

Powering a sporting nation

Rooftop solar potential of Australian soccer, AFL and cricket stadia 



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Key findings

This report summarises the key findings of research by the University of New South Wales (UNSW) and the Australian Photovoltaic Institute (APVI) into the rooftop solar potential of Australian rules football, cricket and soccer facilities.

- The analysis identified the potential to generate an estimated **20,000 megawatt-hours (MWh)*** of clean energy by installing solar panels on the roof areas of state and league stadia and headquarters.
- This would be enough energy to power **2,890 average households** and avoid **310 kilotonnes** of CO₂ equivalent over 20 years.
- Installing solar panels on cricket, soccer and Australian Football League (AFL) stadiums and headquarters across the country could generate an estimated **92 job-years**, at an approximate cost of **\$16m**.
- In the long term, by going solar the sports could save a combined total of approximately **\$3.7m annually**.
- A high-level assessment of regional and community clubs across the sports suggests they could support solar generation of **100,000 MWh** each year.

As some stadia are used for multiple sports, combined figures are not a sum of individual sport figures listed on page 4.

*One megawatt-hour is between 10% and 20% of the energy used by a typical Australian household each year.

Summary

Research by UNSW and APVI shows there is a lead role for AFL, cricket and soccer clubs, associations and national governing organisations to play in mitigating the impacts of climate change in Australia.

Sports people are at increasing risk from the impacts of climate change. Rising temperatures and more frequent extreme weather events are increasingly disrupting games and causing health issues for players and spectators – from bushfire smoke inhalation to heat stress.

At the same time, sport has an important role to play in helping Australia to cut damaging pollution by moving away from fossil fuels to clean energy. Together, the rooftops of AFL clubs, national and state soccer federations and administrative facilities, and the major cricket stadium in each state could host more than 77,000 m² of solar panels, generating more than 20,000 megawatt-hour (MWh) of energy annually – or enough to power around 2,900 households.

In the long term, by going solar these sports could save a combined total of approximately \$3.7m annually.

Fulfilling this potential would lead to a range of benefits – creating approximately 90 job-years in solar sales and installation, reducing long-term energy costs for clubs and, crucially, mitigating the impacts of climate change already affecting the sports.

A high-level assessment of regional and community clubs across the three sports suggests there may be up to a further 400,000 m² of viable roof area on club facilities that are not yet being used to create clean energy. This could support solar generation of 100,000 MWh each year, although more detailed analysis is needed.

Beyond the direct benefits of installing solar, sports organisations can contribute to broader action on climate change by setting a positive example for the millions of people who participate in sports across the country.

The Australian Football League, Cricket Australia and the Football Federation of Australia have an opportunity to become leaders of climate positive action that creates clean energy, jobs and reduces greenhouse gas pollution.

In the long term, by going solar these sports could **save a combined total of approximately \$3.7m annually** 🌱

Energy and job potential

Breakdown by sport

Across three reports, UNSW and APVI looked at the solar potential of –

- the AFL headquarters and home grounds, training and administrative centres of individual AFL teams
- the largest cricket stadium in each state and headquarters for state cricket federations
- national and state football federation headquarters.

For links to the original reports, see page 7.

Potential solar capacity

This table summarises the estimated solar potential of state and regional AFL, soccer and cricket associations.

	State / League	Regional & community
AFL	League: 11 MW	~15.5 MW
Cricket	State: 4.8 MW	~46 MW
Soccer	State: 1.9 MW	~21 MW

Job potential

Jobs created in Australia through solar deployment are predominantly in sales and installation, at an estimated 5.8 job-years (assumed equivalent to 9,744 job-hours)¹ per megawatt of commercial solar installed.

	State / League	Regional & community
AFL	60	90
Cricket	28	267
Soccer	11	122

Reducing carbon emissions

The table below shows the estimated potential carbon emissions avoided (over 20 years) by installing solar. The amount of fossil fuel generation in the mix varies by state and territory so this is a high-level estimate.

