



ClearVue^{PV}

CLEARVUE TECHNOLOGIES LIMITED

INVESTOR PRESENTATION

June 2021

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I. CAPITAL STRUCTURE & GOVERNANCE

Corporate and Capital Structure



Capital Structure

(as at 9 June 2021)

No debt.	
Ordinary Shares on Issue	176,288,107
Options on Issue	28,167,519*
AUD \$0.25 exercise price - exp. Jun 2021 – 14,842,272*	
AUD \$0.20 exercise price – exp. 31 Dec 2022 – 9,775,247	
AUD \$0.25 exercise price – exp. 22 Dec 2023 – 800,000	
AUD \$0.1425 exercise price – exp. 11 Jul 2024 – 2,750,000	
Performance Shares	13,000,000
Approx. Market Cap @ \$0.495	≈ \$85 million
Cash Balance (31 March 2021) (per 4C lodged with ASX 30 April 2021) (Unaudited Cash at Bank as at 9 June approx. \$13.5m)	\$2.8m

Shareholders

(as at 9 June 2021)

Top 20 holding 39.04% of Issued Capital^

16.45% held by founders, board and management*

Share Price Performance (May 2018 – 9 June 2021)



*Balance of options and % held by founders, board and management disclosed, reflect 22,660,099 shares to be issued on conversion of options (refer to the Company's announcement dated 4 June 2021).

^ Does not include shares to be added to Top 20 holder holdings following issue of shares on conversion of options (per 4 June 2021 announcement).

Board

Directors	Role	Experience	Brief Bio
Victor Rosenberg	Executive Chairman	25 years glass industry	Serial Entrepreneur. Globally recognised for his contributions to glass industry. Extensive business experience in senior management and sales over approx. 50 years.
Stuart Carmichael	Non-Exec Director	20 years corporate finance	Member of the Institute of Chartered Accountants with over 20 years corporate finance experience. Currently Chairman of Schrole Group Limited (ASX:SCL) and K-TIG Limited (ASX:KTG), and Non-executive Director of De.mem Limited (ASX:DEM), Swick Mining Services (ASX:SWK) and Osteopore Limited (ASX: OSX).
Roger Steinepreis	Non-Exec Director	30 years corporate law	Corporate and resources lawyer with 30+ years' experience. Legal adviser to a number of public companies on a wide range of corporate related matters. Currently serves as Non-Executive Director on various Boards including Petronor E&P Limited (Oslo Access: PNOR), Latitude Consolidated Limited (ASX: LCD), and is Non-Executive Chairman of Apollo Consolidated Limited (ASX: AOP).
Deborah Ho / Brett Tucker	Joint Co Secretaries	Combined over 12 years corporate and compliance	Company Secretaries to a number of ASX listed and private companies and has been involved in numerous public corporate transactions and acquisitions. Mr Tucker is a Chartered Accountant and Ms Ho is an Associate of the Governance Institute of Australia.

Management

Key Management	Role	Experience	Brief Bio
Dieter Moor	European CEO	17 years BIPV industry experience	Former co-founder and CEO of ertex solar GmbH – a leading global BIPV supplier with more than 2000 projects delivered worldwide. Dieter has a background in civil engineering with extensive experience with sales and marketing of BIPV systems gained over the last 30+ years.
Jamie Lyford	COO & GC	25+ years IP law / technology commercialisation	IP and licensing lawyer with over 20 years experience. Previously worked in leading Australian and overseas law firms, BHP, global IT company ATOS and ran Western Australian Government Innovation Centre.
Geoff Edwards	CFO	30 years experience in CFO, senior financial and commercial roles	Geoff is qualified CPA with over 30 years experience in CFO (including ASX listed companies), senior financial and commercial roles across a variety of service organisations. During that time, Geoff has acquired a wealth of knowledge with start ups, mergers and acquisitions, high growth businesses, equity and debt capital raisings, turn arounds, building financial systems and procedures and strategic planning and implementation.

