

ASX Release | ClearVue Technologies Limited (ASX: CPV)**Appendix 4C & Quarterly Activities Report**

30 July 2021: Smart building materials company ClearVue Technologies Limited (ASX:CPV) (**ClearVue** or the **Company**) provides its quarterly cash flow and activities summary for the period ending 30 June 2021.

Quarterly Activities Report***Quarter Highlights***

- **Major product breakthrough – single and double glazing**
- **ClearVue forming Joint Venture with eLstar Dynamics in the Netherlands**
- **ClearVue to go into public park project in Sydney**
- **European market development gaining momentum**
- **Murdoch Greenhouse – Data collection showing promising results**

Operational Update

This quarter has been a busy and very significant quarter for the Company - kicking off with the announcement of ClearVue's breakthrough in its product development pipeline of single and double glazing versions of its ClearVue PV IGU solar glazing products – these new product developments are expected to significantly open up the market for the sale of ClearVue's technology and products.

This announcement was followed by the equally significant announcement that ClearVue is forming a joint venture in the Netherlands with leading smart glass technology company eLstar Dynamics to combine the technologies of both companies into one class leading energy generating self-powered autonomous dynamically controllable smart glass product (see below for more info).

During the quarter, the Company has remained focused on securing sales and sales leads in its key target markets of Europe and in the US for construction and globally in its key application area of greenhouses. To this end the Company provided a market update during the quarter on: the activities of European CEO Dieter Moor in Europe (see below for more info); and progress on ClearVue's world first solar greenhouse power performance data collection and the commencement of its plant science trials in the greenhouse (see below for more info).

On the marketing front, ClearVue has previously announced the launch of its digital marketing campaign and launch of its new website. The campaign and new website have been successful in generating product enquiry and has been very successful in generating interest for new distributor enquiries which are averaging two to five per week from across the globe.

Closer to home in Australia, ClearVue management are continuing to deliver continuing professional development (or CPD) seminars to architectural firms and architects across Australia on a regular basis with 19 delivered this year to date, and 12 delivered in the last three months of 2020. Further sessions are scheduled through until the end of November 2021. Each such seminar is delivered via Zoom or Microsoft Teams and runs for 60 minutes with question time with the architects typically asking questions on topics related to ClearVue's product such as PV power performance, glazing energy efficiency, how to install the ClearVue PV product, best ways to deploy the ClearVue product etc. These seminars have already given rise to a number of project enquiries from Australian based architects. A similar seminar was completed at the start of the year to architects who are members of the Singapore Institute of Architects in Singapore. The Company now has plans to deliver similar sessions in Hong Kong and Singapore in the future.

The Company is also pleased to confirm that during the quarter just gone the Company completed the expansion of its office space to create a dedicated showroom area and a dedicated office/admin area.

More information on activities completed by the Company during the quarter ending 30 June are provided below.

Product Breakthrough - Single and Double Glazing Formats

On 18 May 2021 the Company announced the development of new format single and double-glazed product designs increasing its product range and offering to now include single and double glazed formats to its existing triple-glazed format.

This announcement confirmed a breakthrough in the Company's product offering allowing the Company to significantly open new market opportunities including for retrofit, transportation and markets such as parts of Asia, South America and Africa that have not yet moved to triple and quadruple glazing formats. The ability for the Company to be able to now offer a power producing single-glazed laminated glass product and double-glazed low-e IGU product in addition to its existing triple-glazed design is something that the market had been asking for and was a key focus for the Company's development path over the last 20 months.

The announcement followed the Company's earlier ASX Announcement of 7 May 2020 when the company announced that it had developed a new PV design that increased power by 33%. The design developments used to increase the power in the Company's core triple-glazed design referred to in that announcement have now been enhanced and re-implemented into a single-glazed monolithic glass panel design and also into a double-glazed panel design.

The Company expects that the single glazed version of the product will be well suited to transport applications including automotive where many new electric and other vehicle designs integrate a dynamically tintable panoramic glass roof into their design. The Company is confident that the single glazed design can be integrated with these types of products (including that from its collaboration partner eLstar Dynamics (see below)) eliminating the need for power draw from an electric car's batteries.

