

350
Australia

Heroes building Australia's low-carbon economy



Acknowledgements

This survey and report would not have been possible without the long hours, hard work and commitment of the following:

350.org's Hasmukh Chand (Coordinator), Clara Schauman (Chief Researcher), Louise Fraser (Production Manager), Blair Palese, Susan Cavanagh and the supporting team of Glen Klatovsky, Jackson Turner, Joseph-Zane Sikulu, Melissa Wellham, Andrew Wilcox and Hannah Barclay.

Designer and artist: Lauren Austin

The 350 team would like to thank the many people in the energy, finance, banking, investment and NGO sector who took the time to provide in-depth feedback and input into the survey and selection process for this report and those who contributed information and photos.

The 350.org team would like to thank all those stepping up and building Australia's low-carbon energy systems and economy. Whatever the motivation, your efforts are helping us address climate change by reducing greenhouse gas emissions and speeding up the transition to clean energy.

Thanks also to the thousands of people who support 350.org financially making such projects as this possible.

Image credit ©Shutterstock

www.350.org.au

Contents:

- 02** Introduction
- 03** Executive summary
- Section 1: Powering momentum**
- 06** Game changer: South Australia
- 08** Biggest risk taker: Andy Vesey
- 10** Inspirational leader: Sanjeev Gupta
- 11** Honourable mentions: Jay Weatherill, Simon Corbell, Tim Buckley
- 12** Special recognition: Giles Parkinson
- 13** Honourable mention: Bev Smiles
- 14** Best battery storage product and best product, service, technology system: Hornsdale Power Reserve
- 16** Largest portfolio divested from fossil fuels: Local Government Super
- 17** Honourable mention: Australian Ethical Super
- 18** Best Bank: Bank Australia
- 19** Honourable mention: NAB
- 20** Best Super fund: Future Super
- Section 2: Powerful partnerships**
- 22** Best small scale community project: Totally Renewable Yackandandah
- 24** Best medium scale community project: Clean Energy for Eternity
- 26** Best large scale community project: Hepburn Wind Farm
- 28** Best commercial PPA: BlueScope Steel
- 29** Honourable mention: Telstra
- 30** Best government PPA: ACT Government & Melbourne Renewable Energy Project
- 32** Best infrastructure project: Round Australia Electric Highway
- 34** Best small business: ClearSky Solar Investments
- 36** Best medium business: Enova Energy
- 38** Best large business: Mars Australia
- Section 3: Projects, people, principles**
- 40** Best federal projects: Clean Energy Finance Corporation
- 41** Best federal projects: Australian Renewable Energy Agency
- 42** Best state project: South Australia's 'virtual' power plant
- 43** Honourable mention: Victoria's reverse auctions
- 44** Best local government project: Local government divestment
- 46** Best Pacific projects: Palau, Nuie, Samoa, Tokelau
- 48** Early adopter of renewable technology: Solarhart
- 50** Best university research: Martin Green UNSW and Andrew Bakers ANU
- 52** Best school project: Solar My School
- 54** Female champion: Nicky Ison
- 55** Youth champion: Anika Molesworth
- 56** Indigenous champion: Dr Miriam-Rose Ungunmerr
- 57** Honourable mention: Perth Noongar Foundation
- 58** Best NGO: Solar Citizens
- 59** Longest running project: Rooftop solar
- 60** Most fortuitous mistake: Blaming SA blackout on renewables
- 62** Biggest blocker on climate action: Minerals Council of Australia
- 63** Dishonourable mention: Monash Forum

Introduction

In September 2018 the Global Climate Action Summit will bring together people from around the world to celebrate the extraordinary achievements by states, regions, cities, companies, investors and citizens in addressing climate change. It aims to inspire further action, share skills, as well as encourage investment in technology and systems to tackle this urgent global problem.

In anticipation of the summit, this report celebrates the heroes of Australia's low-carbon economy, telling the stories of the renewables sector, the businesses, communities, and individuals who are taking matters into their own hands, creating opportunities and building a sustainable energy future. With solar now cheaper than coal in Australia,¹ the time is right for bold steps to be taken from polluting to clean energy.

According to Bloomberg New Energy Finance, A\$12bn was invested in renewable energy projects in Australia in 2017 with an additional A\$3.2bn invested between January and May 2018. There is currently 6653MW of renewable energy capacity either under construction or completed² and an astonishing 40,000 commercial solar systems operating nationally. Between 2016 and 2017, solar installations by businesses in Australia increased by over 60%.³ And Australia leads the world in rooftop solar with 172,000 solar households as of 2017, 12% of these with battery storage and that number is growing rapidly.⁴

An estimated 14,820 people were employed in the renewable energy sector in Australia as of 2016/17⁵ with 6080 jobs in large-scale renewable energy projects.⁶

While our Federal Government lacks the leadership even to develop a cohesive climate and energy policy, and actively supports the fossil fuel industry at the expense of renewable energy, the heroes of the low-carbon economy identified in this report are stepping up, taking risks, and getting the job done.