Technical Team

Key Management	Role	Experience	Brief Bio
Steve Coonen	VP Development – Products, Technology & Sales (North America)	38 years experience in photovoltaics; 26 year focus on BIPV	Steve Coonen is a photovoltaic consulting engineer, specializing in building integrated photovoltaics (BIPV) based in California. Mr Coonen is a pioneer in the BIPV field and whilst working on the ClearVue technology development pipeline assists with North American sales opportunities. Mr Coonen currently has over 3,000 BIPV systems fielded to his credit, including the California Academy of Science in San Francisco, the Whitehall Ferry Terminal in Manhattan and 1,500 new houses for Pulte Homes.
Dr Mikhail Vasiliev	Lead Scientist	20+ years physics	Mikhail has extensive science and technology background, from developing fibre-optic sensors and laser interferometers in the 1990's, to the design of solid-state lasers in the 2000's, followed by 15 years of experience as Senior Research Fellow at Edith Cowan University, where he concentrated on nanotechnology and materials science projects and still supervises PhD students. He has contributed to the design and development of Clearvue core components and technologies, including advanced low-e coatings, glazing systems, luminescent/diffractive interlayers, and solar window systems. He is a multi-skilled expert in the fields of optical physics, optical engineering, photonics, nano-engineered functional materials and also in scientific software development. Mikhail has a PhD (Physics), Victoria University (Melbourne, Australia) and has co-authored multiple (> 50) high-impact research articles published in international peer-reviewed journals.
Tao Zhang	Structural Engineer	16+ years engineering	Tao is a chartered professional engineer in both Australia and China with 16+ years experience. Tao works as Project Manager & Senior Technical Officer in ClearVue and leads our technical team on ClearVue product certification programs and is involved in all aspects of ClearVue's R&D efforts. Tao also supports our sales efforts and manages our global OEM manufacturer and supplier relationships.
Chris Cole	Mechatronic Engineer	Graduate mechatronic engineering	A recent graduate of Sydney University with a degree in Mechatronic Engineering (first class honours), Chris has a background installing sensing equipment on solar and wind farms. He is involved in the design, development, construction, programming and testing of our Smart Façade prototypes, and brings a knowledge of integrated software, hardware and AI systems to the team.

II. COMPANY UPDATE

Company & Technology Overview

Smart Building Technology Company



Creating smart building materials that are:

- Sustainable
- Energy Efficient
- Positive environmental outcomes

Part of the solution for achieving:

- Zero net energy
- Zero net carbon
- Reducing carbon footprint
- *Autonomous* clear functional windows



Technology & Product



A clear glass panel that is:

- Energy saving/producing
- Highly insulating
- Reduces carbon footprint
- Scalable

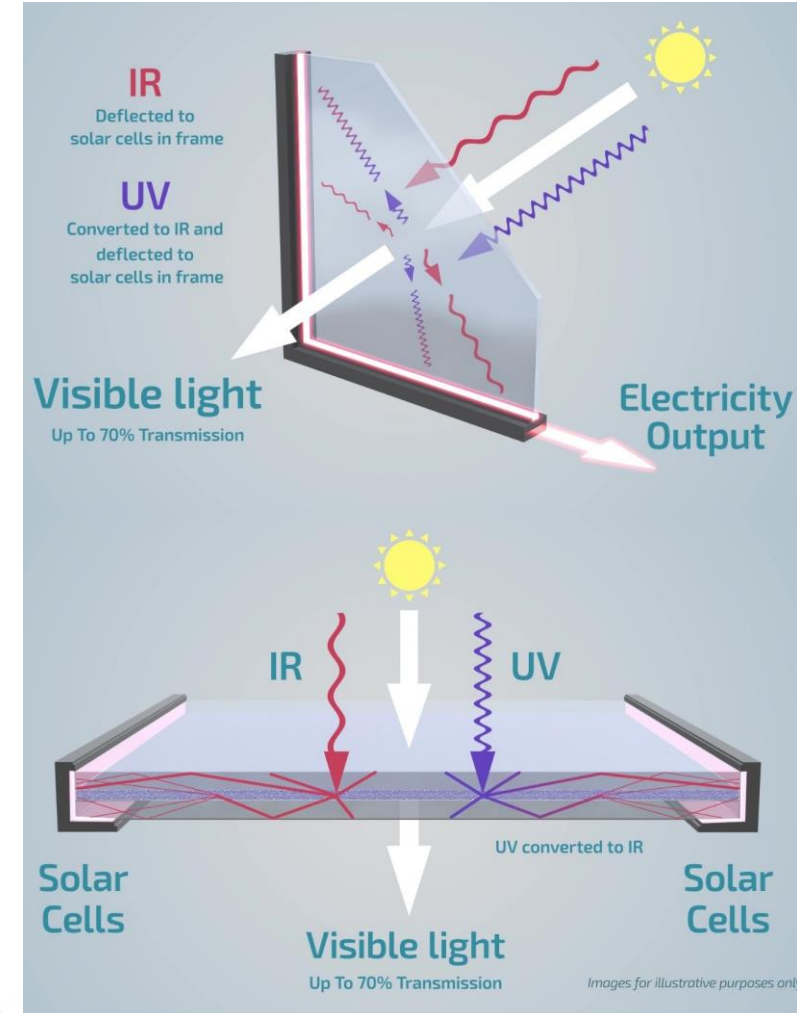
The ClearVue product can be used to achieve:

- *significant energy cost savings*
- *prevent unwanted solar radiation* (UV and IR) from entering a building; and
- then *converting the unwanted radiation into electricity*.

ClearVue's Technology – An Overview



- ❑ ClearVue's patented technology sits within an activated interlayer between two panes of glass.
- ❑ Visible light (VIS) passes through the glass
- ❑ **Micro & nano particles** interact with Ultraviolet (UV) radiation which is down-converted to longer wavelengths and scattered along with Infrared (IR) light to the edges of the glass
- ❑ IR is collected by Photovoltaic (PV) cells and **produces electricity**
- ❑ Reduces heat and blocks damaging UV and IR radiation
- ❑ Insulation properties reduce heating and cooling costs
- ❑ ClearVue has extensive IP protection on its technology and products - **85 granted patents** and 40 patent applications throughout the World



Core Solar PV Window Products

Large Sizes

2.5+m high x 1.2+m wide (>3 sqm)

Size Range

ClearVue can create varying IGU panel side lengths of between 600mm up to 2550mm and provide for more than **45 different IGU panel size combinations** catering for most window use-cases and applications.

- The ClearVue glass/window product is both **CLEAR** and **FUNCTIONAL**
- **SCALABLE PRODUCT** - In both scalable in size ($\frac{1}{4}$ sqm, $\frac{1}{2}$ sqm, $\frac{3}{4}$ sqm, 1sqm, 1.2sqm, 1.4sqm already) - **up to 3sqm;**



Smart Façade Developments

CLOSED CAVITY BLIND



This smart façade uses an **automated blind** to regulate building **temperature and lighting** comfort.

The blind operates within a **closed cavity** and is powered by a small motor that activates in response to outdoor solar conditions and the requirements of the building occupants.

Our ClearVue PV panel makes the system fully **self-powered**, removing the need for cabling to the façade.



AUTO SWITCHING GLAZING

These smart façades utilise **electrochromic technology**. This enables our glass to automatically tint and therefore adjust building **temperature and lighting** comfort.

The panels can be **retrofit** into existing buildings with **no need for cables**, as they are completely self-powering.

Light sensors and learning algorithms give these windows intelligence to **optimise occupant health and wellbeing**.



WINDOWS AUTOMATICALLY TINT TO ADAPT TO LIGHTING CONDITIONS



MULTI-FUNCTION FACADE

This self-powered, multi-functional smart façade incorporates a **closed cavity blind** and a **smart ventilation system** to enable optimised control of lighting, temperature and air quality.

The environmental multi-sensor monitors **light, temperature and CO₂**. The Wi-Fi enabled processor uses deep learning algorithms to learn the optimal conditions and can control both the blind motor and the ventilation system within the façade.