The double-glazed design is well suited to the retrofit market including for the very large market for building upgrades to meet new and revised building codes necessary to meet 'Net Zero' in places like New York City and Chicago, and also Europe, where the company has been focusing its marketing efforts over the last 20 months.

As announced, these designs are still at the trial and testing stages the Company is confident that a commercial-ready product could be available within the next approximately 12 months subject to certifications and any production issues.

More information can be found in the Company's [ASX Announcement of 18 May 2021](#).

CRC-P Funded Greenhouse – Murdoch University

On 6 July the Company provided a [Market Update](#) where it confirmed that data collection from the completed greenhouse is now well underway and that the plant science trials for the winter growing season have commenced with a mixture of grains, legumes, fruit and vegetables (10 types, 480 plants total) including: wheat, barley, strawberry, lettuce, tomato, canola, dwarf bean, lupin, spinach and Arabidopsis.

Power generation data from each of the three sections of the greenhouse using the ClearVue PV glazing panels are performing better than was predicted for this time of the year – full data will be published in due course when more data has been collected and analysed (it is also expected that a scientific paper will also be released and published validating the data consistent with the Company's approach to date).

In summary, and as recorded to date:

- advanced temperature control in the indicative range of $\pm 1^{\circ}\text{C}^1$ against a set optimum growing temperature² (during winter) has been achieved over multiple days within greenhouse growing rooms 2, 3 and 4 where the ClearVue PV glazing has been used;
- Growing room 1 (being the scientific control room using ordinary glazing), despite using more energy to operate having used an average of 30-33 kWh per day in energy, has only been able to achieve temperature control in the range $\pm 2.5^{\circ}\text{C}$;
- Growing rooms 2, 3 and 4 have, combined together, used approximately the same the HVAC energy as used in growing room 1 alone (room1 being the scientific control room using ordinary glazing);
- Specifically, growing rooms 2,3 and 4 have each individually used an average of 11-12 kWh per day (or 33-36 kWh for the total of the three ClearVue glazed rooms compared to 30-33 kWh required to operate the one scientific control room in room 1);
- photosynthetically active radiation (or PAR) has been measured in the ClearVue PV growing rooms 2, 3 and 4 during winter midday conditions, and found PAR to be between 600-700 micromoles/(m²*s), which (based on research literature) is also the optimum PAR range for a wide variety of plants eg. tomatoes;
- in addition to the above and since the Market Update, early data collection is suggesting that the ClearVue PV growing rooms are saving around 20% on water consumption compared to the control room 1 due to lower evaporation rates.

¹ Note: the Market Update provided an indicative range of $\pm 2^{\circ}\text{C}$ - this was conservatively provided - continued data collection now supports a smaller range, at least during the winter months.

² typically in the range 18 - 25°C.

The microclimate control algorithms used in operation of the greenhouse are continually being refined and improved, so that a combination of significant energy savings and tight temperature/humidity control can be maintained over different seasons.

We look forward to updating the market further in the coming months and year on the greenhouse's performance.



ClearVue forming Joint Venture with eLstar Dynamics in the Netherlands

The Company announced on 25 May 2021 that it had signed a Terms Sheet with eLstar Dynamics Holdings B.V in the Netherlands (**eLstar**) to form a Joint Venture to develop and commercialise a product suite that combines the technologies of both companies – specifically to create the market leading, self-powered autonomous smart window capable of integrated energy production and integrated light control.

The signing of the Term Sheet followed the Company's ASX Announcement of 14 April 2020 where ClearVue announced it had signed a Collaboration Agreement with eLstar Dynamics B.V. in the Netherlands.

eLstar is a world leader in the development of a groundbreaking dynamic/switchable glazing technology based upon electrophoresis that combines electrophoretic responsive inks, transparent electrophoretic interlayer substrates, and proprietary control software and hardware to offer unprecedented contrast ratio's and dynamic range, fast switching, dimmability and low-power demands compared against other switchable glazing solutions currently on the market such as electrochromic or polymer dispersed liquid crystal (PDLC).

Both ClearVue and eLstar see a large opportunity to upgrade a massive stock of existing buildings globally to increase their energy efficiency and by offering climate effective solutions for new construction projects and other future application areas.

The Combined Products would create windows that are at the same time highly energy-efficient, generate power, offer maximum comfort and control of lighting levels, can be automatically controlled or can integrate with smart control and IoT building control and management systems - all without the necessity for expensive and difficult to integrate wiring needing to be connected to the windows to operate them and at the same removing the need for curtains, blinds and other window treatments.

