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Economic opportunities from silicon to solar

On behalf of the Australian Government, the Australian Renewable Energy Agency (ARENA) has today announced a \$541,640 grant to the Australian PV Institute (APVI) to examine opportunities in Australia for solar PV supply chains.

The \$1.12 million 'Silicon to Solar' study will look at options for domestic manufacturing, diversified supply chains, and policy options required to achieve them.

As solar contributes a growing share of Australia's electricity mix, constraints and bottlenecks in global PV supply chains present an increased strategic risk to Australia.

The Australian Energy Market Operator's Integrated System Plan projects Australia will need 120 GW of installed solar capacity by 2050, representing a four-fold increase on current capacity. ARENA's own white paper on ultra low-cost solar paints a scenario of over 1000 GW of installed capacity to achieve part of the renewable energy superpower vision.

Delivering this step change in solar capacity requires robust and reliable supply chains.

Australia is potentially well placed to play an increased role in solar PV manufacturing, as a producer of many of the raw materials required and a hub of technical expertise.

The Australian Centre for Advanced Photovoltaics (ACAP) has signed on as a study partner, bringing with it extensive expertise in solar PV research. Other industry partners involved in the study include 5B, AGL, Aspiradac, Engus, Siemens, SunDrive and Tindo Solar.

As part of the study, APVI will work closely with industry stakeholders to identify technical, commercial, regulatory, and social licence barriers to increased domestic production.

ARENA CEO Darren Miller said the study will provide a path forward to more secure solar supply chains as the industry scales up dramatically.

"Low-cost solar generation will be the foundation stone of Australia's net zero economy, so it's vital that we have reliable supply chains," Mr Miller said.

"With ARENA's support, APVI will look at ways to secure our supply of the inputs into solar panels and find opportunities to reap the benefits of manufacturing at home.

The PERC solar cell, invented right here in Australia, is core to over 80% of the cells manufactured today. Since its invention, local research has been at the forefront of innovation. The Silicon to Solar study will help us find ways to play an increased role in production."

APVI project manager, Dr Muriel Watt, said "Australia has good working relationships with PV manufacturers across the world and is keen to develop diverse and sustainable supply chains as global and Australian demand increases."

ARENA has previously supported ACAP with \$129 million over the last ten years, demonstrating a firm commitment to Australia's world leading research in the sector.

ARENA has today also launched a white paper aimed at highlighting how ultra low-cost solar can unlock Australia's renewable energy superpower. The key objectives of the paper are to elevate solar PV in Australia's national priorities by outlining the benefits that extremely cheap solar could unlock, and to identify and communicate key barriers and innovation priorities for ultra low-cost solar to government, industry and the Australian public.

ARENA has additionally committed \$41.5 million to 13 ongoing solar PV research projects aimed at technological breakthroughs in ultra low-cost solar.