We celebrate and honour their achievements, and share their stories with the hope of inspiring even greater participation and growth in the sector.

1 <https://reneweconomy.com.au/renewables-cheaper-than-coal-says-gupta-its-obvious-10880/>

2 <https://www.afr.com/news/politics/renewable-energy-investment-surges-as-australia-on-track-to-exceed-ret-20180514-h101vo>

3 Ibid (pg 3)

4 <https://www.cleanenergycouncil.org.au/policy-advocacy/reports/clean-energy-australia-report.html>

5 <http://www.abs.gov.au/ausstats/abs@.nsf/mf/4631.0>

6 <https://www.cleanenergycouncil.org.au/policy-advocacy/reports/clean-energy-australia-report.html>

Executive summary

Despite a lack of federal government leadership, the low-carbon economy is thriving.

The stories featured in this report have been chosen by a selection committee incorporating feedback from stakeholders in the low-carbon economy -- businesses, community groups, NGOs, researchers, academics, investors and individual experts.

We sought to highlight the low-carbon heroes who are finding, developing, investing in, and delivering real solutions from wind and solar energy and services to new low-carbon technologies, as well as those challenging the status quo to demand a more rapid change from our polluting past. Some are well known. Others are not.

Through the preparation of this report, a number of trends emerged, namely the speed at which low-carbon technology is being developed, the diversity of that technology and the geographic breadth of its take up across Australia. Cost and opportunity are driving that move, and individual leaders stepping up to shoulder the risks have been critical in allowing that to happen.

South Australia is leading the charge to develop and deliver a wide range of renewable energy solutions including large-scale battery storage, virtual power plants, electric vehicle and hydrogen prototype technologies. The ACT and Victorian governments are also taking a lead though innovative, system-wide strategies including the use of power purchasing agreements via reverse auctions.

Big companies including BlueScope Steel, GFG Alliance, Mars and Telstra are showing that the best way to control energy prices is to source their own renewable energy. Companies including Neoen, SIMEC ZEN Energy and Tesla are providing the technology to enable them to do so. Communities from Yackandandah to Tathra are uniting to source their own clean energy and in the process are sending a strong market signal that old-style fossil fuel energy is no longer cost effective.

Investment funds and banks including Local Government Super, Future Super, Australian Ethical Investment, Bank Australia and even NAB have shown there is a growing demand for fossil-free investments, and they're able to make clean profits. Australian councils have led local government authorities around the world in divesting from fossil fuels; and innovative social enterprises including ClearSky Solar Investments are allowing people like renters and those in apartments, to share in the renewable energy boom.

These heroes range from high profile business leaders including AGL's former CEO Andy Vesey, and GFG Alliance's Sanjeev Gupta, who have challenged the Federal Government expectations, to community activists like Bev Smiles who risked jail time for standing up against global coal company Peabody; youth leader Anika Molesworth, *RenewEconomy* editor Giles Parkinson, Nicky Ison of the Community Power Agency, Simon Holmes á Court, renewable energy advocate and advisor, and NGO Solar Citizens, who are all educating the public about the impact and capacity of renewables now, and challenging misinformation put out by the climate action blockers such as the Minerals Council of Australia and the Monash Group.

As the world gathers in California for the Global Climate Action Summit in September, the many heroes nominated in this report show that, despite a dearth of federal leadership to support the transition to a low-carbon economy, we are moving there rapidly thanks to their inspiration, innovation and leadership.

Conclusion

350.org's "Heroes Building Australia's Low-Carbon Economy" report grew out of the realisation that most Australians don't know how rapidly our country is moving away from fossil fuels and taking up renewable energy solutions which are already helping us address climate change. Most also don't know that, in the dangerous vacuum of federal leadership on climate change and energy, these low-carbon heroes are not only transitioning our energy systems, they are also providing a growing number of jobs and investment opportunities in the global low-carbon economy. Without those in this report, and the many who work with them or are yet to launch their innovative technologies and projects, Australia would be struggling to stay relevant.

In many ways, Australia has been sheltered -- some would say willfully so -- from the speed of global change. With international media headlines proclaiming "Coal is Dead",⁷ "Coal's Death Spiral"⁸ and "How US\$6 Trillion of Fossil Fuel Investments got Dumped Thanks to Green Campaigners",⁹ it's clear that Australia must prepare for life beyond coal, oil and gas. We urgently need national leadership, not political game-playing, to respond to climate change.

