

BluGlass

H122 results

Further progress towards commercialisation

During H122, BluGlass focused on laser diode development, primarily on improving the reliability of its first-generation product. Recent performance data from prototypes demonstrated commercial light-output results and was very positively received by potential customers. BluGlass remains on track to launch its first laser diodes by mid-calendar 2022.

Year end	Revenue (A\$m)	EBITDA (A\$m)	PBT* (A\$m)	EPS* (c)	DPS (c)	P/E (x)
06/18	0.7	(3.8)	(3.8)	(0.97)	0.00	N/A
06/19	0.4	(5.1)	(5.1)	(1.21)	0.00	N/A
06/20	0.7	(3.6)	(4.8)	(1.01)	0.00	N/A
06/21	0.4	(4.6)	(6.8)	(0.94)	0.00	N/A

Note: *PBT and EPS are normalised, excluding amortisation of acquired intangibles, exceptional items and share-based payments.

Significant performance improvements demonstrated

During H122, BluGlass demonstrated significant performance improvements for four prototypes operating at 405nm and 420nm wavelengths, which is an in-demand and underserved market segment. These related to changes to the cleave processes, which create the laser facets from which light is emitted, and improved bonds between the laser chip and associated package, which are better at conducting heat away from the chip, thus enabling high performance throughout the lifetime of the device. These modifications to manufacturing processes are also delivering higher manufacturing yields. Feedback on recent performance data from potential customers at the Photonics West conference in January was very positive.

Higher costs as laser diode activity intensifies

Revenues are currently derived entirely from epitaxy services. These halved year-on-year during H122 to A\$0.1m because of coronavirus-related effects in Europe and the US. The cost of consumables and personnel expenses were higher, reflecting higher levels of R&D activity on laser diodes and support for the third-party laser diode packaging activities in the US, so EBITDA losses widened by A\$0.8m to A\$2.9m. Stripping out A\$3.6m relating to an R&D tax refund and government grants, operating activities during H122 consumed A\$5.3m cash, leaving A\$6.2m cash at the end of December. Management has not confirmed that these fund-raising activities will provide a cash runway through to initial customer revenues from laser diodes. There is no debt other than lease liabilities.

Valuation: Aiming to secure 6–10% of global laser diode market

While management has not provided formal guidance, it aims to secure 6–10% of the global laser diode market by 2026, which it estimates will then total more than US\$735m (A\$1,021m). This represents annual revenues of around A\$60–90m. This level of market penetration is dependent on BluGlass successfully completing the development of the second generation of higher-performance laser diodes using its remote plasma chemical vapor deposition (RPCVD) technology. BluGlass already has the epitaxial capacity to support annual sales of US\$170m.

Tech hardware & equipment

28 February 2022
Price **A\$0.032**
Market cap **A\$32m**

Net cash (A\$m) at end December 2021 excluding finance leases 6.2

Shares in issue 1,005.2m

Free float 87.1%

Code BLG

Primary exchange ASX

Secondary exchange N/A

Share price performance



% 1m 3m 12m

Abs (2.9) (5.7) (56.0)

Rel (local) (3.3) 0.3 (57.0)

52-week high/low A\$0.08 A\$0.03

Business description

BluGlass is an Australian technology company that is developing and commercialising a breakthrough compound semiconductor technology for the production of high efficiency devices such as laser diodes, light emitting diodes (LEDs) and micro-LEDs.

Next event

Q322 results April 2022

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Developing the direct-to-market laser diode portfolio

As discussed in our [October update](#), BluGlass had hoped to start shipping samples of its first-generation laser diodes by the end of June 2021. At that time, tests on the initial tranche of packaged prototype devices showed lasing results consistent with commercial specifications for output power and wavelength, demonstrating the soundness of BluGlass's epitaxial process. However, when these prototypes went through reliability testing, they showed a gradual loss of light output over time, which did not meet with commercial specifications. Since then the company has been focused on improving product reliability, with multiple design and development iterations of devices progressing through the supply chain. As a result of this intensive activity, it has been able to demonstrate significant performance improvements across four prototypes: the 405nm and 420nm laser diodes in both single-mode (SM) and multi-mode (MM) devices, keeping it on track to meet its revised goal of launching its first direct-to-market laser diodes in mid-calendar 2022.

