



2016

BluGlass Investor Presentation

GILES BOURNE MANAGING DIRECTOR

CORPORATE OVERVIEW



BOARD

George Venardos
Chairman

Giles Bourne
Managing Director

William Johnson
Non Executive Director

Chandra Kantamneni
Non Executive Director

Greg Cornelsen
Non Executive Director

Vivek Rao
Non Executive Director



CORPORATE

Established

2006



ASX:BLG



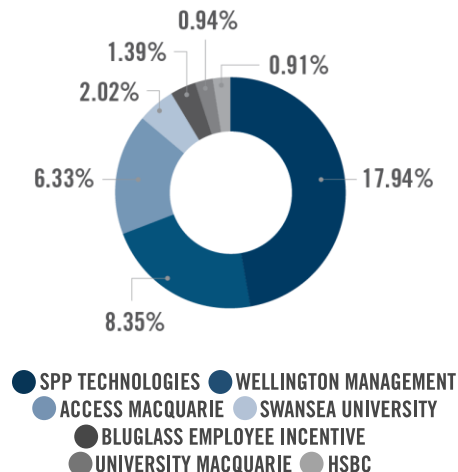
326M

shares issued



TOP SHAREHOLDERS

as at 1 Aug. 2015



AWARDS & GRANTS

2013

Australian Cleantech Competition Winner &
2013 Australian Cleantech Competition
Manufacturing Award

GLOBAL TOP 30

Finalist in GCCA Cleantech Later Stage Award

\$5M

Commercial Ready Grant

\$4.95M

Climate Ready Grant

\$3M

Cleantech Innovation Grant



TECHNOLOGY A Platform Technology

BluGlass is targeting the rapidly expanding LED, PV, and Power Electronics markets



Lighting
Mobile devices & TVs
Green & yellow LEDs
UV LEDs



Consumer electronics
Power Supply
Data centers
Auto



Focus on industrial
scale solar power
(*concentrated
photovoltaics*)



VEECO EVALUATION

Industry evaluation by market leader – equipment manufacturer



RPCVD Evaluation

STATUS

LED



Positive initial 2 inch trials for green LEDs

Now progressing to 4 inch trials and greater collaboration

Power
electronics



Initial materials evaluation of p-GaN for power electronics has also shown that p-GaN has the potential for significant performance advantage



LUMILEDS EVALUATION

Exclusive Collaboration Agreement with market leader – device manufacturer



WORLD LEADING LED
COMPANY EVALUATING
RPCVD FOR NOVEL LED
APPLICATION



Collaborative evaluation with Tier-1
LED manufacturer



*Targeting enhanced performance and lower
cost LEDs using RPCVD*



Collaboration will focus on a **novel application**
of RPCVD



INDUSTRY CHALLENGE High Temperature Growth

MOCVD – The Industry Incumbent Technology

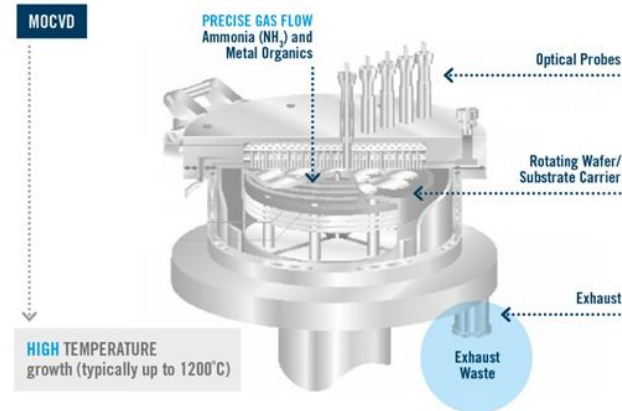


CHALLENGES

High temperature processes limits MQW **performance** (active region of LED)

