

# ROOFTOP RECOVERY

Economy wide benefits of rooftop solar



**SolarCitizens**





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# INTRODUCTION

**The Federal Government and most States and Territories have existing programs to assist with the roll out of rooftop solar and batteries, with many of these programs still in the trial phase.**

Existing programs are often easy to scale up, as the program design and risk analysis have already been completed.

This report describes the different programs in each state, and makes recommendations as to which can be urgently expanded to create jobs and assist with meeting the energy needs of Australia's most vulnerable households.



# ECONOMY WIDE BENEFITS OF ROOFTOP SOLAR

When considering economic stimulus measures, rooftop solar presents a wide range of economic and employment benefits, beyond the lower power bills experienced by people and businesses fitted with solar panels. Investing in measures that encourage the uptake of rooftop solar therefore makes good economic sense.

## LOWER POWER PRICES



The Victoria Energy Policy Centre analysed 48,677 Victorian power bills and found that even the relatively low penetration of rooftop solar in that State

led to a saving of \$6.4/Mwh, or 8% off the wholesale price of electricity in 2019.<sup>1</sup>

Business and community groups last year stated that high power prices were impacting Australian businesses forcing Australian manufacturers offshore, leading to the loss of jobs,<sup>2</sup> making a case that reducing power prices has flow on economic benefits

## HOUSEHOLD BENEFITS



Last year, Solar Citizens annual survey found that households with solar reported a 50-70% drop in their energy bills, representing hundreds of dollars

per year. In their principles for the development of economic stimulus, The Australia Institute recommends measures that put money into the hands of those most likely to spend it: households<sup>4</sup>, and particularly those with lower incomes. A report commissioned by Solar Citizens in 2018 found that rooftop solar was most prevalent on households in low to middle socio-economic postcodes, indicating the cost saving value of household solar.<sup>5</sup> Reducing power bills frees up money from the household budget to spend elsewhere in the economy.

## NETWORK SAVINGS



Energy Networks Australia, the peak body for networks across the country, has estimated that the optimisation of distributed energy such as rooftop

solar could bring down network costs on bills by as much as 30% to 2050.<sup>3</sup> Rooftop solar enables households and businesses to use their power where it is generated, minimising the need for network upgrades.

## A JOB-RICH INDUSTRY



Rooftop solar is the biggest source of renewable energy jobs in Australia, representing 50% of all full-time equivalent positions across the

industry.<sup>6</sup> There is also a diversity of skills and training required for the installation of rooftop solar and batteries. Trade qualified electricians oversee all installation work, and are joined by apprentices, trades assistants and labourers. There are also flow-on jobs in sales and audits of solar systems. Regional areas in particular stand to benefit from rapid job creation through increased uptake of rooftop solar as labour will be sourced locally for local businesses.





# ECONOMY WIDE BENEFITS OF ROOFTOP SOLAR

## SUPPORTING LOCAL MANUFACTURING



Depending on program design, subsidies for rooftop solar and other forms of distributed energy, like batteries, can support local manufacturing. For example, the South Australian Government's battery subsidy has led to German battery manufacturer Sonnen retooling a Holden plant so that it can manufacture household batteries for the local market.

## ADDRESSING CLIMATE CHANGE



The coronavirus crisis has not abated our biggest long-term challenge: climate change. If governments can stimulate the economy and create jobs in a way that also reduces climate change, we really will be *building back better*.



# FEDERAL GOVERNMENT

## #1 SOLAR FOR COMMUNITY ORGANISATIONS

The Federal government should urgently scale up its popular Energy Efficient Communities Program<sup>7</sup> which provides grants of up to \$12,500 to community organisations to fit their buildings with solar panels. As this program is already underway, organisations have already prepared their applications and assessed their own energy use for previous funding rounds.

