

31 January 2024

December 2023 Quarter Activities Update

Highlights

- Signed A\$2.6 million contract with North Carolina State University (NCSU) for laser development activity, as part of the Commercial Leap Ahead for Wide Bandgap Semiconductors (CLAWS) Hub
- Acquired contract manufacturer GaNWorks Foundry and completed vertical integration at BluGlass' Silicon Valley fab
- Continued to grow customer engagement, and secured first purchase order of prototype gallium nitride Distributed Feedback (DFB) lasers
- Received \$7.3 million R&D Tax Rebate

Global semiconductor developer BluGlass Limited (**ASX: BLG**) provides the following update and Appendix 4C Quarterly Report for the three months ended 31 December 2023 (Q2 FY24).

US Department of Defense Microelectronics Commons contract with CLAWS Hub lead NCSU

BluGlass secured its largest contract to date during the quarter, signing a US\$1.775 million (A\$2.6 million) laser development agreement with North Carolina State University (NCSU) – the lead member of the Commercial Leap Ahead for Wide Bandgap Semiconductors (CLAWS) Hub. Under this FY24 contract, BluGlass is developing single-frequency Distributed Feedback (DFB) lasers and further improving its violet (405nm, 420nm) and blue (450nm) single-mode lasers. It is important to note these lasers have always been BluGlass' core focus and the CLAWS project allows the Company to fast track its development with additional funding.

The CLAWS Hub is one of eight Microelectronic Commons (ME Commons) innovation hubs established by the US Department of Defense, with the FY23-27 program allocated US\$2B in CHIPS and Science Act funding. Core development agreements are awarded on an annual basis with BluGlass' future collaborative role in the CLAWS Hub potentially including the development of ultra-violet through to green single-mode lasers and Photonic Integrated Circuits (PICs).

CEO Jim Haden said, "This sub-contract with the US Department of Defense is a significant milestone for BluGlass, elevating our industry profile and providing important project revenues while we fast-track our longer-term visible laser roadmaps. Alongside our first core development contract, we are also applying to participate in specialist, high-priority projects across expanded GaN wavelengths, epitaxy and process development, and high-value devices for quantum applications. These projects are funded by the broader US\$2 billion ME Commons.

"Our collaboration with the CLAWS Hub means we are recognised as a crucial US commercial manufacturing supplier of gallium nitride (GaN) epitaxy, fabrication, packaging, and testing. This provides longer-term opportunities for BluGlass as high-quality visible lasers are a critical component in a wide range of commercial and defence applications."

Acquired GaNWorks Foundry

During the quarter, BluGlass acquired its commercial contract manufacturer for GaN n-side wafer thinning and laser bar cleave capabilities, GaNWorks Foundry. The US\$800,000 acquisition included GaN wafer processing

equipment and installation as well as the transition of experienced GaN engineers, enabling BluGlass to complete vertical integration at its Silicon Valley production facility in January.

Vertically integrating these critical remaining wafer process steps accelerates production and development cycles of these processes by over 30%, while delivering annualised savings of US\$400,000.

“The acquisition of our final wafer fab contract manufacturer provides multiple technical and commercial benefits, including increased laser production throughput, improved laser quality and consistency, faster development cycles, cost reductions, while also bringing forward higher-value product roadmaps. These critical laser manufacturing steps are highly complex and difficult to replicate. Encouragingly we are already benefitting from having these final processes in-house and under our operational control.

“There are very few GaN back-end fabrication contract manufacturers and our acquisition of GaNWorks significantly increases barriers to entry for new players. The equipment is now installed and meeting operational benchmarks in our Silicon Valley fab. We anticipate cost savings alone will enable us to pay off this investment in less than two years,” said CEO Jim Haden.

First order of alpha DFB lasers

In January, BluGlass received its first purchase order of prototype GaN Distributed Feedback (DFB) lasers from a leader in photonics systems for commercial and defence applications. The blue (450nm) alpha DFB lasers will be used by the customer for development of next-generation defence, aviation and scientific applications.

“BluGlass, with our partner UC Santa Barbara, is a world-leader in the development of GaN DFB lasers in visible wavelengths, leveraging our unique semiconductor deposition technologies. The benefits of ultra-precision DFB visible lasers in enabling ground-breaking quantum and defence innovation is attracting significant customer and partner interest, including our CLAWS Hub contract as part of the US Microelectronics Commons. While additional development is required before our visible DFB lasers are available commercially, we continue to advance product performance and DFB demonstrations, and will engage with select collaborative customers on our novel prototypes.”

Customer engagement

BluGlass continues to build its direct-to-market visible laser sales and order back-log across its portfolio, and is engaging with multiple potential customers on product and proposal requests. During the quarter, BluGlass received its first repeat orders from multiple customers, including an industry leading original equipment manufacturer (OEM). The customer is testing BluGlass’ lasers within novel quantum applications and has the potential to place large volume orders.

Full qualification of new semiconductor components within mass-produced customer applications can be a lengthy process, direct-to-market product revenues often scale slowly, building momentum over time. Large revenue-generating projects provide BluGlass with the fastest path to profitability while also accelerating development of higher-value lasers and new capabilities, ultimately enabling more, and higher value product sales.

