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Australian startup leading the way on next generation solar cells

On behalf of the Australian Government, the Australian Renewable Energy Agency (ARENA) has announced \$3 million in funding to Australian startup SunDrive to advance the commercial development of their low cost, high efficiency solar manufacturing process in Australia.

The \$9 million project will also see their technology scaled from an industrial sized cell to a commercial size module that could be used on household rooftops. A small scale automated production line prototype will also be developed, with the eventual aim to produce the technology in Australia.

A key barrier to the broader adoption of next generation solar cell technologies is the use of silver. Globally, solar manufacturing is already estimated to represent 20 per cent of the world's total annual industrial silver consumption. This presents an ongoing supply risk as solar demand grows and is further exacerbated if the industry moves to higher efficiency next generation solar cell structures which require two to three times more silver per cell.

SunDrive's technology replaces the use of silver with copper, which is significantly cheaper and more abundant. In addition to lowering production costs, SunDrive is aiming to further improve efficiencies with a simpler manufacturing process and a thinner solar cell that will require less silicon to produce.

The technology was originally developed by SunDrive's CEO Vince Allen during his PhD at the University of New South Wales Sydney, before founding SunDrive in 2015 with his flatmate from his undergraduate studies David Hu.

SunDrive is now moving to Kirrawee in South Sydney to scale its operations, and be closer to other startups, researchers and investors. With ARENA's support, SunDrive intends to expand its team to include 10 additional staff.

SunDrive initially aims to use its technology to focus on the rooftop solar sector, where space is at a premium and higher efficiency cells can produce greater amounts of energy for a given footprint. Over time the technology is expected to become more cost effective than current solar cell technologies and be adopted for large scale solar.

ARENA CEO Darren Miller said: "As we continue to transition our energy system, the solar industry needs to continually evolve and adopt new cell structures that increase efficiencies, reduce costs and employ more abundant materials."

"It's fantastic to see an Australian solar startup at the forefront of producing the next generation of high efficiency solar cells. Through technological innovations from startups like SunDrive, Australia will remain at the forefront of solar innovation and research and development for years to come."

SunDrive CEO Vince Allen said: "With ARENA's support we feel incredibly proud to be in a position to contribute to Australia's rich heritage of advancing solar cell technology. With this project we have an opportunity in Australia to lead the world in creating the best version of next generation solar cells. Our goal is to use the learnings from this project to bring to life a superior solar technology, creating new local industries which can compete on the global stage."

"With only 3 per cent of world electricity coming from solar today, there is still so much innovation that must occur. Gaining the support from the Australian Government puts us in a stronger position to capitalise on the opportunity that lies ahead."