Uses **ammonia** as nitrogen source, produces toxic waste

High temperatures limit use of large silicon substrates



THE RPCVD SOLUTION Low Temperature Growth

RPCVD – Remote Plasma Chemical Vapour Deposition



BENEFITS



Lower **temperature**
manufacturing processes



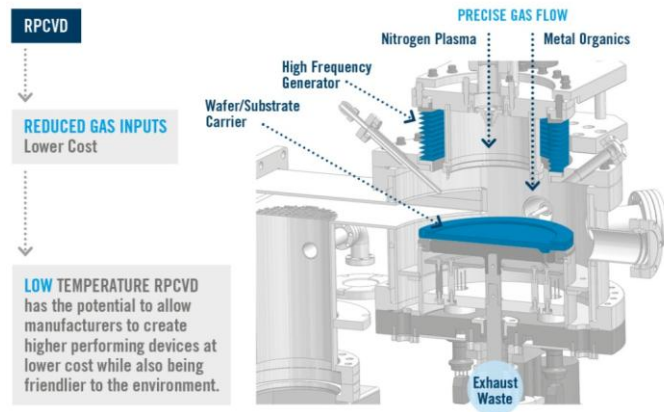
Lower **cost** inputs



Higher **performing**
devices

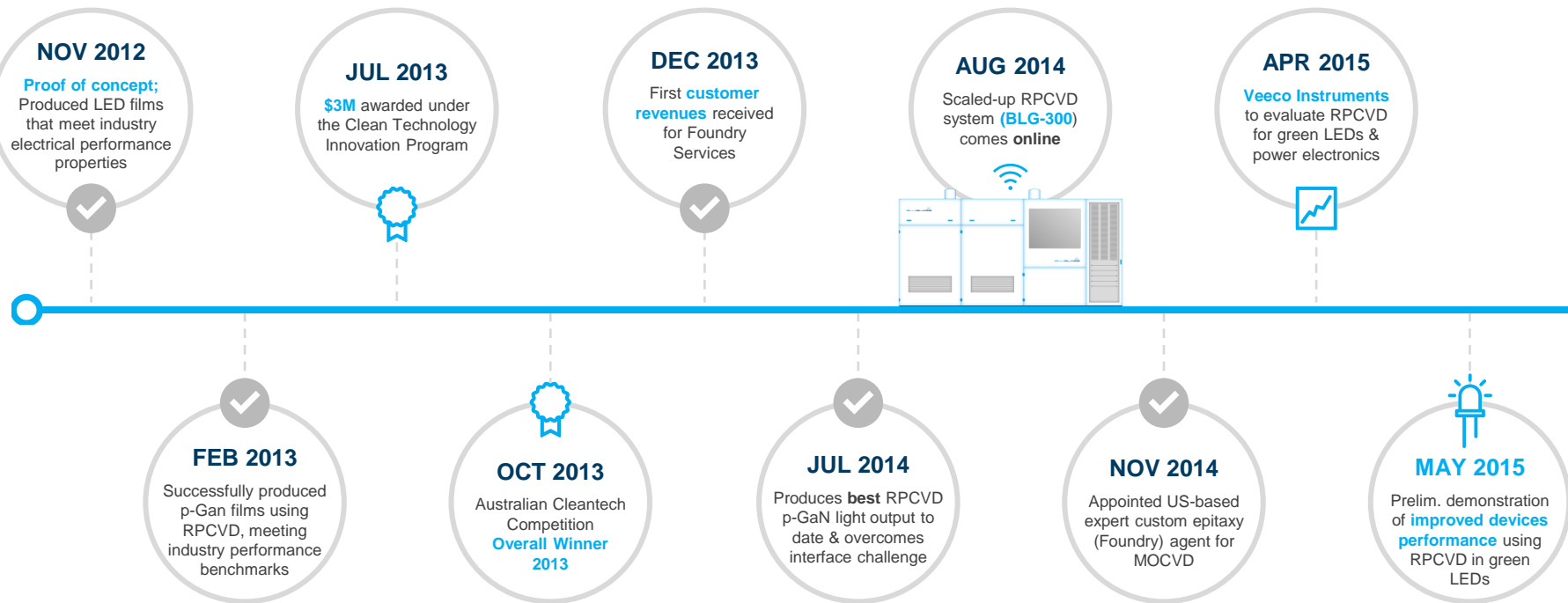


More Environmentally
friendly & sensitive



TIMELINE - Historical

BluGlass has made significant technical progress in bringing RPCVD towards commercialisation