If the program was to be scaled up by an additional \$100 million dollars, it would deliver up to 8000 new solar systems—assuming no co-contribution from the organisation this would be a 12-13kW system<sup>8</sup>—and could create around 500 jobs around the country. Additionally, it would lower power costs for key community organisations, some of whom are providing key services during the corona crisis, such as Meals on Wheels or Lifeline.

## FEDERAL BATTERY SCHEME #2

This is an opportune time for a national household battery scheme to be established. Batteries help households manage their energy bills, provide grid benefits, and assist with creating space for more renewables in the grid.<sup>9</sup> We support the call by the Clean Energy Council for a national battery scheme, funded either via an upfront rebate or no-interest loans through the Australian Renewable Energy Agency (ARENA) and the Clean Energy Finance Corporation (CEFC).

## #3 FEDERAL PARTNERSHIP WITH THE STATES ON SOCIAL HOUSING

In this report, we make recommendations for States and Territories to equip social housing with solar. We support the call by the Australian Council of Social Service (ACOSS) for the Federal Government to 'provide funds to match state and territory governments to invest in energy efficiency upgrades and solar PV installations for social housing dwellings.' ACOSS recommends that energy efficiency audits be carried out in collaboration with local councils, which may be able to recoup some costs via rates.<sup>10</sup>

## IMPORTANT ROLE FOR ARENA #4

The Australian Renewable Energy Agency (ARENA) could play a key role in coordinating and implementing national stimulus measures. However, ARENA will run out of new project funding in September 2020, and operational funding completely in 2022. Given the importance of ARENA's role, it is vital that the Government consider ARENA for additional core funding in the 2020 Federal Budget. For more information on the campaign to preserve ARENA's funding, please see: [www.solarcitizens.org.au/supercharge\\_arena](http://www.solarcitizens.org.au/supercharge_arena)



