

Improving energy efficiency

Glass tech has blue sky appeal



Executive chairman Victor Rosenberg is taking ClearVue Technologies' revolutionary glazing technology to the world.



ClearVue Technologies is embarking on a pivotal 12 months as it turns decades of hard work developing its energy-efficient solar glass technology into commercial deals.

A major sales contract with leading Japanese greenhouse company Tomita Technologies is the first deal in a long pipeline for the ASX-listed company.

"Tomita, which has been in the agricultural industry for about 70 years, has placed its first order for 300 square metres of panels," says ClearVue Technologies executive chairman Victor Rosenberg. "That is currently in production and will be shipped in the next two to three months. We see major growth in Japan thanks to that partnership."

The reason companies are interested in ClearVue is because of its proven and patented solar-glazing technology that prevents solar radiation entering a window and converts it into electricity using photovoltaic (PV) cells.

ClearVue's glazing technology incorporates a clear lamination layer between glass panels that drives unwanted wavelengths of ultraviolet and infrared light to solar PV cells located near the window frame to generate electricity. The dual benefits of insulation and renewable power generation sees ClearVue windows cut heating and cooling costs and improve the energy efficiency rating of the building.

Furthermore, the manufacturing is scalable: unlike many rivals, ClearVue can build large glass panels as well as small. The company can produce a 3.5 x 1.6-metre solar window that can harvest light with an efficiency rating of 3.3 per cent,

which can deliver at least 30 watts per square metre at peak.

Crucially, the glass remains crystal clear: that 30 watts of power generation comes with up to 70 per cent visible light transmission or transparency.

The technology represents a paradigm shift in building materials as industries in Europe and the US are beginning to see glass and other construction materials as the next frontier in carbon reduction and the next-biggest opportunity for decarbonisation. It's in these two key markets where ClearVue is focusing its attention.

In both regions, building regulators are cracking down on buildings with large carbon footprints. For example, in 2019, New York City approved a new emissions cap limiting the amount of carbon new buildings can emit. This regulatory trend is driving demand for building products that perform to create more sustainable buildings.

Rosenberg says ClearVue has been invited to trial its technology in New York as its solution can be retro-fitted to replace any existing window.

"Some New York buildings are facing fines of up to \$3 million a year, and there are at least 50,000 buildings in that city which will have to be upgraded by 2050," he says. "This has to start in the next two years."

"Then, there are 4000 government buildings in the US which President Biden says will need to be more energy efficient; London wants to cut its carbon emissions by 60 per cent by 2025. Major cities are following these examples and will start looking for products like our glass that can put them in a better carbon position."

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ClearVue PV glazing has multiple applications, from residential and commercial through to agricultural greenhouses such as those built by Tomita. The company is targeting architects who need clear glass, engineers and developers looking for innovative products, and greenhouses.

While ClearVue is focusing on commercialising its technology, it also retains a strong research-and-development anchor. ClearVue has ongoing R&D to further develop its product range to include single- and double-glazed versions and also to increase its power performance.

A game-changing collaboration with Dutch company eLstar Dynamics will see ClearVue develop smart windows capable of energy production and lighting control.

"With eLstar we're looking to create self-powered autonomous windows, meaning the user can control how much light comes through the panel, or the panel itself will automatically adjust based on present light levels and heat," says Rosenberg. "In time, they will remove the need for blinds, curtains and any window treatments."

The company listed in 2018 and has been working through securing certifications, including in the US and Europe, and refining its manufacturing processes ahead of its full-throated commercialisation plan.

The company appointed former chief of Austrian renewable energy company Ixos solar Dieter Moor as its Europe CEO to spearhead growth across the region and expects to see traction over the next six months. It is currently looking for a CEO to lead the charge in the US and has an over-the-counter (OTC) listing there to attract American investors.

The company's windows are now already available in Japan, China and the US, with Europe soon to follow.

Rosenberg says investors today are increasingly focused on company carbon balance sheets and product carbon payback periods.

"Large investors want to invest in companies with products that can pay back their carbon cost many times over the life of the product. Depending on the project location, our product and technology can be carbon negative. This is a major driver for our company because it can help reduce the carbon footprint problem for our customers in their projects globally."



Let's create net zero energy buildings

ClearVue's patented clear PV glass generates electricity while reducing the energy consumption and carbon footprint of offices, homes and greenhouses.

www.clearvuepv.com