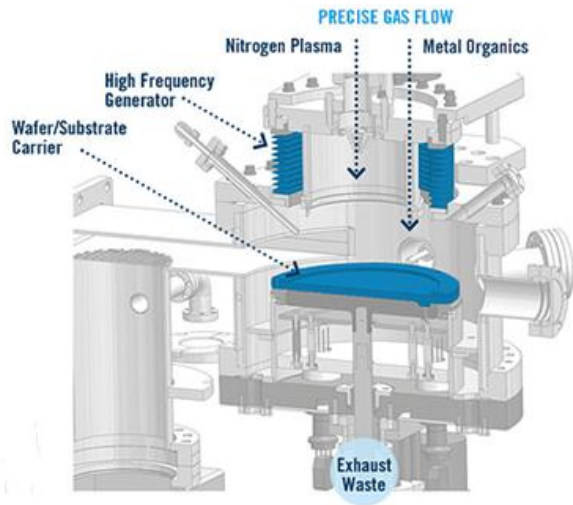
HIGHLIGHTS FY 2015

BluGlass is now engaged with the industry to complete industry evaluation and acceptance of RPCVD



PATENTS

Hardware & Process Patents



41

GRANTED
PATENTS
in key markets;
China, Japan, USA
& Europe



15

PATENT
APPLICATIONS









6

PATENT
FAMILIES



COMMERCIALISATION PATHS

BluGlass continues to review all options for the commercialisation of its RPCVD technology

		LIKELY PATHS	STATUS
LED		 License RPCVD technology Partner with LED device or equipment manufacturer	In discussion with equipment & device manufacturers Evaluation in progress
Power Electronics		 License RPCVD technology Foundry — wafer sales Partner with Power Electronics player	In discussion with potential partner(s)
Solar		 Partner with solar CPV player Manufacture and sell high performance PV wafers	Considering JV options & partners



PATH TO MARKET

BluGlass is active in all four segments of its path to market

DEMONSTRATE KEY APPLICATIONS

Improve device
performance
combining RPCVD
with MOVCD

GROW FOUNDRY BUSINESS

Continue to work with
MOCVD & RPCVD customers
at the leading edge of
technology innovation to
grow revenue &
reputation in the
industry

GAIN INDUSTRY ACCEPTANCE

Complete industry
evaluation with multiple
partners in the value chain
(e.g. equipment & device
manufacturers)

DRIVE COMMERCIALISATION

BluGlass is evaluating a
number of commercialisation
options for RPCVD (inc. JV,
Strategic Partner, Licensing
& Foundry)