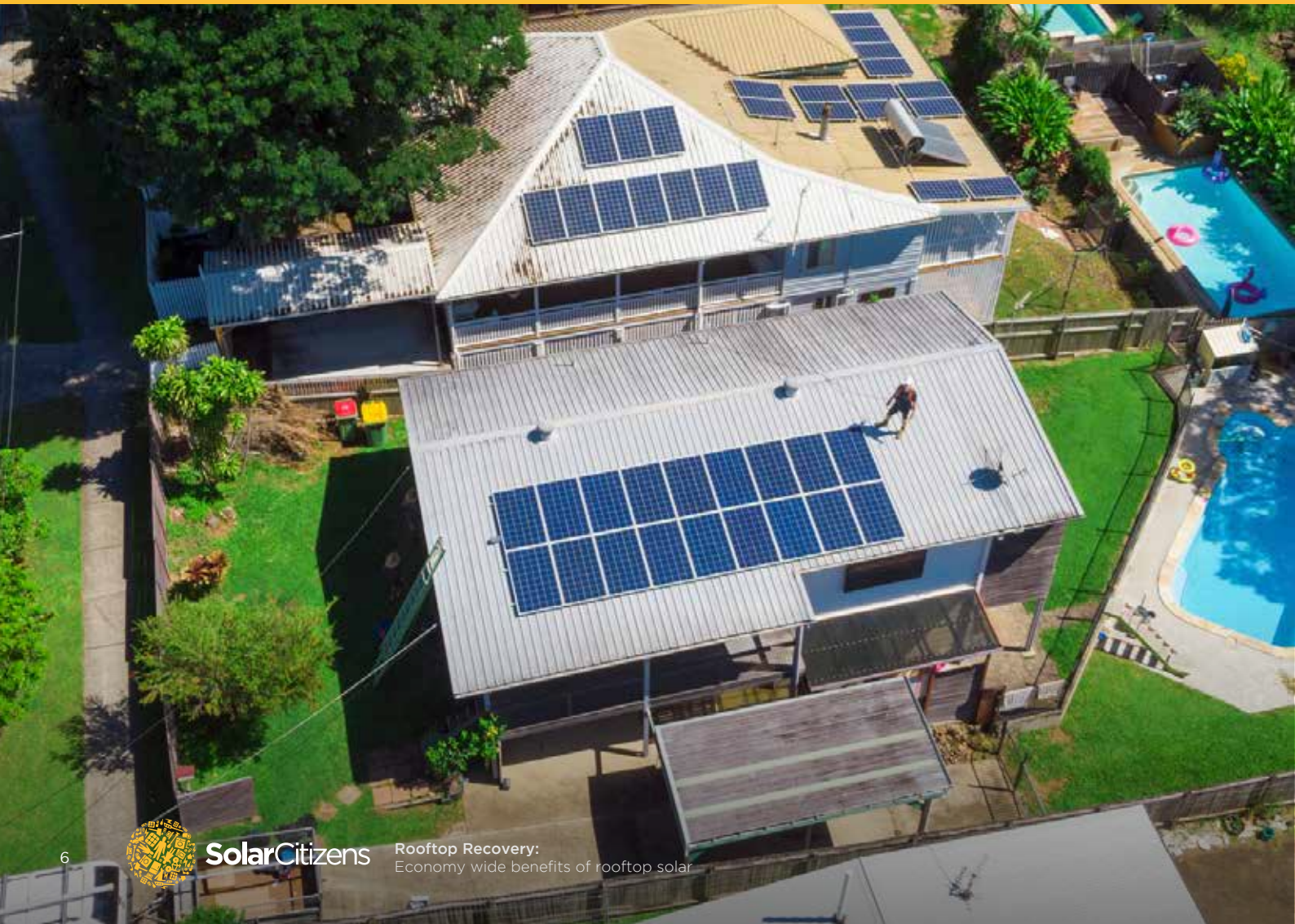


# QUEENSLAND

Queensland has a range of small-scale solar pilot programs that should be upscaled beyond their current size to enable more Queenslanders to reduce their power bills and provide rapid job creation.



The state is also ripe for interventions that would enable the continued uptake of solar and build a resilient energy system, such as community-scale batteries and Virtual Power Plants (VPPs).





# QUEENSLAND

## #1 EXTEND THE SOLAR FOR RENTERS AND ON PUBLIC HOUSING

The current solar for public housing and solar for renters schemes only apply to public housing tenants in Cairns, Rockhampton and Logan, and renters in Bundaberg, Gladstone and Townsville. This should be extended to include public housing tenants and renters throughout Queensland, and the program design revisited to ensure that public housing tenants are able to maximise the benefits of rooftop solar.<sup>11</sup>

According to the Australian Institute of Health and Welfare, Queensland had 71,045 public and social housing households as of 2018.<sup>12</sup> Equipping just one third of the existing public housing stock with an average system size of 5kW would create nearly 600 jobs in the solar industry and add an additional 110MW of clean energy capacity in Queensland.<sup>13</sup> Putting income back into the pockets of low income earners will likely mean more household expenditure, boosting other parts of the economy such as retail and services.

## EXTEND THE NO-INTEREST LOAN SCHEMES FOR SOLAR AND BATTERIES #2

Queensland's highly popular no-interest loan scheme for solar and batteries ended in 2019. This scheme targeted lower income homeowners who had electricity bills of over \$1000 over six months. Monthly repayments were required for a seven year payback period.

\$100 million could purchase 20,000 solar systems and create 500 jobs in Queensland. However, a significant proportion of this spend would be recovered to the State Budget. Repayments during economic recession could be deferred to ensure that households aren't being placed under additional hardship.

## #3 INVEST IN BATTERIES TO ASSIST SOLAR OWNERS FULLY UTILISE THEIR SYSTEMS

Queensland has the highest level of solar penetration of any Australian State, just exceeding South Australia at 35.7%.<sup>14</sup> Subsidising household batteries and investing in community-scale batteries, an option currently pursued in Western Australia, will maximise household solar generation, placing further downward pressure on electricity prices, and allowing for further growth of distributed energy. Community-scale batteries would be relatively simple to implement in regional Queensland where there is only one state-owned retailer. Like South Australia, Queensland could set a target for a certain number of households to be equipped with batteries.

