

Australia Leads the World in PV Installation Rate

The APVI (Australian Photovoltaics Institute) has released the “PV in Australia” report for 2021, with comprehensive analysis showing Australia maintains a leadership position in solar deployment and integration. Impressive growth saw the installed capacity at the end of 2021 reaching 26 GW, meaning Australia reached a world leading installation rate of over 1 kW of solar per person. Ongoing installations means, by mid-2022, we have at least 27GW installed.

The Australian PV market grew in both utility scale and rooftop installs, with a new benchmark of 4.9 GW of new solar registered over the calendar year 2021. Additional annual rooftop installs on residential, commercial, and industrial roofs exceeded 3 GW, with 1.7 GW on residential roofs and 1.3 GW on commercial and industrial roofs. New centralised, utility scale solar connections remain stable at around 1.7 GW annual installs, off a high of 2.4 GW in 2019.

Professor Renate Egan, APVI Secretary and co-author of the report notes “Australia retains its place in the top ten markets for new solar installs, and total solar installations. A remarkable outcome for a country of 25 million people. We’ve seen the number of Australian homes powered by the sun continue to grow. And in 2021 we have seen ongoing growth in the commercial scale solar market – where businesses are increasingly seeing the benefit of the lower cost of power from rooftop solar PV”

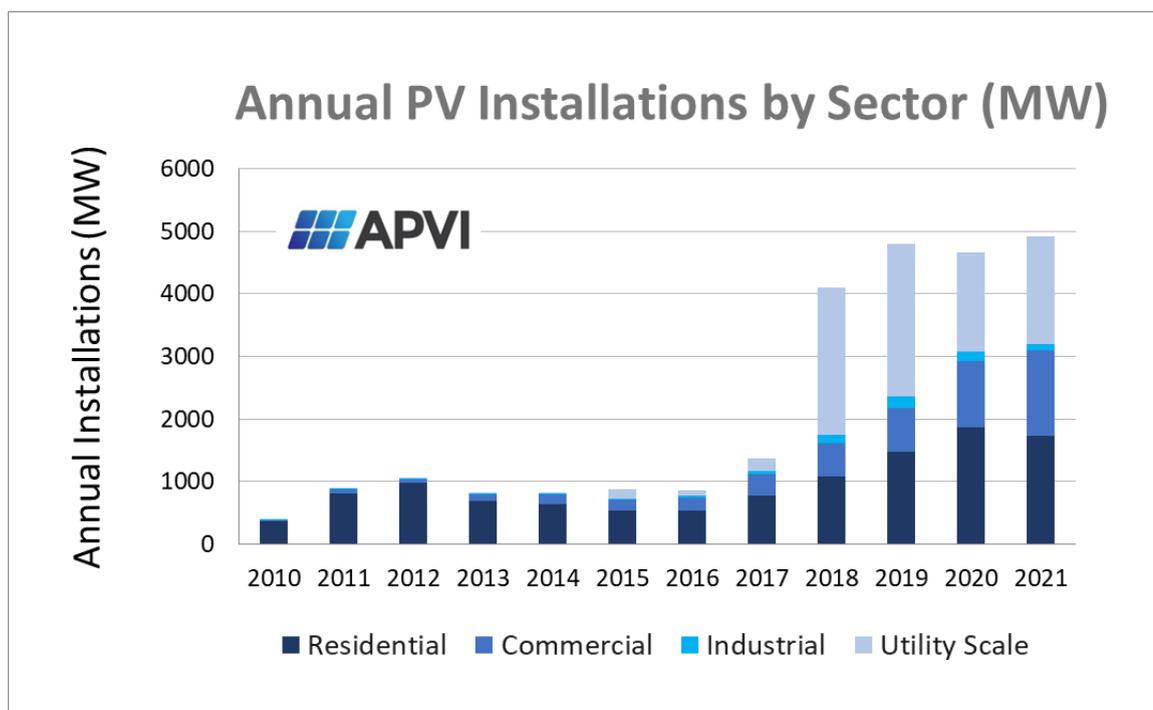


Figure 1. Annual PV installations by sector showing 4.9GW installed in 2021

Fun Facts

- With 16.5 GW on rooftops, Australia has seen a greater than ten-fold increase over ten years, from a total installed capacity of 1.3 GW in 2011.
- The total installed capacity across all sectors has more than doubled to 26 GW in three years from 11.5 GW in 2018.
- More solar was installed in the single year 2021 (4.9 GW) than the sum of all total installed to the end of 2014 (4.1 GW).

