

CEFC finance accelerates Australia's solar future

More than \$1 billion of solar projects in the CEFC pipeline

The Clean Energy Finance Corporation (CEFC) is helping accelerate investments to increase the Australian solar industry's capacity to meet growing economy-wide demand for solar technologies to reduce energy costs.

Solar technologies make up just over one quarter of the CEFC's total contracted investments.

The CEFC is considering projects for over \$500 million in CEFC finance for solar projects valued over \$1 billion.

AUSTRALIA AND SOLAR

One in seven Australian households benefit from solar energy. By 2030, Australia is expected to have around 23GW of large, commercial and residential solar PV installed, according to Bloomberg New Energy Finance (BNEF). That includes an expected 5 million commercial and residential systems, with an increasing proportion of solar installations in the commercial sector.

The average installation size for residential solar PV in Australia is now 4kW, up from 2kW in 2010. Typically, about one third of the power generated by a 4kW household system is used by the household, with the remainder exported to the grid. As energy storage increases, residential systems will be able to use up to 80 per cent of the solar energy they produce.



Image courtesy of Epuron

Increasing commercial interest

While installation of solar PV in the commercial sector has lagged behind the residential sector in Australia, the opportunities for commercial solar are significant. Most commercial and industrial demand profiles match solar generation profiles, which peak during the day and taper off at night. This is driving increasing interest in the commercial sector.

Market analyst Green Energy Markets estimates commercial owners now account for 23 per cent of new solar PV installations, up from 5 per cent three years ago, with continued growth and expansion in the sector expected.



Image courtesy of the Clean Energy Council

Australia's major utilities and energy retailers, including AGL, Origin and Energy Australia, are expanding the range of solar options for their customers, while major corporations are also recognising the business case for solar and increasing uptake:

- Swedish furniture giant IKEA is installing 3.9MW of rooftop solar across its Australian east coast stores and warehouses
- Real estate investment trust GPT Group is installing solar on commercial buildings in Sydney and a 1.2MW system on the Casuarina Shopping Centre in Darwin
- The Australand Property Group is installing solar on suitable industrial properties
- In Canberra, a 100kW system was installed earlier this year on an office building in the heart of the Parliamentary Triangle, supplying up to 40 per cent of the building's energy during the week
- A range of shopping centres, industry buildings, small retail businesses, warehouses and manufacturers have commercial installations planned in every state.

Local government interest

Local governments across Australia are also contributing to the uptake of solar PV to benefit residential and commercial operators.

The CEFC's solar finance programs are designed to help this industry grow for the future



In April 2015, the Southern Sydney Region of Councils launched an initiative to help an additional 3,000 households and small businesses install solar PV or solar hot water across the Ashfield, Bankstown, Canterbury, Canada Bay, Kogarah, Leichhardt, Marrickville and Rockdale councils.

As part of the program, the councils are working with Energy Matters, which has previously delivered bulk buy solar programs in several Melbourne metropolitan council areas. This included the award-winning Solar \$aver program, an initiative saving pensioners in the Darebin City Council area on their power bills through installing solar at no up-front cost.

Solar with storage

The potential for solar in Australia is expected to be enhanced with the development of affordable battery technology. The payback period for a small-scale solar plus storage system is currently around 20 years, but is expected to halve by 2020.

Storage technology will give solar users greater flexibility and control over their grid energy use and costs, allowing them to use excess solar generated during the day, at night. The shift to storage is part of a broader shift towards the connected home or business, with proactive energy consumption and management, networked to allow both remote and automatic management.



Image courtesy of Epuron

UTILITY-SCALE SOLAR

Important milestones in utility-scale solar are underway. The biggest solar farm in the Southern hemisphere, the 102MW Nyngan solar plant in New South Wales, and the 20MW Royalla Solar Farm, south of Canberra, will export power to the grid this year. The 53MW Broken Hill solar plant is expected to come online in 2015 and by 2016, the 56MW Moree Solar Farm, to which the CEFC has committed finance, will add further solar capacity. Once constructed, these four plants are expected to generate more than 500,000 MWh of electricity annually, sufficient to power 70,000 households.

The Clean Energy Council predicts that shrinking costs and rapidly increasing interest in solar PV will result in further solar capacity in Australia in the next few years. Worldwide, utility-scale solar generation is growing rapidly, reaching a capacity of 35.9GW at the end of 2014. New plants commissioned in 2014 produced 14.2GW, equal to the entire installed capacity up to the end of 2012. Solar PV generation is fairly evenly split between North America, Europe and Asia.

In Australia, important milestones in utility-scale solar are underway

SMALL-SCALE SOLAR

The CEFC is working to accelerate the uptake of both small-scale and commercial-scale solar technologies, working with financiers, utilities and solar providers.

The CEFC is setting precedents in financing solar in Australia with investments that broaden and deepen local skills within the sector, while supporting the adoption of commercially-proven technologies and internationally-proven finance models.

This investment by the CEFC in solar programs is helping to build a domestic industry skills base and demonstrate the potential for utility and large-scale solar to provide solutions to energy challenges in remote locations. The CEFC is also looking to invest in projects that support the use of solar as an alternative to diesel in remote communities.

The CEFC's small-scale solar investments are developing programs with utilities and solar providers to expand the availability of affordable and easily accessible solar PV options, including leasing and Power Purchase Agreement (PPA) programs for the residential and commercial sectors. The CEFC is also considering proposals for investments to support the uptake of storage.

Reducing consumer energy costs

Through programs that increase the accessibility of solar for commercial and household consumers, the CEFC is helping customers get access to solar energy and reduce their grid energy costs.

Overcoming investment barriers

While the cost of buying a solar PV system is now less than a quarter of the price a decade ago, the two main factors limiting wider residential and small-scale commercial solar uptake are financing the installation costs, and confidence in the suitability of installed technology.



