

Australia's

# ROOFTOP REAL ESTATE

Part one

Australia is a world-leader in the residential uptake of solar PV—but across the country, we've only just begun tapping into the extraordinary potential for rooftop solar.

Funded by



SolarCitizens



# CONTENTS

<b>Introduction</b>	3
<b>Where We Are At —A Snapshot of Solar in Australia</b>	4
<b>Where We Can Go —Opportunities to Grow</b>	6
<b>Case Study: Maria</b>	7
<b>How We Get There—Solutions to Unlock Australia’s Residential PV Potential</b>	Back Cover
<b>Government Solar Programs Help Drive Growth and Slash Bills</b>	Back Cover
<b>Solar Citizens’ Policy Recommendations</b>	Back Cover

## INTRODUCTION

**Part one of the Rooftop Real Estate report**, commissioned by Solar Citizens and written by some of the brightest minds at the the University of NSW and Australian PV Institute, shines the light on the exciting progress that Australian households have made towards repowering our nation with clean, affordable solar.



More importantly, the analysis found that Australia has the rooftop potential to increase residential solar capacity to a staggering 43GW-61GW—well above the approximate 6GW that's currently installed. **That's right: with so many sunny rooftops on Australia's housing stock, we have utilised less than a sixth of our available residential rooftop real estate.** Considering Australia's largest coal-fired power station is 2.88GW, the findings of this report demonstrate the capacity that rooftop solar has to transform our energy system.

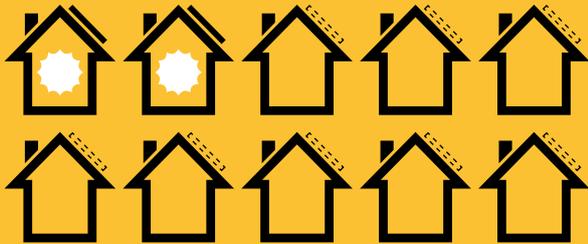
This summary, written by Solar Citizens, represents the key findings of part one of the Rooftop Real Estate report and includes recommendations of how all levels of government can assist more Australian households take back control of their electricity bills with solar PV. In particular, Solar Citizens is calling on governments to break down the barriers halting renters, people living in apartments and low-income households from sharing in the benefits of distributed solar.

# WHERE WE ARE AT —A SNAPSHOT OF SOLAR IN AUSTRALIA

**Australian households are leading the world in the uptake of residential solar.** Proactive government schemes, such as the Small-scale Renewable Energy Scheme and premium feed-in tariffs, helped kick-start the rapid expansion of rooftop PV across the country.

In fact, residential solar PV accounts for an impressive 61% of the total nationwide installed PV capacity. Including residential, commercial and large-scale PV, there is now more than 10GW of solar PV capacity in Australia.

**21.6%** of all stand-alone houses in Australia now have a PV system installed.



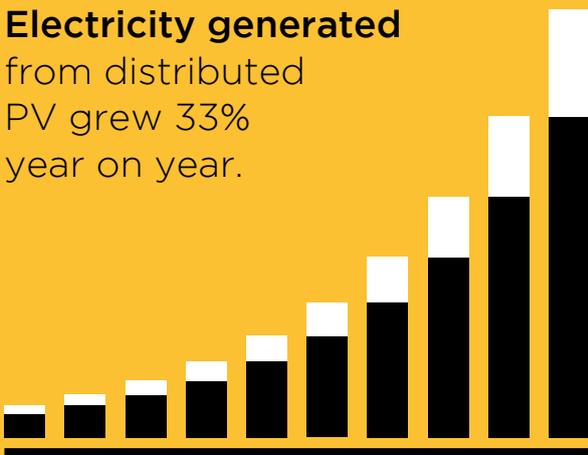
**Residential PV** accounts for 61% of installed PV capacity in Australia.



**In the year to August 2018**, distributed solar generated approximately 3% of Australia's total electricity consumption.



**Electricity generated from distributed PV** grew 33% year on year.



**Distributed PV** saved the equivalent of **7.4 million tonnes of carbon dioxide** from being produced by Australia's electricity sector in just one year.



**Australian households and businesses continue to embrace the rooftop revolution** at an astounding rate to reduce their bills and protect themselves from future electricity price rises, increase self-sufficiency, and do their part to reduce pollution.

Currently, 21.6% of all houses—excluding apartments—in Australia have solar pumping out clean energy straight from the rooftop. Households in Queensland and South Australia in particular are leading the charge, each with a residential solar uptake that’s greater than 30%.

