating core manufacturing processes at its

Silicon Valley fab whilst simultaneously progressing the GaN laser development and production with contract manufacturers.

Payments to related parties in Q3 FY23 were \$85k comprising Chair and Non-Executive Director fees.

## Outlook

BluGlass remains focused on growing its customer base and securing larger, recurring orders of its 405nm, 420nm, and 450nm GaN lasers. Over the coming quarters, BluGlass expects to complete wafer fab vertical integration, launch brighter and better performing lasers in core wavelengths (405nm – 450nm), establish distribution agreements with regional distributors, and demonstrate feasibility of longer wavelengths.

“Our first GaN lasers in underserved violet and blue wavelengths have been well received by the market. We’re continuing to invest in improving the performance and reliability of our launched and next-generation GaN lasers, as we position the Company as a partner-of-choice in the GaN laser segment. We have a very clear product roadmap and go-to-market strategy, and remain focused on providing customers with the easiest to use GaN laser light.

“As a dedicated visible laser supplier within the fast-growing GaN segment, BluGlass is well-placed to build market share in a sector with very few competitors, high barriers to entry, and supported by global mega-trends driving GaN laser adoption. This increased demand for visible GaN lasers is underpinned by many advantages over traditional infrared lasers, including higher absorption in key industrial metals, cleaner and faster materials processing, and tighter beam focus for precision manufacturing,” finished BluGlass CEO Jim Haden.

This announcement has been approved for release by the BluGlass Board.

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### For more information, please contact:

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## About BluGlass

**BluGlass Limited (ASX:BLG)** is a leading supplier of GaN laser diode products to the global photonics industry, focused on the industrial, defense, bio-medical, and scientific markets.

Listed on the ASX, BluGlass is one of just a handful of end-to-end GaN laser manufacturers globally. Its operations in Australia and the USA offer cutting-edge, custom laser diode development and manufacturing, from small-batch custom lasers to medium and high-volume off-the-shelf products.

Its proprietary low temperature, low hydrogen, remote plasma chemical vapour deposition (RPCVD) manufacturing technology and novel device architectures are internationally recognised, and provide the potential to create brighter, better performing lasers to power the devices of tomorrow.

BluGlass’ technical innovations are protected by 93 internationally granted patents and 17 trademarks in key semiconductor manufacturing jurisdictions.

## Appendix 4C

### Quarterly cash flow report for entities subject to Listing Rule 4.7B

**Name of entity**

BluGlass Limited

**ABN**

20 116 625 793

**Quarter ended ("current quarter")**

31 March 2023

<b>Consolidated statement of cash flows</b>	<b>Current quarter \$A'000</b>	<b>Year to date (6 months) \$A'000</b>
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	322	931
1.2 Payments for		
(a) research and development	(2,154)	(5,948)
(b) product manufacturing and operating costs		
(c) advertising and marketing	(38)	(125)
(d) leased assets	(171)	(492)
(e) staff costs	(1,954)	(5,274)
(f) administration and corporate costs	(263)	(1,235)
1.3 Dividends received (see note 3)		
1.4 Interest received		
1.5 Interest and other costs of finance paid	(191)	(191)
1.6 Income taxes paid		
1.7 Government grants and tax incentives	1	4,101
1.8 Other (provide details if material)		
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(4,448)</b>	<b>(8,233)</b>
<b>2. Cash flows from investing activities</b>		
2.1 Payments to acquire or for:		
(a) entities		
(b) businesses		
(c) property, plant and equipment	(83)	(452)
(d) investments		
(e) intellectual property		

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (6 months) \$A'000
(f) other non-current assets (security deposits)	7	(67)
2.2 Proceeds from disposal of:		
(a) entities		
(b) businesses		
(c) property, plant and equipment		
(d) investments		
(e) intellectual property		
(f) other non-current assets		
2.3 Cash flows from loans to other entities		
2.4 Dividends received (see note 3)		
2.5 Other (provide details if material)		
<b>2.6 Net cash from / (used in) investing activities</b>	<b>(76)</b>	<b>(519)</b>