Work under the Term Sheet is underway with the parties currently working together on the formal documents including a Joint Venture Management Agreement, Shareholders Agreement, formal IP Licence Agreements, a joint Business Plan and other supporting documents. We look forward to updating the market in coming months as the JV arrangements progress.

Park Project in Sydney

On 28 June 2021 ClearVue announced that it had received its first order for use of its ClearVue PV solar glass in an outdoor public open space application - being for an outdoor covered seating area in an inner city park in Sydney, New South Wales.

The order of \$114,000 (ex GST), of which a 25% deposit has been paid, is for approx. 104 sqm (42 panels) of the ClearVue PV glazing product (inclusive of aluminium framing for the same, international sea freight, local delivery to site in Sydney and all freight insurance and taxes).

The ClearVue PV glazing will be utilized as the covering over the seating area of approximately 104sqm providing both UV and IR protection to park users whilst at the same time generating power to provide lighting for the covered area.

The overhead covering will place the ClearVue PV IGUs above a perforated style steel structure creating a porthole effect such that park users can benefit from clear views to the sky above whilst obtaining maximum protection from the Sun's unwanted harmful rays and protection from rain.

Since the 28 June announcement, ClearVue has commenced manufacture of the ClearVue IGU panels for the project for delivery to Sydney in or around the end of September 2021.

We look forward to updating the market at the time of the project opening.

Option Conversions

On 6 July the Company provided a Market Update confirming that during the months of May and June 2021 the Company had announced the conversion of options expiring 21 June 2021.

The Company confirmed conversion of 61,862,425 options expiring 21 June 2021 (out of a total of 65,608,024 expiring options). The options were exercisable at \$0.25 per option.

In addition, the Company confirmed the following exercises in the other various option classes: 6,274,142 options expiring 31 December 2022, have been exercised at AUD\$0.20 per option; and 550,000 options expiring 11 July 2024, have been exercised at AUD\$0.1425 per option.

European Activities

On 6 July the Company provided a Market Update advising that ClearVue's European market development activities were gaining momentum following the recent appointment of ClearVue European CEO, Dieter Moor. Following his appointment on 1 May 2021, Mr Moor has been actively engaging with prospective customers throughout Europe in the BIPV and construction space.

Mr Moor reports that business activity within the EU is beginning to show signs of returning to pre-Covid levels, assisted by the long-awaited easing of travel restrictions across the Eurozone. With Europe's high vaccination rate, in addition to the European Commission's long-term recovery plan, comprising a €1.8 trillion stimulus package, of which 25% is to be set aside for climate-friendly measures including building renovation, clean energy technologies, low-carbon vehicles and sustainable land use, the continuation of the European business uptrend is looking positive for ClearVue.

After only two months of activity, since the easing of Covid restrictions Mr Moor has had positive engagement with architects and façade/glazing companies, potential R&D partners and collaborators, and potential construction industry stakeholders within the EU. Additionally, Mr Moor has drawn on his extensive international network and held audience with a dozen research institutes across Europe, through both online and face-to-face meetings, demonstrating early-on the value he brings to ClearVue and advancing the company's global market presence. The research institutes have expressed a strong interest in collaborating with ClearVue, with concrete approaches pursued in Europe identified as "automation", in terms of establishment of an automatic production process of the ClearVuePV IGU units themselves, and "optimisation" to increase the efficiency of the ClearVuePV panel output.

Since the Market Update Mr Moor has advised the Company that several sizeable projects already appear to be emerging from his customer outreach efforts - however it is with the knowledge that project realisations in the construction industry can take months, or even years for large building developments with contractual engagement requiring persistence and a dedicated and committed team for sales and technical support throughout the sales and delivery cycles.

