



BLUGLASS

BLUGLASS (ASX:BLG)

Launches prototype products & expands US operations

June 2022

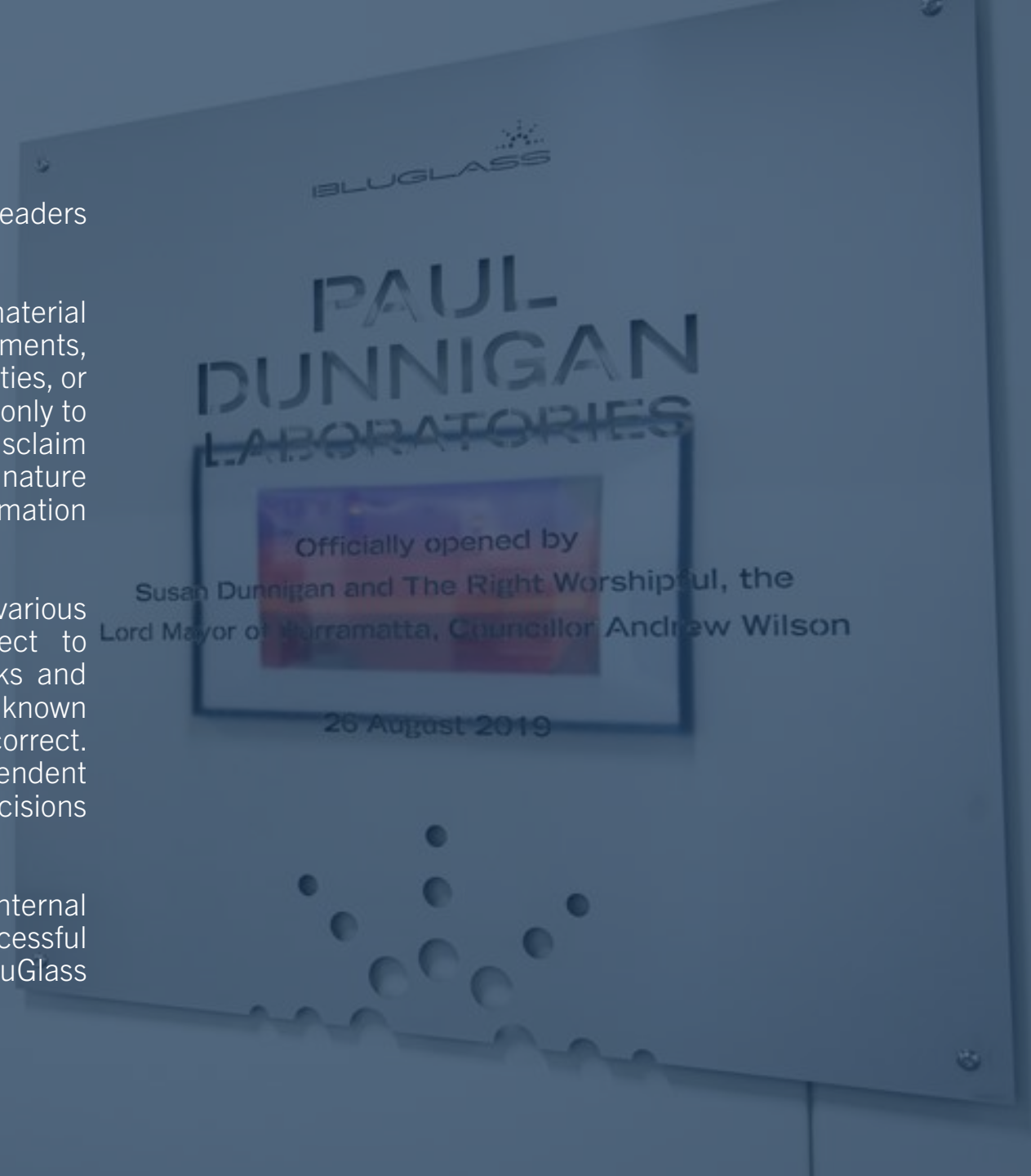
FORWARD LOOKING STATEMENT

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Information on Service Addressable Markets (SAM) is based on internal BluGlass modelling and assumptions, both of which depend on successful R&D outcomes and results achieved within estimated timetables. BluGlass recommends a cautious interpretation be taken by investors.





BLUGLASS OVERVIEW

COMPANY OVERVIEW

BluGlass Limited (ASX:BLG) develops and manufactures leading gallium nitride (GaN) semiconductor materials and laser diode technology for the industrial, scientific and biotech markets.

EXPANDING OPERATIONS

BluGlass' full-suite LD production fab in Silicon Valley will increase manufacturing & revenue capacity, while reducing production costs.