A Unique Market

Australia is different to most world markets as it has been dominated by rooftop PV. This demand for rooftop solar PV has kept Australia in the top ten world markets for photovoltaics by annual installs and total installed capacity for over ten years, a remarkable outcome for a country of only 26 million people.

Technology and manufacturing improvements led to a steep drop in prices between 2007 and 2013. Prices then continued to drop, but less dramatically. In 2021, however, compounding factors of supply chain challenges associated with COVID-19 and growing demand has led to the first significant price increase in years. The evidence is that the situation will not improve over 2022. Despite this, demand remained high over 2021 and remains strong into 2022.

At the end of 2021, Australia saw:

- The total number of rooftop installations exceed 3 million. This means over 33% of freestanding households across the nation are now powered with a PV system.
- In the states of Queensland and South Australia, achieved an average of close to 40% of free-standing homes being powered by solar. A significant number of localities now have densities of rooftop solar over 50%.
- The average size of rooftop installation (<100kW) was 8.8kW, up from 8.0kW in 2020.

PV in the Economy

Solar accounts for 25,370 full time equivalent jobs in Australia. Indirect employment would include jobs related within consultancies, industry associations, government and electricity utilities and would potentially double these numbers.

Research and development are well supported in Australia, with close to 250 roles in solar research and over 300 students in higher education research in solar energy. The significant R&D budget is supported principally by the national funded Australian Renewable Energy Agency (ARENA).

The PV in Australia report is part of Australia's contribution to International Energy Agency analysis and outlines key milestones for Solar in Australia. The participation in this program and the vital international connections it brings, is also supported by ARENA.

The total value of solar businesses in 2021 in Australia is estimated at over AUD \$7 billion.

Prof Egan continues, “Australia has a strong solar PV economy, creating jobs and delivering lower energy prices. This has turned out to be a significant asset as we see energy costs escalate where they are reliant on international pricing for coal and gas. The solar and wind resource has zero supply costs, and this doesn’t change as a result of geo-politics.”

Future Prospects

Building off a strong base of installed solar, and with a change in government in mid-2022 leading to stronger and more ambitious commitments to net-zero emissions, Australia is likely to see ongoing growth in the solar PV market. There are well established plans and commitments to invest in adapting the electricity system to meet increasing solar deployment at utility scale, through enhancing transmission, and to manage the significant decentralised generation investment.

The ongoing investment in renewables will present market and engineering challenges that will need to be met by policy and regulatory change including by a redesign of tariffs to incentivise use of low-cost, low-emissions power, by investments in storage and investments in transmission and distribution.

Technology is moving faster than policy and regulation and to maintain the rapid pace of renewable energy deployment, Australia needs to support national electricity market reforms and provide policy certainty to support the needed electricity infrastructure investments and additional electricity transmission, energy storage and demand response mechanisms.

The latest stats are available at <https://pv-map.apvi.org.au/analyses>.

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[National Survey Report of PV Power Applications in Australia, 2021](#)

Main Content: RJ Egan, L Koschier

Find the report on the APVI website [HERE](#)

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About the APVI

The Australian Photovoltaics Institute is a not-for-profit, member-based organisation which focuses on data analysis, independent and balanced information, and collaborative research. Our objective is to support the increased development and use of PV via research, analysis, and information.

The APVI promotes solar through its live solar mapping platform [<http://pv-map.apvi.org.au>], the national solar research conference and Australia's participation in two International Energy Agency (IEA) programs – PVPS (Photovoltaic Power Systems) for solar photovoltaics and SHC (Solar Heating and Cooling), concerned with new solar thermal products and services.

www.apvi.org.au