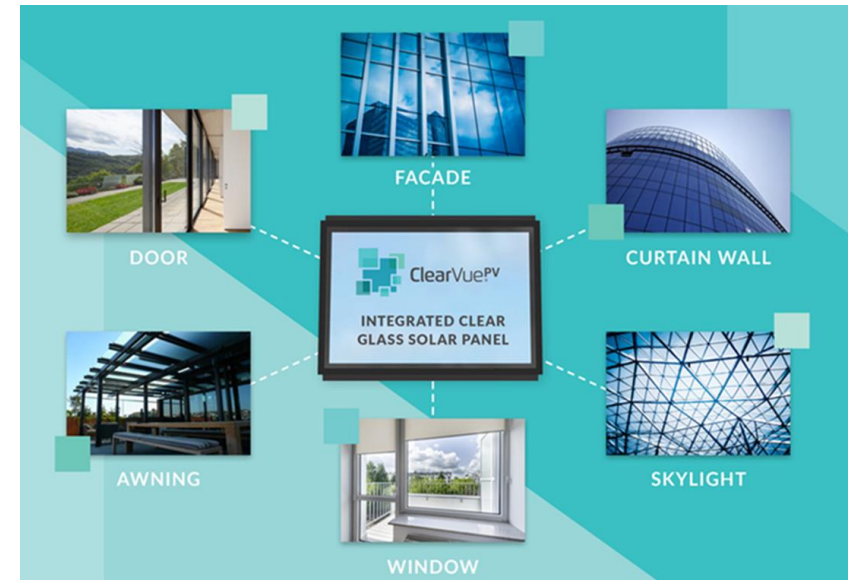
AUTOMATIC BLIND AND VENTILATION



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The ClearVue Advantage

- ❑ **Clear and Functional** – fits multiple applications
- ❑ Efficient – 3 to 4% conversion of radiance to energy
- ❑ Scalable – up to ~3sqm windows
- ❑ Easy to Manufacture – integrates into existing window manufacturing production supply chain
- ❑ Certified - USA – UL; Europe - MEA & IEC; Australia under AGWA & Intertek
- ❑ Cost Effective - Competitively priced, short payback periods
- ❑ Ready to Deploy - Commercialisation commenced



Commercialising ClearVue - deploying the technology



Clearvue's aim is to deploy the existing technology for commercial return

☐ Deployments

- Commercial High Rise Buildings
- Protected Cropping – Greenhouses
- Showcase Deployments

☐ Key Factors

- Utility Prices
- Government Incentives
- Climate and Geography
- Glazing regulations
- Market Size

☐ Key Locations

- Australia
- USA
- Northern Europe (Germany)
- China (JV)

☐ Manufacturing Supply Chain

- PV Strips -China & Taiwan
- US
- Interlayer - Europe /China/US

☐ Market Entry

- Digital Campaigns & new website
- Licence arrangements (KPI's)
- Direct Marketing (feasibility study's)
- Showcase Deployments

☐ Partners / Promoters

- Architects
- Façade Engineers
- Project Developers
- Property Fund Manager
- Resellers
- Greenhouse developers
- Farmers



Business and Revenue Model

ClearVue will derive revenues from:

- ❑ **Direct sales:** The Company will initially sell and supply fully assembled IGU/window products direct to distributors and licensed channel partners in Australia and worldwide. Then, **as manufacturing licensees are appointed in different territories the revenue streams that follow will apply:**
- ❑ **Component sales (US\$245 m²):** The company will sell technology/product components to its manufacturing licensees including its proprietary nano and micro particle doped activated interlayer *and* its proprietary mini solar photovoltaic strips for use inside of each integrated glazing unit*;
- ❑ Minimum sales requirements of a distribution only licensee or a manufacturing/distribution licensee is: 5,000 sqm for year 1, 10,000sqm for year 2, 20,000 sqm for year 3, 30,000 sqm for year 4 & 40,000 sqm for year 5.
- ❑ One licensee (only) achieving their performance criteria equates to over USD \$25m in revenue over 5 years.

Notes:

*Complete ClearVue IGU's initially to be sold in Australia by ClearVue to gain market acceptance. Approx. per sqm rate may change based on order quantities and scaling, country and project specific requirements.

Size of the Market

“By 2060, the world is projected to add 230 billion m² (2.5 trillion sq ft) of buildings, or an area equal to the entire current global building stock. This is the equivalent of adding an entire New York City to the planet every 34 days for the next 40 years.” (Zero Code: <https://zero-code.org/>)

- Global market for building-integrated photovoltaic (BIPV) technologies was USD \$2.4 billion in 2016. Market to grow to USD \$4.3 billion by 2021 (with a compound annual growth rate (CAGR) of 12.2% for the period 2016 to 2021).¹
- ClearVue’s target market represents in excess of 2.1 billion sqm² of glass per annum (total market size 5.5 billion+ sqm of glass per annum)² (**Target Market**).
- It is expected that a small 10 floor 25,000 sqm building could deploy approx. 3,150 sqm minimum of ClearVue product (assuming 3 building sides of 50m long and part floors of 2.1m high only)#.
- A single large building, for example the One World Trade Center (Freedom Tower) New York City has over 93,000 sqm of glass.