LAUNCHES PROTOTYPE PRODUCTS

The Company has shipped its first **alpha products** to customers for feedback and testing in real-world applications.

STENGTHENED EXPERT TEAM

Led by laser diode veteran **Jim Haden**, BluGlass' expert team brings many decades of combined industry experience.

86 INTERNATIONAL PATENTS

Granted in key semiconductor manufacturing jurisdictions inc Europe, USA and Asia.

FEW COMPETITORS

BluGlass is one of four suppliers of blue Laser diodes globally, in a rapidly expanding growth market.

MULTIPLE PRODUCTS

BluGlass' product pipeline is designed to meet underserved markets with strong customer interest.

PROPRIETARY TECHNOLOGY

RPCVD offers unique benefits to customers – including novel, brighter and higher efficiency laser diodes.

DEBT-FREE

with **\$6.6m cash at bank** as of 31 May 2022.

LEADERSHIP TEAM

BOARD OF DIRECTORS



James Walker
B-Comm, FCA, GAICD
EXECUTIVE CHAIR



Vivek Rao
MS-EE, BSc-Elec
NON-EXECUTIVE DIRECTOR



Stephe Wilks
BSc, LL.M
NON-EXECUTIVE DIRECTOR



Jean-Michel Pelaprat
BSPHy
NON-EXECUTIVE DIRECTOR

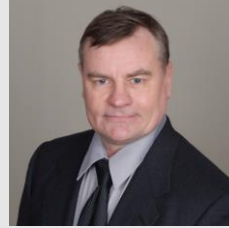
MANAGEMENT TEAM



Jim Haden
MsEE BEE
PRESIDENT



Brad Siskavich
BSME (Mech-Engineering), MBA
EXECUTIVE VP



Dr Arkadi Goulakov
PhD (Physics)
SENIOR LASER SCIENTIST



Stefanie Winwood
HEAD OF CORPORATE
COMMUNICATIONS & IR



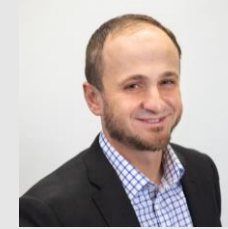
Dr Ian Mann
PhD, MBA, Msc, Bsc-ENG, FAICD
CHIEF OPERATIONS &
TECHNOLOGY OFFICER