<b>3. Cash flows from financing activities</b>		
3.1 Proceeds from issues of equity securities (excluding convertible debt securities)	10,200	12,114
3.2 Proceeds from issue of convertible debt securities		
3.3 Proceeds from exercise of options		
3.4 Transaction costs related to issues of equity securities or convertible debt securities		
3.5 Proceeds from borrowings		
3.6 Repayment of borrowings		
3.7 Transaction costs related to loans and borrowings	(575)	(611)
3.8 Dividends paid		
3.9 Other (provide details if material)		
<b>3.10 Net cash from / (used in) financing activities</b>	<b>9,625</b>	<b>11,503</b>

<b>4. Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1 Cash and cash equivalents at beginning of period	3,011	5,352
4.2 Net cash from / (used in) operating activities (item 1.9 above)	(4,448)	(8,233)

<b>Consolidated statement of cash flows</b>		<b>Current quarter \$A'000</b>	<b>Year to date (6 months) \$A'000</b>
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(76)	(519)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	9,625	11,503
4.5	Effect of movement in exchange rates on cash held	(2)	7
<b>4.6</b>	<b>Cash and cash equivalents at end of period</b>	<b>8,111</b>	<b>3,011</b>

<b>5.</b>	<b>Reconciliation of cash and cash equivalents</b> at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	<b>Current quarter \$A'000</b>	<b>Previous quarter \$A'000</b>
5.1	Bank balances	841	422
5.2	Call deposits	7,269	2,589
5.3	Bank overdrafts		
5.4	Other (provide details)		
<b>5.5</b>	<b>Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>8,110</b>	<b>3,011</b>

<b>6.</b>	<b>Payments to related parties of the entity and their associates</b>	<b>Current quarter \$A'000</b>
6.1	Aggregate amount of payments to related parties and their associates included in item 1	85
6.2	Aggregate amount of payments to related parties and their associates included in item 2	
<i>Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.</i>		

## Quarterly cash flow report for entities subject to Listing Rule 4.7B

<b>7. Financing facilities</b>	<b>Total facility amount at quarter end \$A'000</b>	<b>Amount drawn at quarter end \$A'000</b>
<i>Note: the term "facility" includes all forms of financing arrangements available to the entity. Add notes as necessary for an understanding of the sources of finance available to the entity.</i>		
7.1 Loan facilities		
7.2 Credit standby arrangements		
7.3 Other (please specify)		
7.4 <b>Total financing facilities</b>		
7.5 <b>Unused financing facilities available at quarter end</b>		
7.6 Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.		

<b>8. Estimated cash available for future operating activities</b>	<b>\$A'000</b>
8.1 Net cash from / (used in) operating activities (item 1.9)	(4,448)
8.2 Cash and cash equivalents at quarter end (item 4.6)	8,110
8.3 Unused finance facilities available at quarter end (item 7.5)	
8.4 Total available funding (item 8.2 + item 8.3)	8,110
8.5 <b>Estimated quarters of funding available (item 8.4 divided by item 8.1)</b>	1.82
<i>Note: if the entity has reported positive net operating cash flows in item 1.9, answer item 8.5 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.5.</i>	
8.6 If item 8.5 is less than 2 quarters, please provide answers to the following questions:	
8.6.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?	
<p>Answer: The Company expects to have funds to meet its net operating cashflows for reasons including: 1) The Company secured a further \$470,000 through a Rights Issue in April 2023. The Company has a further three months to fill the Rights Issue shortfall and is in discussions with third parties to seek to do so; 2) The Company is planning to generate revenue from products sales; and 3) The Company will receive a significant R&amp;D grant for the year ended 30 June 2023 in Q1 or Q2 of FY2024.</p>	
8.6.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?	
<p>Answer: Yes, please refer to answer of 8.6.1</p>	

8.6.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?

Answer: Yes - with the funds received in April 2023, the anticipated product sales and access to R&D Funding, the Company believes it will have sufficient working capital to meet its operational objectives.

*Note: where item 8.5 is less than 2 quarters, all of questions 8.6.1, 8.6.2 and 8.6.3 above must be answered.*

## Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: 20 April 2023

Authorised by: By the Board  
(Name of body or officer authorising release – see note 4)

## Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standard applies to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.