Since the Market Update Mr Moor has also confirmed that he is booked to take part in several upcoming international conferences, the first in October 2021 being the 16th 'Advanced Building Skins Conference & Expo', in Bern, Switzerland. Mr Moor will represent ClearVue at the conference and promote the Company, including the first data results from the Murdoch University greenhouse installation, but along with other prominent international architects, engineers and researchers, Mr Moor is a member of the conference committee and will chair an information session on "Integrating Solar Technologies into Façades" (see: <https://ams.abs.green/2021/>)

In November 2021, Mr Moor will also be attending the '4th Advanced Materials in Construction Summit', in Berlin, which focuses on the latest innovations in building materials, green solutions and utilizing next-generation Computer-Aided Manufacturing (CAMS) to extend the "natural" life of a structure. The event aims to bring together experts in building and construction, material science and design and architecture, to share their latest solutions to add real business value to their organisations and for creating more environmentally friendly buildings, while reducing material waste. Mr Moor is looking forward to introducing the benefits of ClearVuePV's technologies to his network with the aim to educate the industry further in terms of 'window integrated PV' (WIPV) (see: <https://www.luxatiainternational.com/product/4th-advanced-materials-in-construction-summit>).

We look forward to updating the market on Mr Moor's and the Company's progress in Europe in the coming months.

Corporate & Financial

As of 30 June 2021, the Company had a cash balance of approximately AUD \$15.944m. The attached Appendix 4C provides details on the cashflows for the quarter ended 30 June 2021. The Company's net cash used in operating activities for the quarter amounted to \$1.021m and included research and development costs (\$0.412m), product manufacturing and operating costs including IP expenses (\$0.111m), expenditure on advertising and marketing (\$0.03m), staff costs (\$0.251m) and administration and corporate costs including interest paid (\$0.451m). Please refer to the quarterly cash flow report (Appendix 4C attached) for further information.

In the quarter ending 30 June 2021 payments totaling approximately AUD\$111k were paid in respect of executive director salaries, director's fees and fees paid to related parties, or associates of a related party, of the Company. Such payments comprised of: company secretarial service fees paid to Ventnor Capital Pty Ltd (a related entity of director, Mr Stuart Carmichael; legal services fees paid to Steinepreis Paganin (a related entity of director, Mr Roger Steinepreis). All such payments to associates of directors were made on an arms-length terms.

Outlook

During the next half of the year the Company looks forward to updating the market on its current and ongoing activities including:

- a demonstration project in New York City
- the mini-home showcase project in Fremantle, WA
- the Fujisan Winery, Japan and Sydney, NSW public park installations
- securing of additional licensees in target geographies (in progress)
- completion of its EU presence establishment
- completion of the JV establishment with eLstar Dynamics
- conversion of showcase projects, licensees and marketing efforts into purchase orders – primary focus on US and European markets, focus on quicker sales (greenhousing).

Authorised by the Board of ClearVue Technologies Limited.

For further information, please contact:

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About ClearVue Technologies Limited

ClearVue Technologies Limited (ASX: CPV) is an Australian technology company that operates in the Building Integrated Photovoltaic (BPIV) sector which involves the integration of solar technology into building surfaces, specifically glass and building façades, to provide renewable energy. ClearVue has developed advanced glass technology that aims to preserve glass transparency to maintain building aesthetics whilst generating electricity.

ClearVue's electricity generating glazing technology is strategically positioned to compliment and make more compelling, the increased use of energy-efficient windows now being regulated in response to global climate change and energy efficiency goals.

Solar PV cells are incorporated around the edges of an Insulated Glass Unit (IGU) used in windows and the lamination interlayer between the glass in the IGU incorporates ClearVue's patented proprietary nano and micro particles, as well as its spectrally selective coating on the rear external surface of the IGU.

ClearVue's window technology has application for use in the building and construction and agricultural industries (amongst others).

ClearVue has worked closely with leading experts from the Electron Science Research Institute, Edith Cowan University (ECU) in Perth, Western Australia to develop the technology.

To learn more please visit: www.clearvuepv.com

Forward Looking Statements

Statements contained in this release, particularly those regarding possible or assumed future performance, revenue, costs, dividends, production levels or rates, prices or potential growth of ClearVue Technologies Limited, are, or may be, forward looking statements. Such statements relate to future events and expectations and, as such, involve known and unknown risks and uncertainties. Actual results and developments may differ materially from those expressed or implied by these forward-looking statements depending on a variety of factors.

