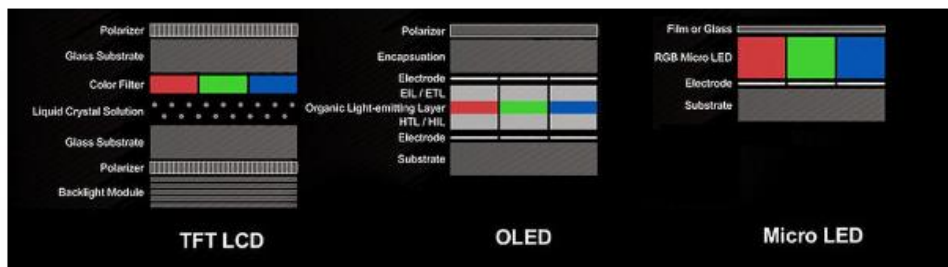


# BluGlass Limited (ASX:BLG)

## MicroLEDs: a new route to commercialisation?

In November 2018, BLG announced that it was in commercial negotiations with global high-performance LED manufacturer Lumileds. While negotiations with Lumileds are ongoing (although no longer on an exclusive basis), no announcement on progress has been made. In addition, we do not know if BLG is also in commercial negotiations with any other parties i.e., another LED manufacturer or an equipment manufacturer.

Lumileds' focus is on manufacturing LEDs for high-performance lights used in the automotive and illumination sectors. In the display sector however, organic LED (OLED) technology currently offers the best commercially viable picture quality (surpassing LCD and plasma displays). As OLED screens don't require backlighting, manufacturers can make the panels thin and bendable and create compelling product designs with curved and foldable surfaces. However, OLED technology, even though ten years old, still presents challenges to the handful of companies, notably LG Display and Samsung Display, which make OLED screens. As a result, OLED screens are typically only seen on high-end smartphones and TVs/displays. But, even as Apple relies on Samsung OLED displays for its' current range of iPhones and wearables, there are reports that the company is investing heavily in an alternative display technology - MicroLED. MicroLED uses millions of inorganic red, green, and blue microscopic LED chips that emit their own bright light to create a picture; it is a similar self-emissive technology to OLED, with the potential for even thinner and more flexible screens, but with but with higher peak brightness, a wider HDR palette, a longer lifespan and no picture "burn-in". Interest in this next generation display technology has grown significantly after Samsung demonstrated its 146" MicroLED display – called "The Wall" – at the CES (Consumer Electronics Show) in January 2018. Samsung's MicroLED technology is modular, meaning the screen size can be configured to different sizes and resolutions.



An illustration of LCD vs OLED vs MicroLED. Compare the complexity and multiple layers of an average LCD, vs OLED and especially MicroLED. Also note the thickness, which while not exact, is indicative of the thinner display possibilities of the newer technologies.

In May, BLG announced that foundry customer and leading micro-transfer printing company X-Celeprint had implemented BLG's unique RPCVD p-GaN technology in high performance MicroLED display prototypes. Having BLG's technology trialled in MicroLED devices is, we believe, an important development for the group, as it gives BLG real world exposure to this new, but technically challenging, display technology. While we recognise that the work with X-Celeprint is in its early stage, we hope that it could lead to commercial agreements of some sort in the near-future.

### Risk-weighted NPV-derived target price: A\$0.22ps (A\$0.29ps previously)

Our base-case remains that BLG will enter into a commercial agreement with Lumileds. However, because of the apparent lack of progress over the past six months and continued poor visibility on the timing and metrics of any commercial agreement, we have increased our risk discount to 75% from our previous risk discount of 66%. As a result, our target price has fallen to 22cps from 29cps. **We maintain a Speculative Buy (Higher Risk) recommendation.**

Risks to our forecast earnings profile and target price include but are not limited to: global growth rates in LED demand, successfully entering into a technology licencing agreement, timing and royalty rates associated with this agreement, working capital requirement prior to first royalty payments, competition from alternative technology providers, key personnel risk.

**19 June 2019**

Share Price: A\$0.15

Target Price: A\$0.22

**Target Upside: 47%**

Recommendation

**Speculative Buy**

Risk Assessment

**Higher**

#### IT – Semiconductors (SC) and SC equipment

David Brennan, CFA

Senior Investment Analyst

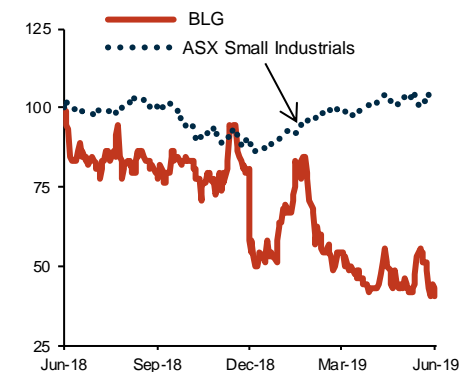
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#### BluGlass Limited