Sources:

1. <https://www.bccresearch.com/market-research/energy-and-resources/building-integrated-photovoltaics-markets-report-egy072C.html>
2. https://www.nsg.com/~media/NSG/Site%20Content/Temporary%20Downloads/Japanese/NSGFGI_2011%20EN2.ashx
3. ClearVue does not represent that it will be able to obtain such market share or that such revenue can be achieved. See Disclaimer Slide Page 2.
See ASX Announcement - Technical Update 28/03/2019 - <https://www.asx.com.au/asxpdf/20190328/pdf/443v6jr2zhbvm7.pdf>

Commercialising ClearVue- deploying the technology



2018

- MOUs signed for first licensed distributors
- MOUs signed with various collaborators including Mirreco to build showcase mini-home

2019

- First demonstration site, Warwick Grove Shopping Centre atrium
- ECU research agreement for micropatterned solar cells
- Supplier agreement signed with BeyondPV of Taiwan to secure supply of solar strips
- UL and IEC certification for ClearVue's solar PV IGU product allowing sales in North America and Europe

2020

- Agreement with eLstar Dynamics BV to develop project combining ClearVue window capable of lighting control (demonstrated)
- Distribution Agreement with Insulsteel Building Sciences US
- LOI with Jinmao Green Building Technology Co (subsidiary of Fortune 500 Sinochem)
- Jinmao villa China (in progress);
- MOU signed with Virtuality Venues – “City of Lights” – 568 acre project with 12 hotels
- Distribution Agreement with AMB Brasil
- Glass supplied for sustainable greenhouse at Fujisan Winery near Mt Fuji

Commercialising ClearVue- deploying the technology



2021

- Global digital marketing campaign and new website launched - 1 April 2021
- Signed Distribution Agreement with Tomita Technologies in Japan for Greenhouses – 12 April 2021
- Showcase project – Greenhouse Project Murdoch – opened 19 April 2021
- Listed onto OTC QB to better engage with US market – 26 April 2021
- Announced major product development – single and double glazed versions of product – 18 May 2021
- ClearVue to form JV with eLstar Dynamics BV in the Netherlands – 26 May 2021

OTC Markets

Upcoming 2021

- Demonstration project - New York City
- Plant Science Trials commencing in Greenhouse at Murdoch
- Showcase project – Mirreco mini-home;
- Securing additional licensees in target geographies (in progress)
- Conversion of showcase projects, licensees and marketing efforts into purchase orders – primary focus on US and European markets, focus on quicker sales (greenhousing)

Murdoch University Solar Glass Greenhouse

Officially opened 19 April 2021
World first clear solar glass greenhouse
Why is it so significant?

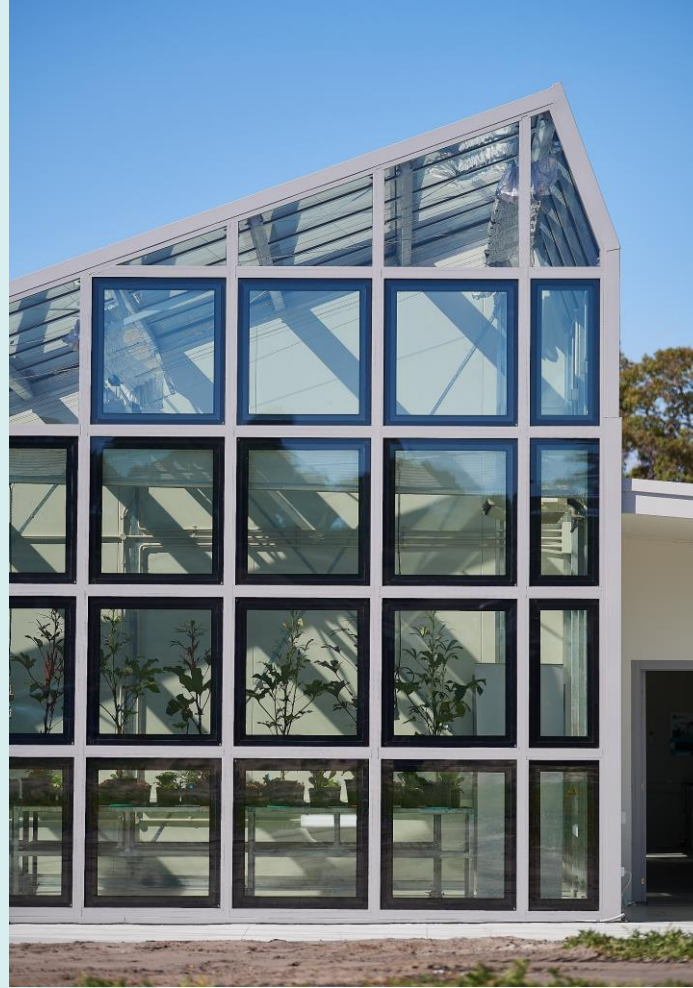
Renewable energy for sustainable food production