END MARKETS LED

LED market is experiencing strong growth

45%

The LED lighting market is anticipated to
grow 45% per year through 2020

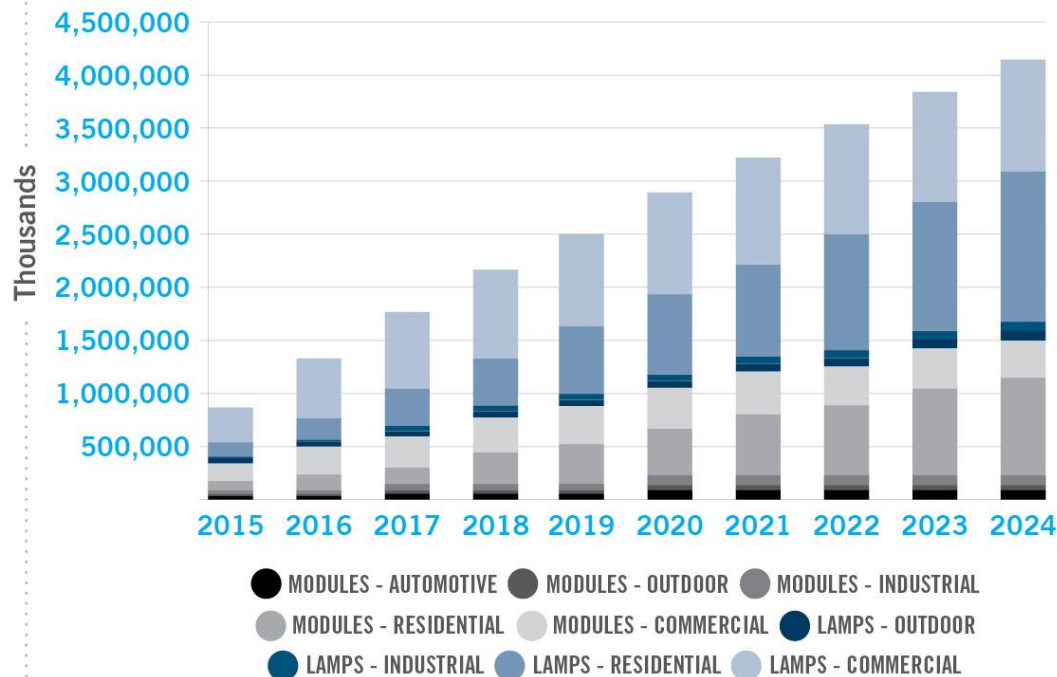


\$216B

Global revenue from LED lighting
systems is expected to total \$216 billion
through to 2024

Source: Navigant Research

UNIT SHIPMENTS OF LED LAMPS & MODULES BY
END USE, WORLD MARKETS: 2015-2024



SOURCE: Navigant Research, *LED Lighting: Global Outlook Report September 2015*



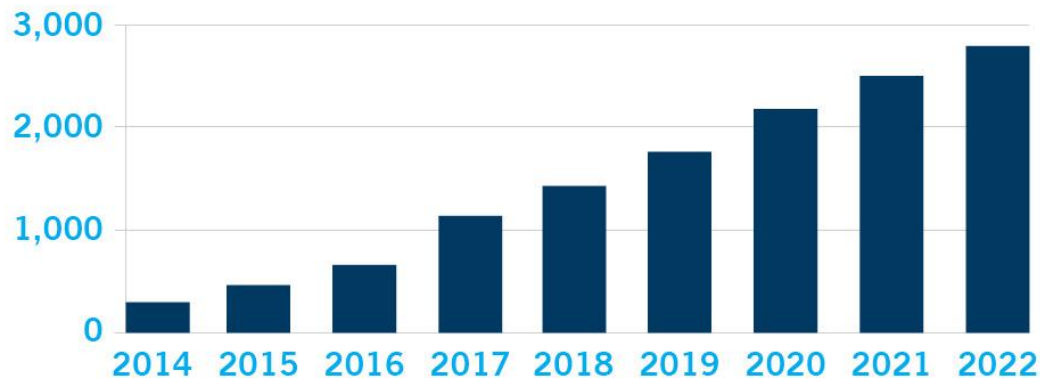
The Power Electronics markets also presents a growing opportunity for the RPCVD technology

✓
\$2.5B

The GaN and SiC power electronics market is expected to be worth \$2.5B by 2023

The emerging global market for SiC and GaN power electronics is expected to grow **17 fold** over the 10 years from 2013 through to 2023

IHS IMS RESEARCH FIGURE: GLOBAL MARKET FORECAST FOR SiC & GaN POWER SEMICONDUCTOR DEVICES
(Revenue in Millions of US Dollars)



SOURCE: IHC Inc, *The World Market for SiC & GaN Power Semiconductors*, 2014



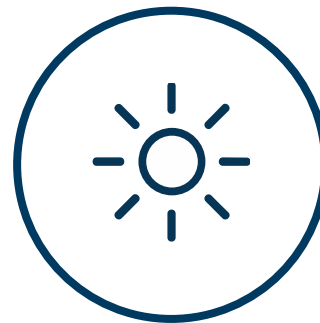


Multiple foundry customers
& a growing pipeline of
new customers

Some customers have
begun to trial RPCVD



BluGlass is now
conducting foundry
and custom epitaxy
services for a variety
of applications
including green and
blue LEDs, power
electronics, and laser
diodes



The foundry business
continues to expose
BluGlass to new and
emerging applications that
could benefit from a low
temperature RPCVD
technology