One option for the State Government is to require that anyone receiving a battery subsidy agrees to participate in a Virtual Power Plant (VPP). A VPP connects households with solar and battery storage together to provide the broader grid with power when it makes the most economic sense to do so. In order to participate, solar households consent to have the power stored in their batteries, or generated by their solar panels accessed by the VPP provider.



# NEW SOUTH WALES

At the last NSW State election, held in March 2019, Solar Citizens called for a number of policy measures to support the growth of rooftop solar, including a mandated feed in tariff and a comprehensive solar for renters scheme modelled on the Victorian scheme, with a target of supporting 100,000 renters.<sup>15</sup>



In addition to these policy asks, we recommend the measures suggested below to build on existing programs, and form part of an effective response to the economic downturn caused by COVID-19.





# NEW SOUTH WALES

## #1 ROOFTOP SOLAR FOR PUBLIC HOUSING

Of all the states, NSW has the most public housing, with 156,260 public or social dwellings.<sup>16</sup> If one third of public housing properties were given a 5kW system it would create over 1300 jobs in the solar industry and add an additional 260MW of clean energy capacity in New South Wales.<sup>17</sup> Additionally, equipping these households with batteries that are able to join a Virtual Power Plant (as per below) would maximise the grid and market benefits of these solar systems.

## EXPAND THE BATTERY REBATE BEYOND THE HUNTER VALLEY #2

Currently, NSW has a pilot program for no interest loans for batteries for households in the Hunter Valley area. This trial program should be extended to households throughout New South Wales. In addition to providing bill relief for solar households who can store their power and use it in the evening, batteries also benefit the grid by soaking up solar in the middle of the day.

One option for the NSW Government is to require that anyone receiving a battery subsidy agrees to participate in a Virtual Power Plant (VPP). A VPP connects households with solar and battery storage together to provide the broader grid with power when it makes the most economic sense to do so. In order to participate, solar households consent to have the power stored in their batteries, or generated by their solar panels accessed by the VPP provider.

## #3 REBUILD BUSHFIRE IMPACTED COMMUNITIES WITH MICRO-GRIDS

Many communities in NSW suffered from the horrific bushfires in the summer of 2019-2020. Rebuilding these communities with renewable micro-grids and offgrid or stand-alone power systems (SAPS) would provide regional employment and provide future resilience to extreme weather events.

Micro-grids enable communities to keep the lights on if a network connection to the main grid is severed.<sup>18</sup> For individual properties in isolated areas at the end of long lines, it may be better to take them off grid onto stand alone power systems. Some networks are already trialling this option.

Both micro-grids and SAPS can be powered by solar energy and batteries. These can be on individual properties and privately owned, or larger ones can be collectively owned – for example by community energy groups. Community solar and battery projects allow renewable energy to be shared with households that cannot have their own renewable energy supply.



# WESTERN AUSTRALIA

Although Western Australia is the only state to have a comprehensive Distributed Energy Resources (DER) integration roadmap, it also has no incentives for households and businesses to take up rooftop solar.





# WESTERN AUSTRALIA

## #1 PROVIDE ASSISTANCE FOR HOUSEHOLDS TO GET BATTERIES

**Given the grid challenges faced in Western Australia, the Government should consider a battery rebate scheme similar to that pursued in South Australia or Victoria. This would better enable the continued growth of solar in Western Australia, and enable the State to reach 100% renewable energy faster.**

Similar to South Australia, the WA Government could provide a battery subsidy that is contingent on having the battery capable of connecting to a Virtual Power Plant (VPP). A VPP connects households with solar and battery storage together to provide the broader grid with power when it makes the most economic sense to do so. In order to participate, solar households consent to have the power stored in their batteries, or generated by their solar panels accessed by the VPP operator.