Environmental sustainability

Improved human health benefits

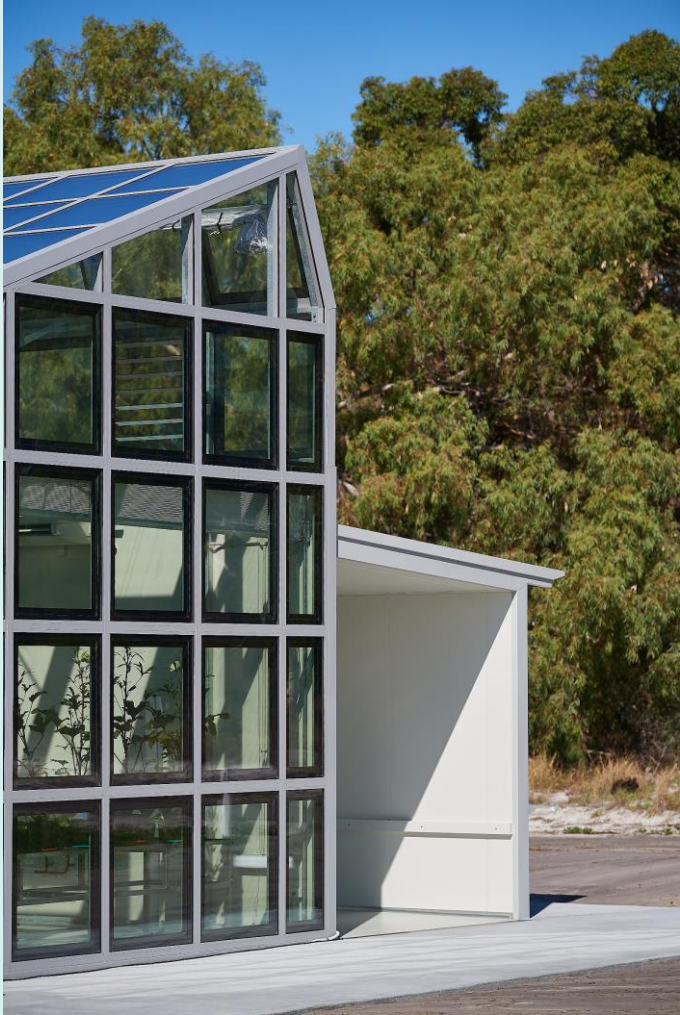
Higher crop yields

Supports agricultural research & development



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Murdoch University Solar Glass Greenhouse



Single & Double Glazing Product Development



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eLstar Dynamics BV – Joint Venture



Photographs from preliminary testing conducted in Eindhoven, The Netherlands.

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Investment Highlights

- ❑ **Attractive industry thematic**
 - ESG investment opportunity in global growth sectors of BIPV, smart cities and food security
 - Unique with high consumer buy in
 - Regulatory support across multiple jurisdictions – EU and US focus – change in Govt in US anticipated to impact growth
 - Large Addressable Market

- ❑ **Proprietary Technology**
 - First in class product
 - Strong IP portfolio
 - Regulatory requirements met for sales in key regions
 - Price competitive with payback period
 - Strong product and tech development pipeline

- ❑ **Near term catalysts**
 - Showcase deployments – under way
 - Continued deal flow
 - High quality counterparty engagement

- ❑ **Refocussed Business**
 - Investor entry low compared to competitors
 - New European CEO
 - Experienced Board

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