BluGlass continues to progress testing and qualification of its lasers within customer applications, and are seeing ongoing demand from industry players for both launched and next-generation GaN lasers.

Financials

Quarterly customer revenue of \$855k, comprised foundry services for a European wafer developer, first revenues under the NCSU contract, and initial payments for laser orders.

BluGlass’ research and development expenses for Q2 FY24 were \$2,751k, inclusive of salaries, materials, and fabrication costs. With vertical integration now complete, the Company expects operational costs will stabilise. Payments to related parties in Q2 FY24 were \$108k, encompassing Chair and Non-Executive Director fees.

Cash at the end of the quarter was \$2,728k, inclusive of the \$7.3 million rebate for R&D carried out in Australia and the United States in FY23. The Company has repaid Radium Capital \$2.56 million in R&D financing.

Activity Undertaken	Amount paid during the quarter \$'000
Laser Diode product development	\$2,701
RPCVD development	\$50
Total direct expenditure	\$2,751

Outlook

BluGlass is well positioned to deliver against its growth strategy in the second half of FY24 with vertical integration now complete and development work for the CLAWS Hub underway. Vertical integration will further improve quality, performance, and reliability of the Company's commercial laser portfolio, supported by the CLAWS Hub activity, which will advance development of the Company's core 405nm-450nm lasers and next-generation products.

At the same time, the Company is working hard to secure new and repeat customer orders, qualify its existing GaN lasers within customer applications, and enter distribution agreements for key markets. Collaboration agreements for novel capabilities are also progressing.

BluGlass continues to follow a well-established commercialisation path for laser companies – securing its first large commercial project while scaling its direct-to-market laser revenues. Partnering with industry and defence primes on revenue-generating development projects is key to validating BluGlass' novel technology capabilities, growing industry influence, gaining business momentum, and becoming a key player in gallium nitride lasers.

The gallium nitride market is growing rapidly and will continue to gain market share given its significant competitive advantages over traditional IR laser technologies in many existing and ground-breaking applications. BluGlass are one of just a handful of GaN laser manufacturers globally. The Company's clear value proposition focused on greater manufacturing and form factor flexibility is addressing unmet market needs and solving customer challenges. BluGlass is leveraging its RPCVD technology to create novel architectures, delivering brighter, better performing lasers, and facilitating the development of next-generation applications.

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

For more information, please contact:

Stefanie Winwood | +61 2 9334 2300 | swinwood@bluglass.com

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 US 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.

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 December 2023

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (6 months) \$A'000
1. Cash flows from operating activities		
1.1 Receipts from customers	295	668
1.2 Payments for		
(a) research and development	(1,567)	(2,764)
(b) product manufacturing and operating costs		
(c) advertising and marketing	(36)	(60)
(d) leased assets	(316)	(556)
(e) staff costs	(2,209)	(4,206)
(f) administration and corporate costs	(340)	(752)
1.3 Dividends received (see note 3)		
1.4 Interest received	56	60
1.5 Interest and other costs of finance paid		
1.6 Income taxes paid		
1.7 Government grants and tax incentives	7,307	7,307
1.8 Other (provide details if material)		
1.9 Net cash from / (used in) operating activities	3,190	(303)
2. Cash flows from investing activities		
2.1 Payments to acquire or for:		
(a) entities		
(b) businesses		
(c) property, plant and equipment	(554)	(1,149)
(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)		
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)		
2.6	Net cash from / (used in) investing activities	(554)	(1,149)

3.	Cash flows from financing activities		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)		
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	2,556	2,556
3.6	Repayment of borrowings	(2,556)	(2,556)
3.7	Transaction costs related to loans and borrowings	(82)	(82)
3.8	Dividends paid		
3.9	Other (provide details if material)		
3.10	Net cash from / (used in) financing activities	(82)	(82)

4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	172	4,258
4.2	Net cash from / (used in) operating activities (item 1.9 above)	3,192	(302)

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (6 months) \$A'000
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(554)	(1,149)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	(82)	(82)
4.5	Effect of movement in exchange rates on cash held	0	3
4.6	Cash and cash equivalents at end of period	2,728	2,728

5.	Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$A'000	Previous quarter \$A'000
5.1	Bank balances	2,540	74
5.2	Call deposits	188	188
5.3	Bank overdrafts	0	(90)
5.4	Other (provide details)		
5.5	Cash and cash equivalents at end of quarter (should equal item 4.6 above)	2,728	172

6.	Payments to related parties of the entity and their associates	Current quarter \$A'000
6.1	Aggregate amount of payments to related parties and their associates included in item 1	108
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

7. Financing facilities	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
<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 Total financing facilities		
7.5 Unused financing facilities available at quarter end		
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 or are proposed to be entered into after quarter end, include a note providing details of those facilities.		

8. Estimated cash available for future operating activities	\$A'000
8.1 Net cash from / (used in) operating activities (item 1.9)	3,192
8.2 Cash and cash equivalents at quarter end (item 4.6)	2,728
8.3 Unused finance facilities available at quarter end (item 7.5)	
8.4 Total available funding (item 8.2 + item 8.3)	2,728
8.5 Estimated quarters of funding available (item 8.4 divided by item 8.1)	N/A
<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?	
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?	
Answer:	
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:	
<i>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.</i>	

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: 31 January 2024

Authorised by: the Board of Directors
(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.