While community-scale batteries are an important part of the picture, increasing the uptake of household-scale batteries will also facilitate the growth of DER. Given the grid integration challenges faced by Western Australia, the lessons from South Australia in developing and implementing Virtual Power Plants as part of a broader battery roll out would be relevant.

## EQUIP PUBLIC HOUSING WITH SOLAR AND BATTERIES #2

According to the Australian Institute of Health and Welfare, Western Australia had 44,059 public and social housing households as of 2018. **Equipping just one third of the existing public housing stock with an average system size of 5kW would create 360 jobs in the solar industry and add an additional 73MW of clean energy capacity in Western Australia.**<sup>19</sup> Additionally, equipping these households with batteries that are able to join a Virtual Power Plant would maximise the grid and market benefits of these solar systems.

## #3 REBATES FOR ROOFTOP SOLAR

**The Western Australian Government currently has no schemes for encouraging further uptake of rooftop solar.** The State Government should consider no-interest loans or rebates for solar such as those offered by Victoria (all households), as well as New South Wales and Queensland where there is a focus on low income households and renters.

Supporting more households to get rooftop solar is still important to ensure all WA households and businesses are able to reduce their energy bills during the economic downturn while providing rapid job creation for the state.



# VICTORIA

**Victoria has an ambitious plan to double the uptake of rooftop solar over the next decade.**

In this context increasing battery subsidies, and assisting public housing tenants with reducing electricity bills is a good stimulus priority.





# VICTORIA

## #1 EXTEND THE CURRENT SOLAR BATTERY REBATE BEYOND TRIAL PHASE

Victoria is currently granting subsidies to 1000 households per year to install batteries. In order to stimulate the economy, this subsidy could be scaled up significantly. South Australia, for example, is offering battery subsidies for a total of 40,000 homes. These batteries are able to connect to a Virtual Power Plant (VPP), which increases the utility of rooftop solar systems in meeting energy demand and stabilising the grid. A VPP connects households with solar and battery storage together to provide the broader grid with power when it makes the most economic sense to do so.

## SOLAR ON VICTORIAN PUBLIC HOUSING #2

According to the Australian Institute of Health and Welfare,<sup>20</sup> Victoria had 80,488 public and social homes as of 2018. Installing solar on even a third of these properties would create jobs and reduce power bills for the most vulnerable households, likely increasing household expenditure and boosting other parts of the economy such as retail and services.

**Equipping one third of the existing public housing stock with an average system size of 5kW would create 670 jobs in the solar industry and mean an additional 130MW of clean energy in Victoria.**

Additionally, equipping these households with batteries that are able to join a Virtual Power Plant would maximise the grid and market benefits of these solar systems.

## #3 REBUILD BUSHFIRE IMPACTED COMMUNITIES WITH MICRO-GRIDS

**Many Victorian communities suffered from the horrific bushfires in the summer of 2019-2020. Rebuilding these communities with renewable micro-grids and offgrid or stand-alone power systems (SAPS) would provide regional employment and future resilience to extreme weather events.**

Micro-grids enable communities to keep the lights on if a network connection to the main grid is severed.<sup>21</sup> For individual properties in isolated areas at the end of long lines, it may be better to take them off grid onto stand alone power systems. Some networks are already trialling this option.

Both micro-grids and SAPS can be powered by solar energy and batteries. These can be on individual properties and privately owned, or larger ones can be collectively owned - for example, by community energy groups. Community solar and battery projects allow renewable energy to be shared with households that cannot have their own renewable energy supply.



# NORTHERN TERRITORY

**The Northern Territory currently has one of the lowest levels of small-scale solar uptake in Australia with only 18% of households equipped with solar, and the radical reduction in the feed-in tariff will drive uptake down further.**

In this context, stimulus measures aimed at increasing the uptake of rooftop solar will assist not only with job creation and household budgets, but also with meeting the NT's 50% by 2030 renewable energy target.