Dr Josh Brown
PhD (Physics)
HEAD OF EPITAXY



Dr Marie Wintrebert
PhD (Physics)
CHIEF SCIENTIST

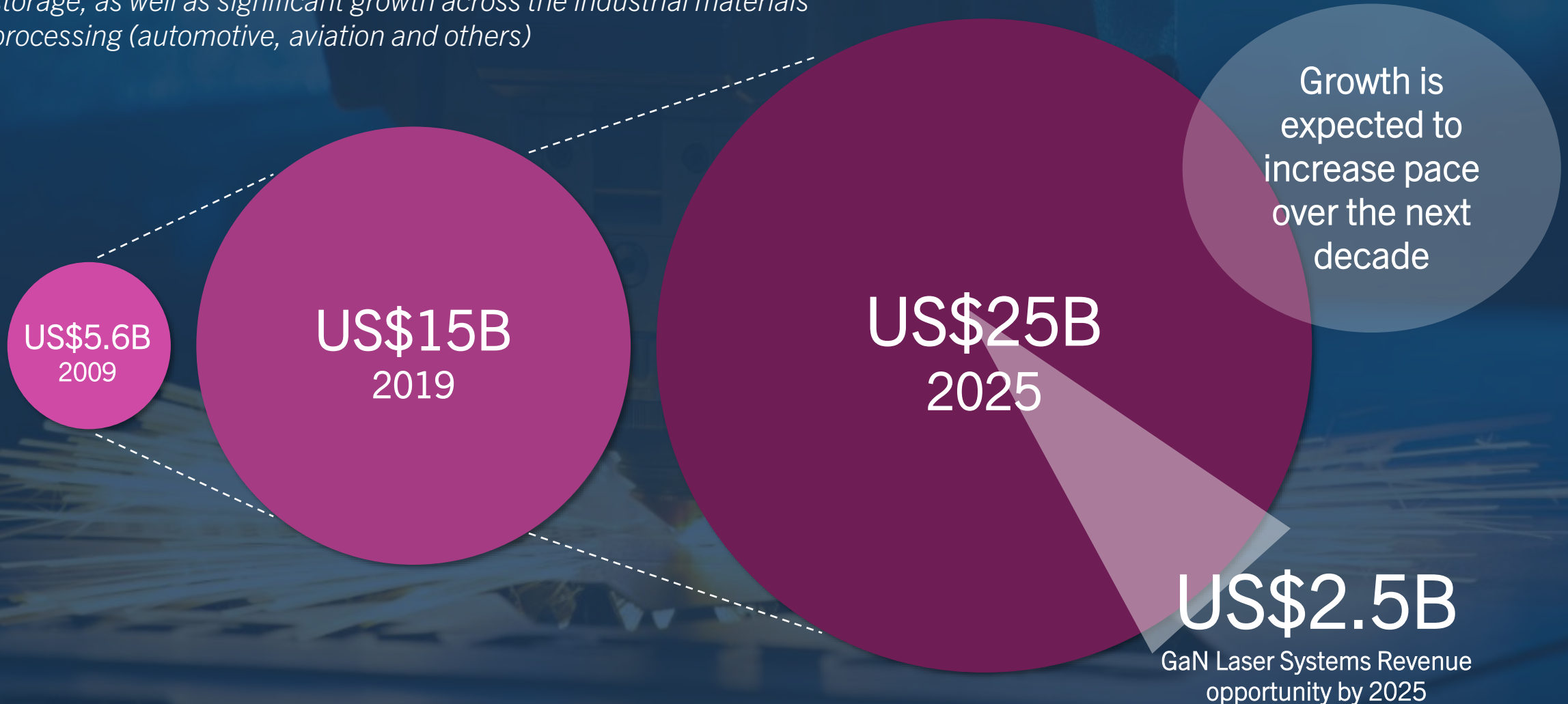


Izzat Shadid
BBus (Accounting), CPA
FINANCIAL CONTROLLER

INDUSTRY OVERVIEW - LASER REVENUE GROWTH FORECAST (2019 – 2025)

Laser revenue has almost tripled in past decade

Driven by the adoption of high-tech applications around the globe such as *smart phones and TV's, 3D printing, electric vehicle and renewable energy storage, as well as significant growth across the industrial materials processing (automotive, aviation and others)*

