

2 FEBRUARY 2024

Roadmap provides a pathway for domestic solar manufacturing

An industry roadmap for domestic solar PV manufacturing supported by the Australian Renewable Energy Agency (ARENA) outlines a credible pathway for Australia to build domestic supply chains from raw material processing to module manufacturing.

The report titled 'Silicon 2 Solar' (Roadmap) was developed by the Australian Photovoltaic Institute (APVI) working with Deloitte and a group of key industry stakeholders including The Australian Centre for Advanced Photovoltaics (ACAP), AGL, Aspiradac, Energus, Siemens, SunDrive, Tindo Solar and 5B.

The Roadmap provides a framework for Australia to become a viable solar manufacturer, based on detailed technoeconomic analysis for each stage in the solar PV supply chain.

The Roadmap examines four key steps in the supply chain, extending from polysilicon production through the productions of ingots and wafers, followed by the manufacture of solar cells and modules.

Each step in the supply chain involves a number of challenges, but the Roadmap indicates that Australia has the capacity to participate successfully in each stage of the supply chain.

The Roadmap focuses on Australia's potential to manufacture the current leading solar PV technology based on crystalline silicon solar cells. Australia will also have the potential to commercialise more novel solar technologies as they reach technical and commercial maturity.

Australia is a major contributor to solar PV research and development (R&D) and a major market for solar PV but currently lacks any significant domestic manufacturing capability and is heavily reliant on other markets for a supply of low-cost solar PV modules.

As Australia significantly ramps up its rate of solar PV installations from current levels of approximately 5 GW per annum, it will be critical to maintain reliable and diversified sources of supply. By contributing towards global supply chains, Australia will reduce the potential risk to its required energy transformation and also play a greater role in the world's net zero ambitions.

ARENA CEO Darren Miller said the Roadmap provides a clear vision for Australia's role as a nation that can manufacture cutting edge solar technology across the supply chain, leveraging some of Australia's competitive advantages in the sector.

"Australia has already demonstrated its capacity to manufacture advanced technology in other sectors. Solar PV represents an enormous opportunity to apply our skills to a sector that will play a critical role in Australia's clean energy economy.

"A number of Australian companies have already stated their ambitions to develop local manufacturing of solar PV at scale, and 'Silicon 2 Solar' illuminates the policy and investment pathway to make these bold plans a reality," Mr. Miller said.

To read the Roadmap and find out more about ARENA's ultra-low cost solar vision, visit arena.gov.au.

Enabling Ultra Low-Cost Solar

In the eleven years since ARENA was established, the Agency has materially shifted the renewable energy landscape in Australia, from driving down the cost of renewable electricity to commercialising new and novel technologies.

When ARENA funded the first generation of large scale solar farms in 2016, the cost of electricity from solar farms was between AUD \$140 and 178/MWh. Today, as a direct result of that investment and the lessons we learnt, today

ARENA media contacts:

media@arena.gov.au

For more information
arena.gov.au

that price is as low as AUD \$50/MWh.

While solar PV and wind are recognised as the lowest cost form of generation in Australia today, further cost reductions are required to optimise Australia's transition to renewable electricity and to enable future industries such as renewable hydrogen and low emissions metals.

Given Australia's superior solar irradiance resources and world-leading solar PV R&D capabilities, ultra low-cost solar has the potential to unlock significant long term economic potential.

ARENA recently released its white paper on the incredible potential of ultra low-cost solar for Australia and the world. At the forefront of the white paper is ARENA's 30-30-30 vision for ultra low-cost solar in Australia, which represents 30 per cent solar module efficiency and an installed cost of 30 cents per watt by 2030.

ARENA media contacts:
media@arena.gov.au

**For more
information**
arena.gov.au