LOCAL GOVERNMENT AREA	STATE	PERCENTAGE OF HOUSEHOLDS WITH SOLAR PV
Mallala	SA	47.4%
Somerset	QLD	45.1%
Narrabri	NSW	44.8%
Lockyer Valley	QLD	42.9%
Redland	QLD	42.6%
Light	SA	42.5%
Alexandrina	SA	42.3%
Scenic Rim	QLD	42.1%
Orroroo/Carrieton	SA	41.9%
Barossa	SA	41.8%

However, with distributed solar only providing approximately 3% of Australia’s total electricity consumption, there’s still plenty of potential to expand residential solar PV uptake, and in doing so, assist more households take back control of their electricity bills.



# WHERE WE CAN GO — OPPORTUNITIES TO GROW

There is between **43GW to 61GW** of potential rooftop solar capacity on Australia's houses.



↑ Currently, **less than a sixth** of this potential is being utilised.

This is because close to **80%** of stand-alone houses are yet to get PV.



**There are barriers that block renters**, people living in apartments and low-income households from accessing the cost and environmental benefits of rooftop PV. For Australia to make the most of the available rooftop solar potential, these barriers need to be broken down.

The report estimates that there is a staggering 43GW–61GW of potential solar capacity on the sunny rooftops of Australia’s housing stock. In comparison, Australia’s largest coal-fired power station is only 2.88GW! The lion’s share of this PV potential—93.5%—is on houses, but up to 4GW is on apartment buildings. Overall, less than a sixth of Australia’s residential rooftop PV potential is being utilised to produce clean, affordable energy.

Of course, it is vulnerable electricity consumers who have the most to gain from accessing solar, which can significantly reduce bills, and for the most common system size, typically pay for itself within 5 years. The report modelled solar savings for 300 households in the Ausgrid area and found that the most popular system size of 4–6kW would reduce electricity bills on average by \$900–\$1200 per year.

The report also analysed in detail the electricity savings that different households would experience with solar depending on dwelling type, location, system size, PV position, electricity demand habits, and retailer rates. All of the seven case study examples modelled in detail had a payback period of 8 years or below, which is much less than the expected 30-year lifetime of a residential solar system. These findings demonstrate that across the board solar is a worthy investment for Australian households.

#### CASE STUDY

**Maria** lives with her husband in Sydney and would like to get solar and a battery to take back control from the power companies.



“ I understand solar is quite expensive and I’m a 69 year-old pensioner,” said Maria.

“ In winter I try to be very, very careful. Last year I didn’t turn my heater on because I was so scared that I would get a big shock when the bill arrived, so I used hot water bottles instead.”

“ Affordable panels that I could pay off would make a big difference. I would also definitely be interested in a community solar garden—that would be fantastic. There’s just no need for our power bills to be so high.”



## HOW WE GET THERE —SOLUTIONS TO UNLOCK AUSTRALIA'S RESIDENTIAL PV POTENTIAL

Across Australia, various government programs are helping more households and businesses relieve their electricity bill stress with solar PV. From Victoria's Solar Homes program to Queensland's initiative to provide no-interest loans for houses wanting to go solar, there is work being done to keep rolling out rooftop solar. But with so much sunny rooftop real estate left untapped, there are abundant opportunities left for all levels of government to smash through the roadblocks that are stopping households from producing their own sun-power.

## GOVERNMENT SOLAR PROGRAMS HELP DRIVE GROWTH AND SLASH BILLS

The report found that the fastest growth in PV penetration is happening in Brewarrina, NSW. The growth can be attributed to the PV and Air Conditioning program implemented by the NSW Government Aboriginal Housing Office. This program aims to provide air conditioning to improve thermal comfort and reduce related health risks in the challenging Western NSW climate, without increasing already high and often unaffordable electricity bills. Analysis of participants' bills in Dubbo revealed solar is creating average annual savings of \$590 off electricity bills.

### SOLAR CITIZENS' POLICY RECOMMENDATIONS:

- **Directly fund the installation of solar** on public and community housing stock.
- **Provide rebates as well as no-interest loans** to support low-income and vulnerable households access solar.
- **Implement schemes that incentivise solar** on rental properties and enable landlords and tenants to split the benefits.
- **Offer small grants, rebates, low-interest or no-interest loans** for body corporates to allow for the installation of solar PV on apartment blocks.
- **Reduce unnecessary administrative and regulatory barriers** to apartment residents sharing solar energy through embedded networks.
- **Reform electricity network tariffs** to enable households to sell their excess solar generation to their neighbours.
- **Support solar gardens** for people whose rooftops can't host a panel itself.