# NORTHERN TERRITORY

## #1 REBATE SCHEME FOR NEW SOLAR

The Northern Territory has recently announced a new rebate scheme for rooftop solar and batteries, however this is limited to only 130 new systems.<sup>22</sup> Given that, an upfront rebate scheme for panels only would encourage more households to start generating solar power.

The number of households with solar did grow significantly between 2018 and 2019, with the highest number of solar installations ever last year.<sup>23</sup> In their review of renewable energy around the country, the Climate Council attributed the increase in the number of solar installations to the \$1000 rebate scheme. In this context, it seems prudent to introduce it again.<sup>24</sup>

## SOLAR ON NT PUBLIC HOUSING #2

The Northern Territories own 'Roadmap to Renewables' report includes the following recommendation:

*The Northern Territory Government should develop a policy to ensure solar PV installations are fitted to all public housing in the future and, where possible, progressively retrofit existing housing stock to allow disadvantaged and low income customers to participate in the renewable energy supply and reduce the cost of their electricity bill.<sup>25</sup>*

The NT should act on this recommendation and begin the retrofit of existing housing stock. Given high daytime temperatures in the NT and the use of air conditioning to ensure basic health outcomes, equipping public housing with rooftop solar would have multiple social and economic benefits.

## #3 SOLAR FOR REMOTE COMMUNITIES

The Roadmap to Renewables also describes ARENA's recent pilot program for solar in remote communities which displaced 15% of diesel generation with solar<sup>26</sup>, and stated that:

*"...there is considerable scope, building on the learning developed through this program, to create high penetration renewable energy systems in these communities utilising battery storage technology."<sup>27</sup>*

Utilising solar and batteries in remote communities will significantly bring down fuel costs, as well as create regional employment and reduce air pollution from diesel fuels.



# STATES AND TERRITORIES LEADING THE ENERGY TRANSITION

**Tasmania, South Australia and the Australian Capital Territory lead the country in the proportion of renewable energy generation in their grid.**

However additional policy settings will assist with the growth of rooftop solar, enabling more households to reduce their energy bills and stimulate rapid job creation during economic downturn.



# STATE LEADERS

## TASMANIA

**In its 2018 internal review of the solar feed-in tariff rate, the Tasmanian Government recommended that, instead of increasing the feed-in tariff that it was preferable to overcome the up front costs of solar by assisting customers to purchase battery storage systems, and assisting disadvantaged households to ‘reduce their electricity costs through energy efficiency initiatives such as solar.’<sup>28</sup>**

However, in spite of these recommendations, Tasmania currently has no programs supporting the uptake of rooftop solar. The Tasmanian Government should introduce a battery rebate scheme, as well as a solar targeted at low income households and renters that would enable more Tasmanian households to equip themselves with rooftop panels.

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## SOUTH AUSTRALIA

**While the South Australian Government’s household battery subsidy is an important step towards alleviating grid challenges, the SA Government should also consider additional measures such as community-scale storage, as is being pursued in Western Australia.**

In addition, Solar Citizens report *Repower South Australia*<sup>29</sup> makes a number of policy suggestions to assist a just energy transition, such as a public interest energy retailer and supporting community-owned renewables. It also calls for a process of consultation with remote Aboriginal communities in South Australia to transition from diesel dependency to local wind and solar. If remote communities consented, securing energy independence for remote Aboriginal communities would be a sound stimulus measure.

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## AUSTRALIAN CAPITAL TERRITORY

**While the Australian Capital Territory is on track to reach 100% renewable energy generation, the Territory has an opportunity to plan ahead to meet future energy demands and challenges, particularly as we move towards the electrification of transport and industrial processes.<sup>30</sup>** Capitalising on this opportunity to invest strategically in research and development for new renewable technology and infrastructure will not only stimulate the economy and create jobs, but will further future-proof the ACT’s energy system and industries.