Exhibit 1: Laser diode product pipeline				
Colour of light emitted	Wavelength	Demonstrated	In development	Next generation
Violet	405nm	MM 1W SM 100–200mW	MM 1.2W SM 250mW	
	420nm	MM 1W SM 100–200mW	SM 250mW	MM 1.8W
Blue	450nm		MM 1.6W SM 100–250mW	MM 3.5W
	470nm			MM 2W
	488nm		SM 100–200mW	
Green	525nm			MM 1.5–2W SM 100–200mW

Source: Company data

The feedback on recent performance data for the four prototype devices from potential customers at the Photonics West conference in January was very positive. This reflects customer demand for products at 405nm and 420nm, which is an underserved and fast-growing part of the laser diode market, as well as interest in BluGlass's intention to offer devices in a greater range of form factors than its competitors.

In addition to the progress on commercialising the first-generation diodes, in H122 the company [successfully demonstrated](#) the world's first working tunnel junction laser diodes manufactured using its proprietary RPCVD technology (described in [our initiation report](#)); strengthened the management team with several laser diode experts, most notably new president James (Jim) Haden (see our [October update](#)); and secured a paid development contract from a European wafer developer to provide epitaxy for custom power applications. This contract, for an undisclosed amount, will generate foundry revenue for a six-month period starting in January 2022 and could lead to a commercial manufacturing agreement generating significant revenue.

Losses widen as group gets ready for first shipments of laser diodes

Revenues up to this point (see Exhibit 2) have been derived entirely from epitaxy services. Revenues from customers halved year-on-year during H122 because EpiBlu foundry orders were delayed by continued coronavirus-related effects in Europe and the US. The cost of consumables rose by A\$0.3m, reflecting higher levels of R&D activity on laser diodes. In addition, income from the Job Keeper programme and other government grants was lower, while personnel expenses were higher, reflecting support for the third-party laser diode packaging activities in the US, so

EBITDA losses widened by A\$0.8m. Reported losses after tax widened by A\$0.9m to A\$4.6m. EPS losses reduced by 8% to 0.47c/share because of the dilutive effect of an oversubscribed entitlement offer to existing shareholders and placement raising A\$6.1m (net) at A\$0.03/share in July.

Stripping out A\$3.6m relating to an R&D tax refund and government grants, operating activities during H122 consumed A\$5.3m cash, leaving A\$6.2m cash at the end of December. There is no debt other than lease liabilities relating to the main warehouse and office because a A\$2.0m loan facility provided by Radium Capital was repaid in full in July 2021. While investment in property, plant and equipment had been minimal (A\$74k) in H121, it totalled A\$0.4m in H122 because the US facility was upgraded with test equipment and a cleanroom to speed up testing of laser diodes. All R&D activity is expensed. The A\$1.7m reduction in trade and other receivables relates to the R&D tax rebate provided by the Australian government.

Exhibit 2: H122 and H121 performance compared

A\$000s	H122	H121
Sales revenue	116	220
R&D tax rebate and government grants	1,897	1,996
Consumables	(2,011)	(1,726)
Other expenses	(2,873)	(2,611)
EBITDA	(2,871)	(2,121)
Depreciation and amortisation	(1,092)	(1,079)
Share-based payments	(585)	(448)
Reported operating loss	(4,548)	(3,648)
Finance costs (net)	(73)	(37)
Reported loss before tax	(4,621)	(3,685)
Tax	0	0
Reported loss after tax	(4,621)	(3,685)
Reported EPS (c)	(0.47)	(0.51)

Source: Company data

Valuation

Aiming to secure 6–10% of the laser diode market by 2026

While management has not provided formal guidance, it aims to secure 6–10% of the global laser diode market by 2026, which it estimates will then total A\$849m. This would represent annual revenues of around A\$60–90m. In our opinion, BluGlass will need to complete the development of its next-generation, higher brightness laser diodes manufactured using RPCVD for certain key epitaxial layers to achieve these levels of market penetration. The scenario analysis presented in [our initiation note](#) calculates that this level of revenues would generate EBITDA of A\$14.1–21.6m.