Key strategy is to attract customers requiring MOCVD initially to test their applications with a path to **incorporate the advantages of low temperature RPCVD** as the technology continues to mature



GROWING NEW CUSTOMER PIPELINE

2 Specialty application LED customers



1 Laser Diode Company wanting to try hybrid RPCVD/MOCVD Laser Diodes



1 Power Electronics Company



WORLD LEADING TEAM Board of Directors



**GEORGE
VENARDOS**

Chairman



35 years experience in insurance, finance and fund management

Director Ardent Leisure

Director IOOF

Former CFO, Insurance Australia Group (10years)



**GILES
BOURNE**

Managing Director



20 years experience in clean tech & manufacturing

Business development & commercialisation specialist



**WILLIAM
JOHNSON**

Non-Executive Director



Seasoned CEO with extensive technology leadership expertise in the global semiconductor industry

Former President & CEO, SPTS Technologies



**CHANDRA
KANTAMNENI**

Non-Executive Director



30 years experience in global semiconductor industry

Former Technical Director, UCLA Nano Systems

Former VP, Worldwide Fab Operations, Peregrine



**GREG
CORNELSEN**

Non-Executive Director



Economics background

Business development specialist

Former Director MOV

Founder Springbok Natural Waters



**VIVEK
RAO**

Non-Executive Director



21 years in the semiconductor capital equipment industry

Technology leadership specialist

Executive VP and COO of SPT Micro-technologies



WORLD LEADING TEAM Management Team



**GILES
BOURNE**

Managing Director



20 years experience in
clean tech &
manufacturing

Business development
& commercialisation
specialist



**DR. IAN
MANN**

COO/CTO



20 year experience in
product development,
tech team management

IP commercialisation
specialist



**STUART
UHLHORN**

Chief Financial Officer



30 years experience in
finance, M&A and JV
management

Former Head of
Corporate Services, IAG



**DR. MARIE
WINTREBERT**

Chief Scientist



Founding scientist and
co-inventor of the
BluGlass RPCVD
process

Device design,
fabrication, modeling
and measurement
expert



**PAUL
DUNNIGAN**

*Hardware & Technical
Services*

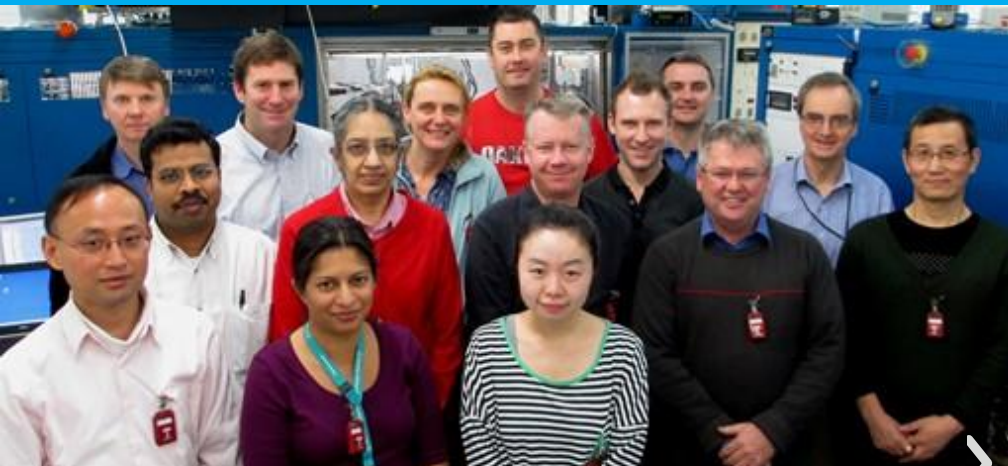


20 years semiconductor
equipment professional

Customers include Intel,
International Rectifier,
Infineon and ST
Microelectronics



FACILITY & WORLD LEADING TEAM



1,200m²

FACILITY
in Sydney, Australia

12

**PROCESS
HARDWARE & DEVICE
TEAM
9PHDs**



Currently
generating **REVENUE**
from custom epitaxy
& contract R&D



CONCLUSION Investment Highlights





bluglass.com.au