# IMPACTED COMMUNITIES

**We asked Solar Citizens supporters how the COVID-19 crisis had impacted them. Almost 30% said their electricity consumption had increased, and 64% said it had impacted their businesses, with 70% needing support to recover.**

Over 75% were concerned that COVID-19 had affected the renewable energy transition. Popular recovery measures included continued investment in large scale renewables, investing in community scale batteries and ensuring that renters and low income earners can access solar.

Australians from around the country stand to benefit from programs to facilitate the uptake of rooftop solar, whether that's for community organisations like men's sheds, to ensure more clean green energy is going into our grid, or to build back bushfire impacted communities.



# TESTIMONIALS

## CASE STUDY

**Sean** – solar business owner

“ *Super Green Solutions has installed over 83 solar systems on rental properties in Townsville, for landlords looking to assist and retain their tenants and for several tenants in community housing.* ”

*These PV solar systems relate to hundreds of dollars of energy savings off every power bill for low income households (that need it most). This initiative ensures that it's now not just home owners that have access to the financial benefits that solar provides.*



## CASE STUDY

**Maggie** - bushfire survivor

“ *Much of my property and the main family home was destroyed by a bushfire in November 2019. We lost everything, including our solar system.* ”

*My oldest son was able to save his house, including his solar system, which he has just upgraded.*

*We need to build back our community, including our energy systems, and we need to do this in a way that makes us resilient to bushfires and other extreme weather events. Solar is the best way to go.*



# TESTIMONIALS

## CASE STUDY

**Oliver** - solar owner

**“** When I was looking at the initial installation of my solar system I made a conscious decision from the outset to get the largest size possible because I want to be doing my part for the energy transition.

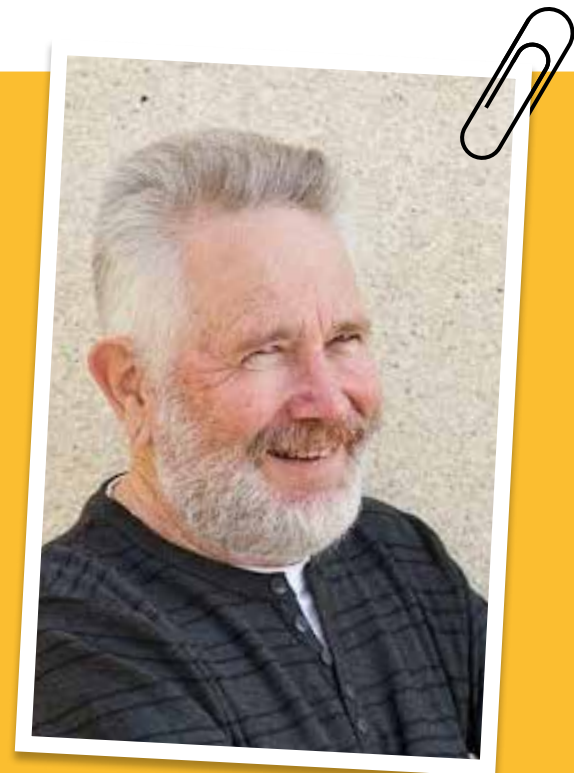
A government rebate to install battery storage would allow me to use more of my own solar and then supply to the grid when it is of the most benefit.



## CASE STUDY

**Greg** - community group

**“** My local men's shed supports around 180 members in our community. With high electricity usage our solar system helps us keep our power bills affordable meaning we have more funds to invest back into our projects and local community.





# CONCLUSION

**COVID-19 has created both a health and an economic crisis, and in order to avoid the worst economic impacts the State and Federal government are looking for options to create jobs and stimulate the economy.**

Now is the right time to invest in rooftop solar programs that deliver energy savings to households, create jobs and reduce emissions.

As we've struggled to deal with the worst impacts of the coronavirus pandemic, we haven't solved the crisis of climate change. Let's take this opportunity to build back better and secure a low cost, low emissions future for all of us.



# THANK YOU

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