Exhibit 3: Financial summary

	A\$'000s	2018	2019	2020	2021
30-June		AASB	AASB	AASB	AASB
INCOME STATEMENT					
Revenue		714	425	656	364
Cost of Sales (excluding direct labour)		(1,158)	(1,745)	(1,898)	(3,070)
Gross Profit		(444)	(1,320)	(1,242)	(2,707)
EBITDA		(3,750)	(5,109)	(3,616)	(4,624)
Operating profit (before amort. and excepts.)		(3,941)	(5,287)	(4,687)	(6,757)
Amortisation of acquired intangibles		0	0	0	0
Exceptionals		0	(8,695)	0	0
Share-based payments		(56)	(674)	(1,237)	536
Reported operating profit		(3,997)	(14,656)	(5,925)	(6,221)
Net Interest		157	236	(69)	(78)
Profit Before Tax (norm)		(3,784)	(5,052)	(4,757)	(6,835)
Profit Before Tax (reported)		(3,840)	(14,421)	(5,994)	(6,298)
Reported tax		0	0	0	0
Profit After Tax (norm)		(3,784)	(5,052)	(4,757)	(6,835)
Profit After Tax (reported)		(3,840)	(14,421)	(5,994)	(6,298)
Average Number of Shares Outstanding (m)		389.4	418.3	473.1	724.6
EPS - normalised (c)		(0.97)	(1.21)	(1.01)	(0.94)
EPS - normalised fully diluted (c)		(0.97)	(1.21)	(1.01)	(0.94)
EPS - basic reported (c)		(0.99)	(3.45)	(1.27)	(0.87)
Dividend (c)		0.00	0.00	0.00	0.00
Revenue growth (%)		29.8%	-40.5%	54.5%	-44.6%
EBITDA Margin (%)		N/A	N/A	N/A	N/A
Normalised Operating Margin		N/A	N/A	N/A	N/A
BALANCE SHEET					
Fixed Assets		8,954	5,395	7,883	5,840
Intangible Assets		8,695	0	0	0
Tangible Assets		259	5,395	7,883	5,840
Investments & other		0	0	0	0
Current Assets		17,716	8,558	8,547	7,718
Stocks		54	137	140	131
Debtors		2,253	2,262	2,919	3,351
Cash & cash equivalents		15,354	6,116	5,430	4,176
Other		55	43	58	59
Current Liabilities		(963)	(1,003)	(1,154)	(3,378)
Creditors		(530)	(473)	(408)	(566)
Lease liabilities		0	0	(168)	(184)
Short term borrowings (excluding lease liabilities)		0	0	0	(1,954)
Provisions		(433)	(530)	(578)	(674)
Long Term Liabilities		(318)	(1,306)	(2,882)	(2,670)
Long term borrowings (excluding lease liabilities)		0	0	0	0
Provisions and lease liabilities		(318)	(1,306)	(2,882)	(2,670)
Net Assets		25,389	11,644	12,393	7,509
Minority interests		0	0	0	0
Shareholders' equity		25,389	11,644	12,393	7,509
CASH FLOW					
Operating Cash Flow		(3,514)	(4,931)	(4,348)	(4,809)
Capex		(114)	(4,308)	(1,681)	(90)
Acquisitions/disposals		0	0	0	0
Net interest		0	0	(9)	0
Equity financing		10,471	1	5,507	1,859
Dividends		0	0	0	0
Other		0	0	0	0
Net Cash Flow		6,843	(9,237)	(532)	(3,040)
Opening net debt/(cash)		(8,511)	(15,354)	(6,116)	(5,430)
FX		0	0	0	0
Other non-cash movements		0	0	(154)	(168)
Closing net debt/(cash)		(15,354)	(6,116)	(5,430)	(2,222)

Source: Company accounts

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