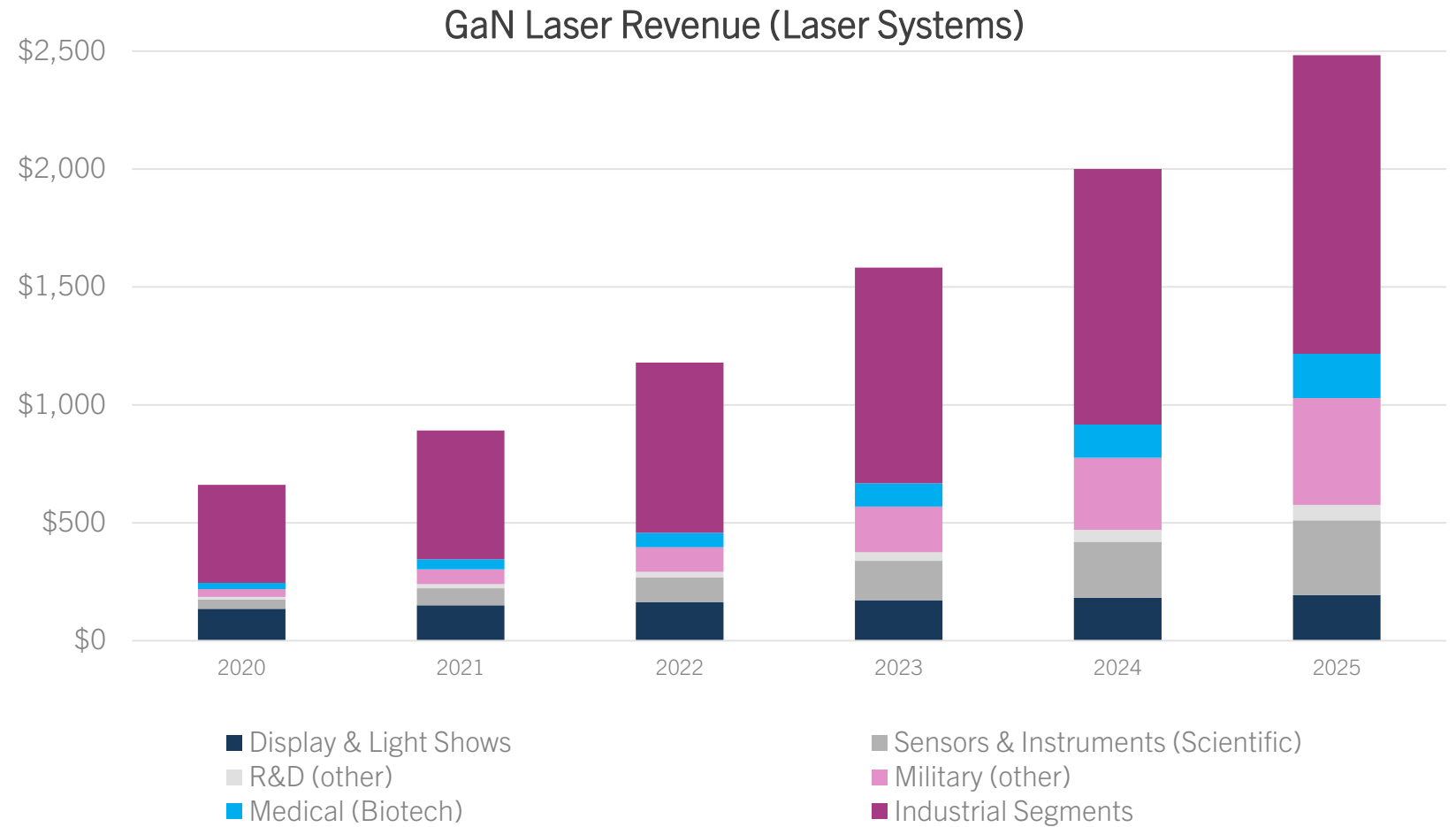


MARKET OVERVIEW – GLOBAL GAN LASER REVENUE FORECAST BY SEGMENT (2019-2025)

US\$2.5B
GaN Laser Systems Revenue opportunity by 2025

BluGlass' Service Available Market opportunity by 2025 is

US\$735M



Source: Strategies Unlimited and Internal BluGlass modelling based on industry sources

INDUSTRY OVERVIEW – BLUGLASS TARGET MARKETS



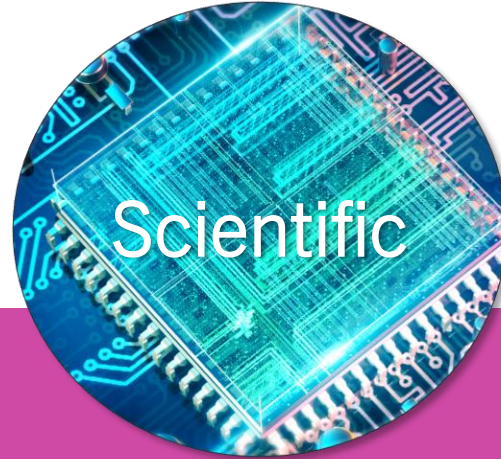
Industrial

BluGlass' Industrial Product
Addressable Market by 2025 is

US\$240M

Wavelengths: (405nm, 450nm, 525nm)
Target Applications: Welding, Marking, 3D
Printing

Customer Landscape inc: nLight,
IPG Photonics, Nuburu, Optical Engines



Scientific

BluGlass' Scientific Product
Addressable Market by 2025 is

US \$80M

Wavelengths: (405nm, 420nm, 450nm,
490nm, 525nm)
Target Applications: Quantum
Computing/Sensing, Spectroscopy

Customer Landscape inc: Coherent, Toptica
Photonics, Novanta-Laser Quantum



BioTech

BluGlass' BioTech
Product Addressable Market by 2025 is

US \$60M

Wavelengths: (405nm, 420nm,
450nm, 490nm, 525nm)
Target Applications: Flow Cytometry, DNA
Sequencing, Photodynamic Therapy