ASX Code	BLG
52-week range (A\$)	A\$0.15-A\$0.36
Market Cap diluted (ASm)	61
Shares quoted (m)	418
Av Daily Turnover (shares)	384,385
ASX All Ordinaries	6,720
FY19E BV per share (A\$)	0.05
FY19E EPS (A\$)	-0.01
FY19E Net (Debt)/Cash (A\$m)	7.5

#### Relative Price Performance



**BluGlass Limited**

Year ending June

Profit & Loss Statement (A\$m)	FY18A	FY19E	FY20E	FY21E	FY22E
Lumileds royalty (incl. FY20E licence)	0.0	0.0	15.0	3.1	13.8
Other revenue	0.7	1.00	1.25	1.50	1.75
<b>Revenue (total)</b>	<b>0.7</b>	<b>1.0</b>	<b>16.25</b>	<b>4.6</b>	<b>15.6</b>
Costs	(6.5)	(7.0)	(7.4)	(7.7)	(8.1)
<b>EBITDA</b>	<b>(5.7)</b>	<b>(6.0)</b>	<b>8.9</b>	<b>(3.1)</b>	<b>7.5</b>
Depreciation & Amortisation	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
<b>Operating profit</b>	<b>(5.9)</b>	<b>(6.2)</b>	<b>8.7</b>	<b>(3.3)</b>	<b>7.3</b>
Other (R&D rebates)	1.9	2.0	2.0	0.0	0.0
<b>EBIT</b>	<b>(4.0)</b>	<b>(4.2)</b>	<b>10.7</b>	<b>(3.3)</b>	<b>7.3</b>
Interest income	0.2	0.5	0.2	0.4	0.3
Interest expense	0.0	0.0	0.0	0.0	0.0
Tax expense	0.0	0.0	0.0	0.0	0.0
<b>Reported NPAT</b>	<b>(3.8)</b>	<b>(3.7)</b>	<b>10.9</b>	<b>(2.8)</b>	<b>7.6</b>
<b>Normalised NPAT</b>	<b>(5.8)</b>	<b>(5.7)</b>	<b>8.9</b>	<b>(2.8)</b>	<b>7.6</b>

EBITDA Margin (%)	na	na	na	-66%	48%
Operating profit margin (%)	na	na	58%	-70%	47%
EPS Reported (A\$)	(0.01)	(0.01)	0.03	(0.01)	0.02
<b>EPS Normalised (A\$)</b>	<b>(0.01)</b>	<b>(0.01)</b>	<b>0.02</b>	<b>(0.01)</b>	<b>0.02</b>
EPS growth (%)	nm	nm	nm	nm	nm
DPS - Declared (A\$)	0.00	0.00	0.00	0.00	0.00
Avg. no. of fully-diluted shares (m)	393	422	422	422	422
YE no. of fully-diluted shares (m)	422	422	422	422	422

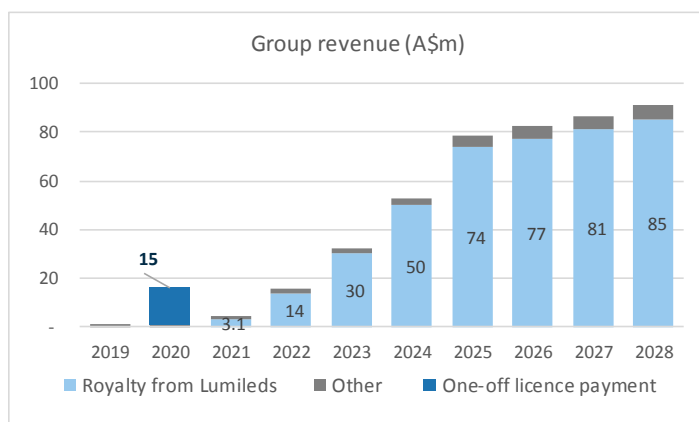
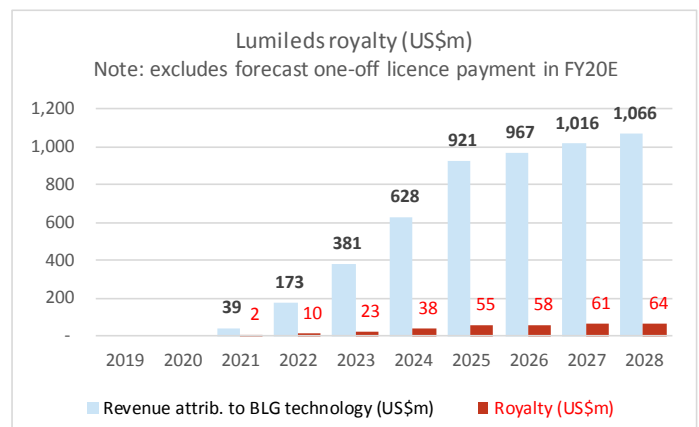
Cash Flow Statement (A\$m)	FY18A	FY19E	FY20E	FY21E	FY22E
EBITDA	(5.7)	(6.0)	8.9	(3.1)	7.5
Investment in working capital	0.1	0.0	0.0	(0.2)	0.0
Tax expense	0.0	0.0	0.0	0.0	0.0
<b>Operating Cash Flow</b>	<b>(5.6)</b>	<b>(6.0)</b>	<b>8.9</b>	<b>(3.3)</b>	<b>7.5</b>
Capex	(0.1)	(4.0)	(4.0)	(0.2)	(0.2)
Other investments	0.0	0.0	0.0	0.0	0.0
<b>Investing Cash Flow</b>	<b>(0.1)</b>	<b>(4.0)</b>	<b>(4)</b>	<b>(0)</b>	<b>(0.2)</b>
Net interest received / (paid)	0.2	0.5	0.2	0.4	0.3
Debt draw down / (repayment)	0.0	0.0	0.0	0.0	0.0
Dividends paid	0.0	0.0	0.0	0.0	0.0
Equity raised / (repaid)	10.5	0.0	0.0	0.0	0.0
<b>Financing Cash Flow</b>	<b>10.7</b>	<b>0.5</b>	<b>0.2</b>	<b>0.4</b>	<b>0.3</b>
Non-operating & Other	1.9	1.7	2.0	0.0	0.0
<b>Inc/(Dec) in Cash</b>	<b>6.8</b>	<b>(7.9)</b>	<b>7.1</b>	<b>(3.0)</b>	<b>7.6</b>