Leasing or Power Purchase Agreement (PPA) models have been used to help overcome these barriers in California and elsewhere in the US.

Under the PPA model, customers permit a third party solar provider to install a high quality PV system on their roof. The customer purchases power generated by the panels at an agreed rate, with the solar provider responsible for system maintenance over the life of the contract. Effectively, the customer is purchasing solar electricity rather than solar panels.

As well as providing access to solar energy, PPAs can help reduce electricity costs for large energy customers in industry and in the property, retail, education, healthcare, retirement and aged care sectors. PPAs can also improve energy supply security in remote and regional areas by supplementing diesel or gas-fired electricity.

“The PPA model could enable Australian businesses to benefit from solar, reducing energy costs, increasing productivity and lowering carbon emissions.”

Oliver Yates

CEO, Clean Energy Finance Corporation

CEFC SOLAR FINANCING

The CEFC is working across the economy providing finance to catalyse investment in residential, commercial and utility-scale solar.

ET Solar PPAs

The CEFC has committed up to \$20 million in finance for the rollout of a PPA program by global energy solutions provider ET Solar which owns, operates and maintains systems to suit the energy requirements of its commercial customers.

ET Solar’s solar panel carport structures take advantage of large parking areas, generating power for commercial operators while providing some shelter for parked vehicles.

Learn more at: www.cleanenergyfinancecorp.com.au/media/107267/cefc-pdf-factsheet-etsolar_lr.pdf



SunEdison

The CEFC has committed up to \$70 million of senior debt finance to leading US vertically integrated solar company SunEdison for its entry into the Australian market.

SunEdison is offering a program of leasing and PPA products aimed at commercial and residential customers in rental or multi-occupancy buildings.

As part of its CEFC-financed program, SunEdison is offering no-deposit solar installations to eligible customers through its Australian company Energy Matters.

Learn more at: www.energymatters.com.au

The Energy Efficient Loan with CBA

The Energy Efficient Loan (EEL) is a CEFC and Commonwealth Bank initiative. The EEL provides a pool of up to \$200 million to finance technologies that improve energy productivity, including solar PV. Projects financed under the EEL include:

- 100kW of solar and LED lighting for leading Sydney dealership Col Crawford Lifestyle Cars, that is expected to halve its electricity use
- 100kW of rooftop solar for major fruit and vegetable wholesaler Nu Fruit Pty Ltd, that is expected to meet over 10 per cent of its electricity needs at its Wangaratta operations
- 85kW installed solar by one of Australia's largest registered clubs, Bankstown Sports Club
- Nearly 170kW solar PV installed by WA based sustainable energy firm, Enigin, for Corpus Christi College in Perth, that is expected to meet about 30 per cent of its electricity needs.

Learn more from local Commonwealth Bank representatives, or by phoning 1800 277 387.

Moree Solar Farm

The CEFC is providing about \$47 million towards the 56MW Moree Solar Farm, under construction near Moree in northern New South Wales. When completed, it is expected to generate enough power for about 15,000 homes and abate more than 95,000 tonnes of carbon emissions.



The Moree Solar Farm uses single-axis tracking technology so its 250,000 solar PV panels can tilt to face the sun as the earth rotates. The technology has the potential to produce 30 per cent more energy than a farm using fixed-position panels, and to capture a higher volume of peak priced electricity. The project is also receiving a \$101.7 million Australian Government grant through the Australian Renewable Energy Agency (ARENA).

Learn more at: www.moreesolarfarm.com.au

Uterne Solar Power Station

CEFC finance of \$13 million is enabling leading privately-owned Australian renewable energy company Epuron to expand its Uterne solar power plant at Alice Springs in the Northern Territory. The expansion will effectively quadruple its capacity to over 4MW, helping the remote town reduce its dependence on gas and diesel-fired generation.



Image courtesy of Epuron

“Expanding our Uterne facility to take advantage of both the abundant solar energy in the Northern Territory and our existing infrastructure makes good business sense.”

Andrew Durran

Executive Director and Co-Founder, Epuron

Tindo Solar PPA

The CEFC has committed \$20 million in finance to Australian solar PV panel manufacturer Tindo Solar to accelerate the rollout of a PPA program to residents, as well as small to medium-sized businesses and government bodies.

Learn more at: www.tindosolar.com.au

Sundrop Farms

The Sundrop Farms solar thermal powered greenhouse development in Port Augusta, South Australia, demonstrates how sustainable horticulture practices can address growing food security, water and clean energy challenges.

The CEFC provided a cornerstone finance commitment that enabled Sundrop Farms to progress plans to build a 20-hectare facility that

uses solar technology to desalinate seawater for irrigation, as well as regulate the temperature of greenhouses that will produce over 15,000 tonnes of tomatoes annually for markets across Australia.

The CEFC's early involvement in the project enabled Sundrop Farms to secure private sector growth capital from global investment firm Kohlberg Kravis Roberts (KKR).

Learn more about CEFC project finance at:

www.cleanenergyfinancecorp.com.au/what-we-do/cefc-financing-types.aspx

The Clean Energy Finance Corporation (CEFC) invests using a commercial approach to overcome market barriers and mobilise investment in renewable energy, energy efficiency and low emissions technologies.

As at 30 June 2014, the CEFC had contracted investments of over \$900 million in projects with a total value of over \$3 billion. The CEFC invests for a positive financial return, with its more than 40 direct investments and 25 projects co-financed under aggregation programs expected to achieve a positive net benefit for the taxpayer. These projects help to improve energy productivity for businesses across Australia, develop local industries and generate new employment opportunities.

The CEFC operates under the *Clean Energy Finance Corporation Act 2012*. More information is available on our website www.cleanenergyfinancecorp.com.au

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