Customer Landscape inc: Akela Laser,
Laser Components, PicoQuant

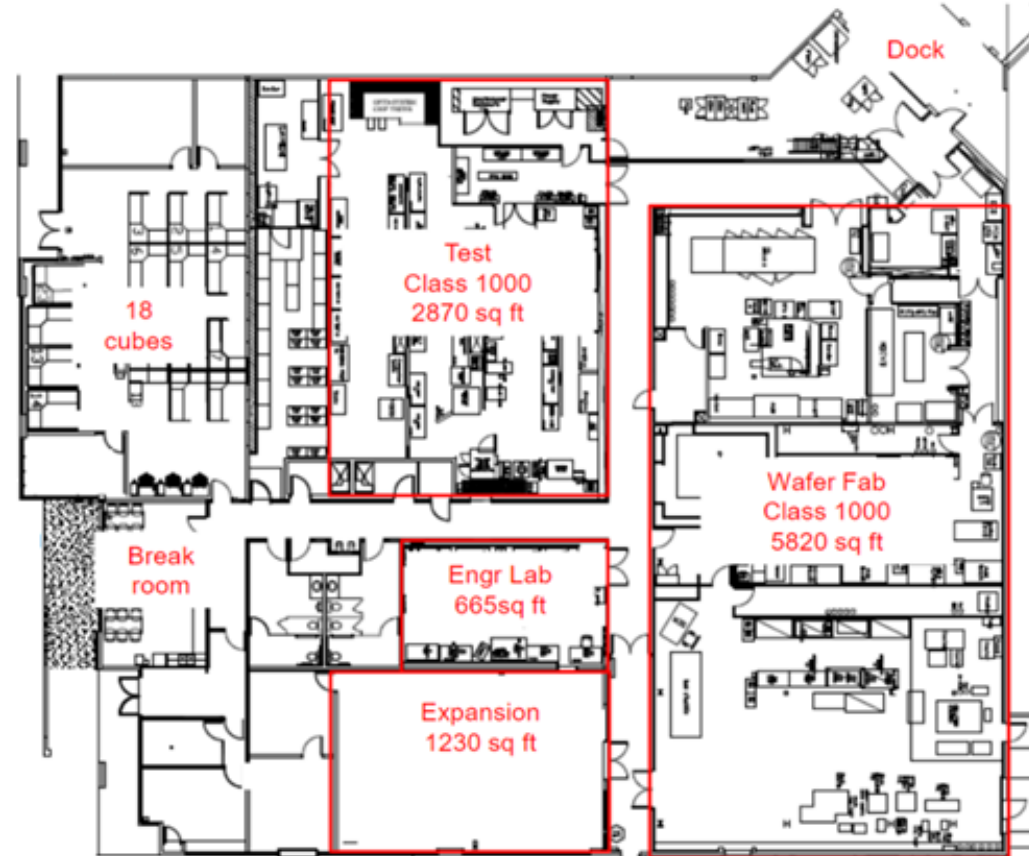


EXPANDING OPERATIONS IN SILICON VALLEY

BLUGLASS SILICON VALLEY – FREMONT CA, USA

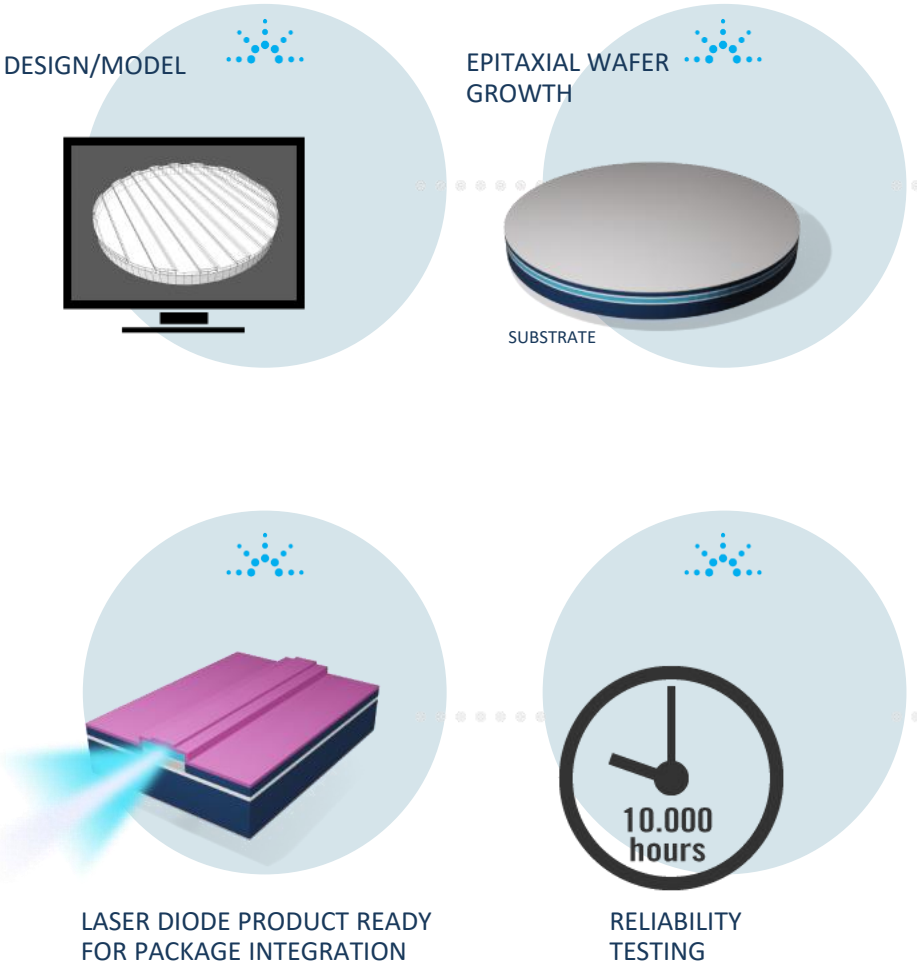


19,000 sq ft purpose-built move in ready Laser Diode Manufacturing facility with full-suite 2" - 4" production facility