	State / League	Regional & community
AFL	218 kilotonnes	290 kilotonnes
Cricket	83 kilotonnes	860 kilotonnes
Soccer	39 kilotonnes	390 kilotonnes

¹ J. Rutovitz, C. Briggs, E. Dominish, and K. Nagrath, Renewable Energy Employment in Australia: Methodology, Clean Energy Council, Institute for Sustainable Futures UTS Sydney, 2020

Biggest solar opportunities

Australian rules football

- **Metricon Stadium:**
1647 kW of clean energy potential
The Gold Coast Suns AFL team play their home matches at the Metricon Stadium (also called the Carrara Stadium), with their training and administrative headquarters located in the nearby Gold Coast Sports and Leisure Centre.

Cricket

- **Sydney Cricket Ground (SCG):**
1004 kW of clean energy potential
The SCG in Moore Park is the home ground for various sports teams including the New South Wales Blues and the Sydney Sixers cricket teams, as well as Australian football leagues' Sydney Swans.

Soccer

- **Football NT:**
406 kW of clean energy potential
The headquarters of Football Northern Territory (FNT) is located in the "Italian Club" on the eastern side of the Marrara Sporting Precinct. Larrakia Park Stadium is also located within the precinct, at the north-western side, with two football pitches and a 1,120-seater grandstand.

Frontrunners

- Richmond Football Club is the first AFL club to join the United Nation's Sports for Climate Action Initiative.²
- Richmond, St Kilda and North Melbourne football clubs have all installed substantial 100 kW solar energy systems.
- The Melbourne Cricket Ground has installed a 99.4 kW solar energy system³ to power its water recycling facility.

² <https://www.richmondfc.com.au/news/243150/richmond-partner-sports-for-climate-action-initiative>

³ https://www.linkedin.com/posts/cherry-energy-solutions_power-play-mcg-goes-solar-in-climate-change-activity-6746916066280271872-TF18

Community leaders

- Willoughby Junior AFL Club in Sydney fields teams for boys and girls aged 5-18 years.

Club President Brendan O'Brien says: "The Willoughby Wildcats would love to get support from the AFL to find ways to have solar installed by council and reduce our costs. The more money we can save on energy, the more resources we'll have to continue our push for this great game to be the premier sport in Sydney."

- Millewa Cricket Club (MCC) now occupies one of a cluster of five ovals in Red Cliffs, a small town of 5,000 people in north-west Victoria. MCC members are keen to get solar panels on their clubrooms and electric pitch roller. These actions would save the club money and avoid about 612 tonnes of CO₂ emissions over a 20-year period (the equivalent of planting an estimated 10,210 trees).

- Michael Bailey is the administrator of Brisbane's Oxley United Football Club. Michael says:

"It seems clear that many individuals and smaller organisations feel that their commitment to an energy transition is no value because of their size. Yet, if we were to see each small contribution as being multiplied many times over, then that contribution becomes much more significant and of real value."

Here at Oxley United FC we see our decision to install solar panels on our clubhouse roof as not only our practical commitment to a clean energy future, but also reinforces the view that we can all play our part, however small. We share our ground with a cricket club and that partnership makes me question what could be achieved if our respective national federations, Football Australia, Cricket Australia, the AFL and so on were to work together to lobby government to assist sporting clubs all over Australia to meet their power requirements with a clean energy source. Think of the cost savings to clubs and, more importantly, the major benefit to our environment."



View the **full reports**

Australian rules football

Cricket

Soccer

Authors

The School of Photovoltaic and Renewable Energy Engineering (SPREE) at the University of New South Wales (UNSW) has an international reputation for solar energy research. The SunSPoT Solar Potential Tool, which is the technical basis for the solar potential estimates in this report and a series of Solar Potential assessments published by the Australian PV Institute (APVI) for major Australian Cities, was developed and validated at SPREE for APVI to help inform and facilitate ongoing investment in solar photovoltaic (PV) systems in Australia. This work is part of a broader renewable energy systems research program at SPREE, including renewable energy resource assessment, performance analysis, modelling and mapping, renewable and distributed energy integration, and building energy modelling.

The Australian PV Institute (APVI) is a not-for-profit, member-based organisation providing data analysis, reliable and objective information, and collaborative research to support the uptake of solar photovoltaics and related technologies. APVI promotes PV through its live solar mapping platform (<http://pv-map.apvi.org.au>), organises Australia's national solar research conference, and coordinates Australia's participation in two International Energy Agency programs: Photovoltaic Power Systems and Solar Heating and Cooling.

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