Appendix 4C

Quarterly cash flow report for entities subject to Listing Rule 4.7B

Name of entity

ClearVue Technologies Limited

ABN

45 071 397 487

Quarter ended ("current quarter")

30 June 2021

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (12 months) \$A'000
1. Cash flows from operating activities		
1.1 Receipts from customers	28	73
1.2 Payments for		
(a) research and development	(412)	(1,691)
(b) product manufacturing and operating costs	(6)	(32)
(c) advertising and marketing	(30)	(171)
(d) leased assets	-	-
(e) staff costs	(251)	(1,023)
(f) administration and corporate costs	(447)	(999)
(g) intellectual property costs	(105)	(361)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	-	-
1.5 Interest and other costs of finance paid	(4)	(22)
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	206	755
1.8 Other	-	4
1.9 Net cash from / (used in) operating activities	(1,021)	(3,467)

2. Cash flows from investing activities		
2.1 Payments to acquire:		
(a) entities	-	-
(b) businesses	-	-
(c) property, plant and equipment	(199)	(303)
(d) investments	-	-
(e) intellectual property	-	-

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (12 months) \$A'000
	(f) other non-current assets	-	-
2.2	Proceeds from disposal of:		
	(a) entities	-	-
	(b) businesses	-	-
	(c) property, plant and equipment	-	-
	(d) investments	-	-
	(e) intellectual property	-	-
	(f) other non-current assets	-	-
2.3	Cash flows from loans to other entities	-	-
2.4	Dividends received (see note 3)	-	-
2.5	Other (provide details if material)	-	-
2.6	Net cash from / (used in) investing activities	(199)	(303)

3.	Cash flows from financing activities		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	-	3,040
3.2	Proceeds from issue of convertible debt securities	-	-
3.3	Proceeds from exercise of options	14,355	16,209
3.4	Transaction costs related to issues of equity securities or convertible debt securities	-	(202)
3.5	Proceeds from borrowings	-	56
3.6	Repayment of borrowings	-	(311)
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Other (Subscription funds held on trust)	20	20
3.10	Net cash from / (used in) financing activities	14,355	18,812

4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	2,794	920
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(1,021)	(3,467)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(199)	(303)

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (12 months) \$A'000
4.4	Net cash from / (used in) financing activities (item 3.10 above)	14,355	18,812
4.5	Effect of movement in exchange rates on cash held	15	(18)
4.6	Cash and cash equivalents at end of period	15,944	15,944

5.	Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$A'000	Previous quarter \$A'000
5.1	Bank balances	15,888	2,738
5.2	Call deposits	56	56
5.3	Bank overdrafts	-	-
5.4	Other (credit cards)	-	-
5.5	Cash and cash equivalents at end of quarter (should equal item 4.6 above)	15,944	2,794

6. Payments to related parties of the entity and their associates

6.1 Aggregate amount of payments to related parties and their associates included in item 1

6.2 Aggregate amount of payments to related parties and their associates included in item 2

**Current quarter
\$A'000**

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Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments

Payments comprised:-

- Legal fees paid to Steinepreis Paganin, a related entity of director, Mr Roger Steinepreis
- Fees paid to Ventnor Capital Pty Ltd, a related entity of director, Mr Stuart Carmichael, for company secretarial services
- Executive director salaries
- Non-executive director fees

All payments to associates of directors were on arms-length terms.

7. Financing facilities

Note: the term "facility" includes all forms of financing arrangements available to the entity.

Add notes as necessary for an understanding of the sources of finance available to the entity.

7.1 Loan facilities

7.2 Credit standby arrangements

7.3 Other (please specify)

7.4 **Total financing facilities**

Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
-	-
-	-
-	-
-	-

7.5 **Unused financing facilities available at quarter end**

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7.6 Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.

N/A

8. Estimated cash available for future operating activities	\$A'000
8.1 Net cash from / (used in) operating activities (Item 1.9)	(1,021)
8.2 Cash and cash equivalents at quarter end (Item 4.6)	15,944
8.3 Unused finance facilities available at quarter end (Item 7.5)	0
8.4 Total available funding (Item 8.2 + Item 8.3)	15,944
8.5 Estimated quarters of funding available (Item 8.4 divided by Item 8.1)	16

8.6 If Item 8.5 is less than 2 quarters, please provide answers to the following questions:

1. Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?

Answer:

2. Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?

Answer:

3. Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?

Answer:

Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: 30 July 2021

Authorised by: By the Board

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(Name of body or officer authorising release – see note 4)

Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standard applies to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.