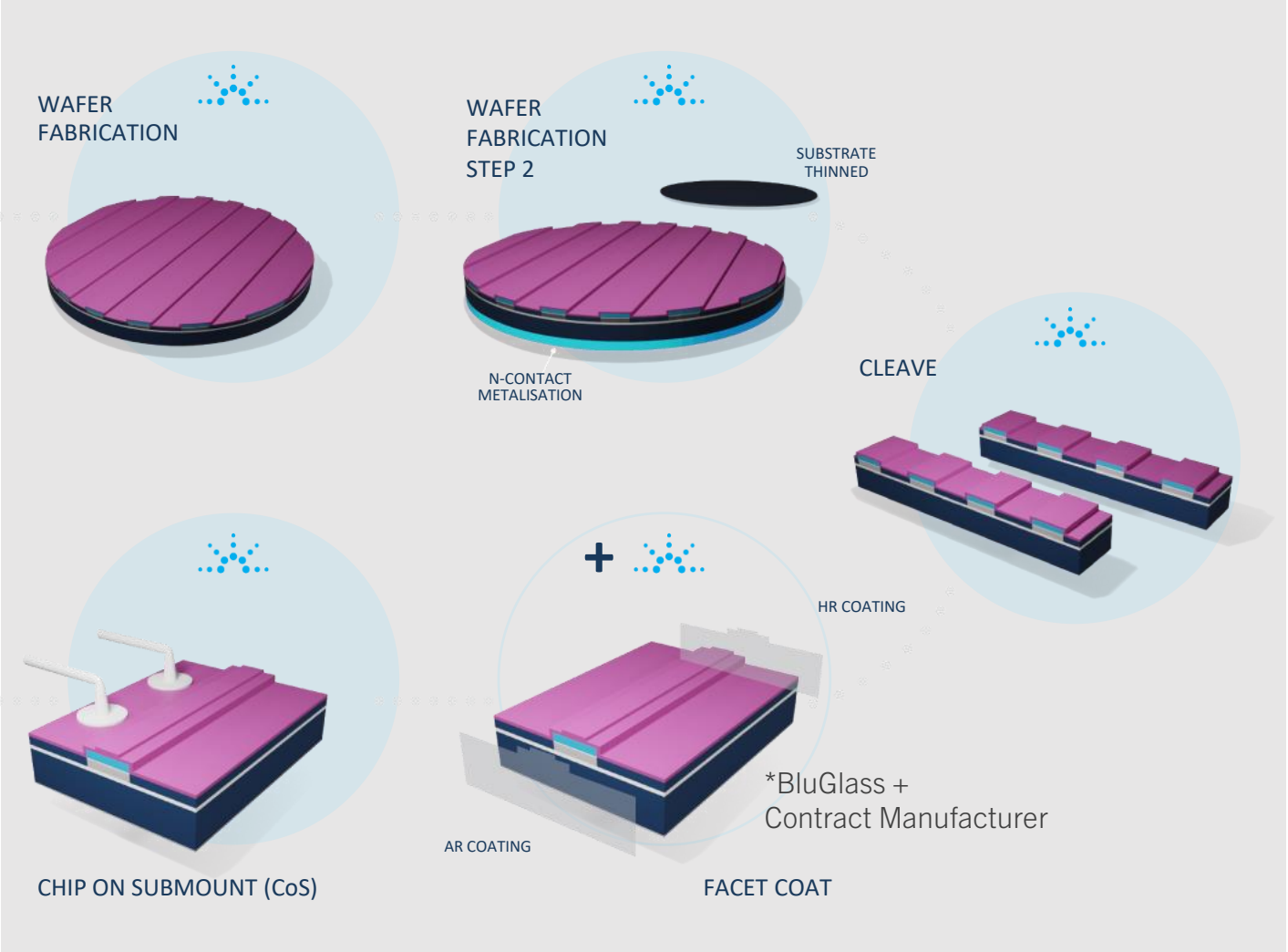


BLUGLASS LASER DIODE SUPPLY CHAIN POST AQUISITION

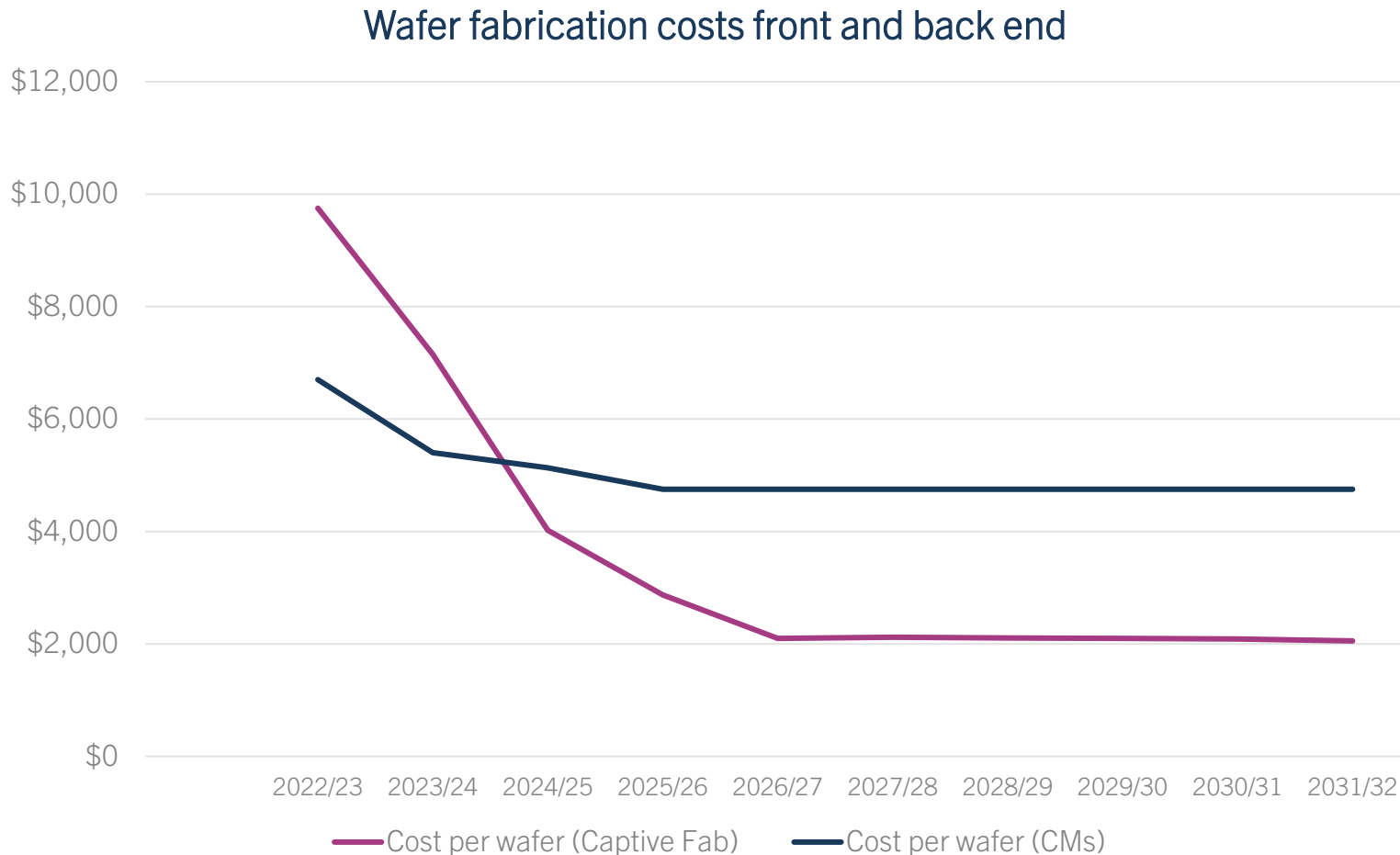
Previous in-house steps



Steps brought in-house with acquisition



LOWER COST OF WAFER PRODUCTION FROM 2024



Production cost crossover point is reached in CY2024 when cost per wafer drops below \$4800.

- Burdened internal wafer costs include:
 - Rent, electricity, IT, facilities, and a contingency equal to the facilities cost
 - Labor (including engineering & facilities) and materials (consumable costs)

SPEED AND AGILITY ARE FUNDAMENTAL TO INNOVATION

Faster Development

- ⊗ Current turn cycle limited to 4-5 development iterations/year despite multiple contract manufacturers (CMs)
- ⊗ Developing a new chip or enhanced product designs often require multiple iterations
- ✓ Owned fab enables short loops to be turned in a week or less
- ✓ Full iterations (similar designs) will have significantly faster turn time of ~3-weeks, allowing up to 48 development iterations/year with captive-fab
- ✓ With appropriate staffing, BluGlass can run parallel lots staggering Process of Record (PoR) and Engineering (development) lots

Expert Team

BluGlass has acquired with the facility a highly skilled, expert manufacturing team with decades of laser diode production experience, including:

- Expert laser fabrication engineers
- Skilled wafer processing technicians
- Facility and maintenance expert who knows this facility and equipment
- Since acquisition have also hired leading GaN LD scientist and veteran Director of Operations with GaN expertise

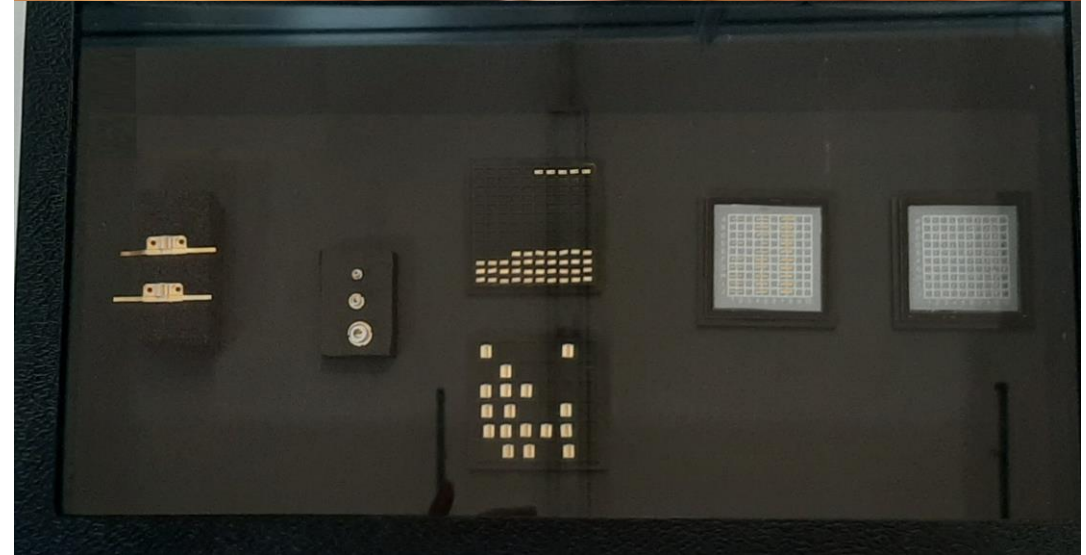


OUTLOOK

FIRST PROTOTYPE PRODUCTS SHIPPED TO CUSTOMERS

BluGlass launches alpha products

- ✓ BluGlass has shipped its first fully packaged laser diode prototypes
- ✓ 405nm and 420nm alpha products will be integrated within a customer's new product design and development cycles for testing
- ✓ An alpha product is an advanced prototype still in the design phase and is a valuable tool to collect customer feedback in real-world applications
- ✓ Working with several customers wanting to trial alpha products for innovative new applications, including medical devices, sensing, quantum computing, and automotive products



DELIVERING AGAINST CLEAR PRODUCT DEVELOPMENT PIPELINE

BluGlass has demonstrated strong progress on initial product offering

	Demonstrated	In development	Next Generation	
Violet	405nm MM – 1W SM – 100-200mW	MM – 1.2W SM – 250mW		MM: Multi Mode SM: Single Mode
	420nm MM – 1W SM – 100-200mW	MM – 1.8W SM – 250mW		
Blue	450nm	MM – 3.5W MM – 1.6W	MM – 5W	
	470nm	MM – 2W SM – 100 -250mW		
	488nm	SM – 100-200mW	MM – 1.5-2W	
Green	525nm		MM – 1.5-2W SM – 100-200mW	

INVESTMENT HIGHLIGHTS

Fast-track company goals

BluGlass' acquisition of a full-suite production fab supports company vision and **fast-tracks longer-term plan** to bring fabrication processes in-house, reducing costs and scaling operations.

Once in a lifetime opportunity to acquire working fab for fraction of cost to build.

Demonstrated LD Improvements

Strong performance improvements in latest results, generating high-levels of interest at Photonics West and Laser World of Photonics.

Launched alpha products to a customer and working with several more wanting to trial prototypes in customer applications.

Delivering on clear roadmap

BluGlass is delivering on its commercial and technology roadmaps to deliver a pipeline of in-demand products to market. New fab also accelerates higher-value product pipeline including tunnel junctions, longer/ shorter wavelength lasers (UV/Green).

Large & Growing Markets

Global laser revenue is forecast to exceed **US\$25B by 2025***.

The GaN segment is growing faster than anticipated, forecast to reach **US\$2.5B by 2025***.

One of only four end-to-end GaN laser diode manufacturers globally.

*Source: Strategies Unlimited 2020



BLUGLASS

THANK YOU

BluGlass Limited (ASX:BLG)
www.bluglass.com.au