Balance Sheet (A\$m)	FY18A	FY19E	FY20E	FY21E	FY22E
Cash & Equivalents	15.4	7.5	14.6	11.6	19.2
Receivables	2.3	2.3	2.3	2.3	2.3
Inventories	0.1	0.1	0.1	0.2	0.2
Other Current Assets	0.1	0.1	0.1	0.1	0.1
PPE and Exploration & Development	0.3	4.1	7.9	7.9	7.9
Deferred tax asset	0.0	0.0	0.0	0.0	0.0
Other Non Current Assets	8.7	8.7	8.7	8.7	8.7
<b>Total Assets</b>	<b>26.7</b>	<b>22.6</b>	<b>33.5</b>	<b>30.7</b>	<b>38.3</b>
Payables and other current Liabilities	1.0	1.0	1.0	1.0	1.0
Short Term Debt	0.0	0.0	0.0	0.0	0.0
Long Term Debt	0.0	0.0	0.0	0.0	0.0
Other Liabilities (incl silver stream)	0.3	0.0	0.0	0.0	0.0
<b>Total Liabilities</b>	<b>1.3</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>
<b>Shareholders Equity</b>	<b>25.4</b>	<b>21.6</b>	<b>32.6</b>	<b>29.7</b>	<b>37.4</b>
Net Cash / (Debt)	15.4	7.5	14.6	11.6	19.2

Substantial Shareholders	%	Date
SPP Technologies Co Ltd	13.7%	
Access Macquarie Limited	4.8%	Aug-18
HSBC Custody Nominees	3.8%	

Source: Company, IRESS, State One Stockbroking forecasts

Lumileds royalty calc	FY18A	FY19E	FY20E	FY21E	FY22E
Lumileds LED revenue (US\$m)	-	1,300	1,430	1,573	1,730
YoY growth (%)	-	-	10%	10%	10%
% revenue attrib. to BLG technology	na	0%	0%	2.5%	10.0%
Revenue attrib. to BLG tech (US\$m)	na	0.0	0.0	39	173
Effective royalty rate (%)	na	6%	6%	6%	6%
Royalty (US\$m)	na	0.0	0.0	2.4	10.4
AUD/USD exchange rate	na	0.75	0.75	0.75	0.75
<b>Royalty (A\$m)</b>	<b>na</b>	<b>0.0</b>	<b>0.0</b>	<b>3.1</b>	<b>13.8</b>



Leverage	FY18A	FY19E	FY20E	FY21E	FY22E
Debt (A\$m)	0.0	0.0	0.0	0.0	0.0
Net Debt/Equity	cash	cash	cash	cash	cash
Interest Cover (x)	na	na	na	na	na

Valuation Ratios (x)	FY18A	FY19E	FY20E	FY21E	FY22E
Normalised P/E	na	na	6.9	na	8.0
Price/OP Cash Flow	-11	-10	7	-19	8.2
Book value per share (A\$)	0.06	0.05	0.08	0.07	0.09
EV/EBITDA	-8	-9	5	-16	5.6
ROE (%)	-23%	-27%	27%	-10%	20%

Valuation	(A\$m)	(A\$/share)	Comment
Estimated NPV <sub>10</sub> valuation	340	0.81	30-year Lumileds royalty
Other BLG tech partnerships	17	0.04	Nominal 5% of royalty NPV
Enterprise value	357	0.85	
FY19E Net cash / (debt) (A\$m)	7	0.02	
Equity value (unrisked)	365	0.86	Equity valuation - unrisked
Risk discount	75%		Timing / operational / royalty
<b>Equity value (risked) &amp; TP</b>	<b>91</b>	<b>0.22</b>	<b>Equity valuation - risked</b>

Note: Per share valuation based on 422 million shares (diluted)

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