InDaily Briefcase: Business snippets from around SA

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Going places: Adelaide's Praxis Labs may soon see their tech on the moon

When the lunar rover touches down on the moon's surface, it could be powered by structural solar technology invented by local company Praxis Labs.

Image: Nicolas Thomas, Unsplash

From space to sea, Adelaide's Praxis Labs is attracting a great deal of interest and contracts for its structural solar.

The lightweight technology not only makes any solar cells tougher and able to withstand impact, but can potentially multiply the power supply available to any vehicle by utilising more of its surface area.

Praxis and the AROSE Trailblazer Lunar Rover team are looking to work together to integrate Praxis's solar cell technology onto the rover.

The Australian consortium Australian Remote Operations for Space and Earth (AROSE) is developing a prototype semi-autonomous moon rover to support NASA's space exploration program.

"Apparently, a lot of space solar actually breaks down because of the horrendously rough vibrations of the launches and landings," said Praxis managing director Katie Donaldson.

"The interest we've had [from AROSE and other space companies] is because they believe the toughness of our integration technology means the solar may survive the launches and landings."

Praxis has also won a contract to supply structural solar for a race yacht for French cleantech accelerator OceansLab.

It will be the world's first green hydrogen race yacht to compete in transatlantic and around the world ocean races with zero emissions.

Praxis's solar tech was chosen as it is the only one able to achieve both the light weight and structural integrity required for a racing yacht – all the other tech OceansLab trialled broke.

This is another great win for the young Adelaide company, which was founded in 2017 by Cameron Donaldson, Katie's brother. He developed the proprietary technology that is now having its moment in the sun.

The company launched following funding under the State Government's Early Commercialisation Fund and is a member of the University of Adelaide's ThincLab for startups, although Katie said it is now "past that phase and scaling, bringing on new staff".

They also have a relationship with Flinders University, with researchers there testing the structural solar to identify any loss in efficiency due to integration.

Cameron said Praxis's own repeated investigations showed the cells perform within the manufacturer's specifications; regardless, they want to quantify any loss.

"I made a few phone calls and found out the right people we needed to do the testing were at Flinders," Katie said.

"We find that people find our tech and what we're doing very interesting, so they were keen to help us out."

Meanwhile, Praxis is working on the development and delivery of solar bonnets and roofs for two Bushmaster and four Hawkei protected mobility vehicles for the Australian Army's Robotics and Autonomous Systems Implementation Coordination Office (RICO).

The company's most recent prototype had a non-slip, rough surface and Cameron said the goal is to integrate solar in any vehicle "in a way that you can't tell it's there".

Praxis has also won an Emerging Aviation Technology Partnerships (EATP) grant to develop structural solar for electric aircraft.

While all their customers are interstate or overseas, Katie and Cameron remain rooted in South Australia and said they can take bigger risks when surrounded by friends, family and "people here that will help you".

It goes someway to explain how the ex-boat builder and ex-interior architect have been able to innovate and find their uncontested niche.

Before Praxis, Cameron built tenders, the small boats that super yachts use to move passengers and supplies.

With wooden boats a status symbol but high maintenance, he ultimately developed a process for embedding timber veneers into the surface of a tough composite structure – and this led to him developing structural solar.

"Building toys for billionaires is a great job," Cameron said.

"But I felt like I wanted to do something that affected more people than that, and maybe even move the dial a little bit."

Katie's preparation was a little more obscure, as she would read business strategy and military strategy books while studying interior design. There was a feeling she was "preparing for something" unknown.

"Then all of this has just come into play, so maybe it is our life's work," Katie said.

Technically, Praxis's composite material could have anything integrated into it if there is a demand, with it known in marketing speak as "massless" technology – that is, the weight of the solar-embedded vehicle component is the same as the weight of the non-embedded one.

The pair can see a bright future for its use.

"We're at this point in human history where we can electrify everything if we drop fossil fuel, grow up a little bit and harvest energy in a way that's good for us all," said Cameron.

“To have the technology to make everything a solar panel is just an amazing place to be.”