We celebrate everyone recognised here for filling the leadership void and showing that politics can't hold back the renewable energy tsunami.

7 <https://www.forbes.com/sites/kensilverstein/2018/06/20/bloomberg-coal-is-dead-in-the-ground-while-renewables-will-rise-but-that-could-change/>

8 <https://grist.org/article/coals-death-spiral-in-3-charts/>

9 <https://theconversation.com/how-6-trillion-of-fossil-fuel-investments-got-dumped-thanks-to-green-campaigners-97620>

Section 1:

Growing

momentum

Renewable energy is coming on line at an ever increasing rate around Australia as prices fall, technology improves and leaders step up to push the boundaries of the energy sector through investment and innovative business decisions. Across the country from banks, funds and industry there is a groundswell of agents for clean energy and urgent action on climate.

GAME CHANGER

South Australia - powering ahead on renewable energy

**WHO:**

Former ALP Premier Jay Weatherill and incumbent Liberal Steven Marshall, Elon Musk, Sanjeev Gupta, Arrium Steelworks, SIMEC ZEN Energy, Hornsdale Power Reserve, Precision Buses and many others.

FIND OUT MORE:

hornsdalespowerreserve.com.au

www.zenenergy.com.au/blog/new-zen-energy-launches-gigawatt-program-to-support-sa-industry/

www.bustech.net.au

South Australia has been selected as a game changer in Australia's move to a low-carbon economy

South Australia is living proof that renewable energy technology works to power an entire state, and the days of needing coal-fired power for baseload electricity are done. The state's rapid take up of all forms of renewable energy is a game changer for Australia in the move to a clean energy, low-carbon energy system.

Under the stewardship of former SA Premier Jay Weatherill, the state's Labor Government put in place a series of renewable energy projects that set a new standard nationally. The state is literally powering ahead thanks to the Weatherill legacy, solid support from private enterprise, local governments and visionary international business leaders including industrialist Sanjeev Gupta and Tesla's Elon Musk.

Since May 2016 when the state's last coal-fired power station closed at Port Augusta, South Australia has run on a combination of wind, solar and some gas energy.

As noted in the Product/Service category, after a Twitter bet between Australian tech innovator Mike Cannon-Brookes and Elon Musk, the installation of the massive Tesla lithium ion battery built at the Hornsdale wind farm gained national and global attention as the world's largest renewable energy battery. Unique initiatives like the state's trialling of a virtual power plant -- a system of thousands of solar panels and battery storage units installed in 50,000 state-owned, low-income houses, is underway with excess power fed into the grid. It's home to a burgeoning electric vehicle industry including EV buses and of the Sundrop Farm, a high-tech greenhouse farm powered by renewable energy.

Transformational leadership for South Australia has also come from British billionaire Sanjeev Gupta who bought the Whyalla Arrium steelworks in August 2017. A month later Gupta's company GFG Alliance then bought a 50.1% stake in SIMEC ZEN Energy, which will provide the power to operate the steelworks using only renewable energy. The SIMEC ZEN Energy team has endorsed plans to build up to 1GW of renewable power generation and battery storage, including 200MW of solar PV, a 100MW/100MWh battery at Port Augusta and 120MW/600MWh pumped hydro storage facility, which will be used to



The Hornsdale Power Reserve project, known as the Tesla Big Battery, has changed the face of Australian energy. ©Tesla/ Alexis Georgeson

**"SOUTH AUSTRALIA IS NOW
LEADING THE WORLD IN
DISPATCHABLE RENEWABLE
ENERGY, DELIVERED TO HOMES
AND BUSINESSES 24/7,"
FORMER PREMIER
JAY WEATHERILL (DEC 2017)**

power the steelworks and other industries on the state's Eyre Peninsula. Meanwhile South Australia's joint venture Precision Buses launched the first electric bus designed, engineered and built in Australia in 2017.

Even after a change of government in March 2018, South Australia's new Premier, Liberal Steven Marshall, has acknowledged the state is on track to have 75% of its electricity from renewable sources by 2025 – the target set by the former Labor premier Weatherill and once rejected by Marshall's Liberal government. The fact that Marshall has not sought to dismantle what is obviously an effective and positive policy for South Australia is to be commended and Marshall is included as a renewable energy Game Changer.

**BIGGEST RISK TAKER****Andy Vesey****ROLE:**

Former CEO of AGL Energy

FIND OUT MORE:www.agl.com.au

Andy Vesey has been selected as the biggest risk taker where the risk taken has made a significant contribution to establishing Australia's low-carbon economy.

As former CEO of the company that is Australia's single biggest greenhouse gas polluter, Andy Vesey is an unlikely low-carbon hero. Energy company bosses are generally risk-averse, and not known for their preparedness to defy federal governments. Yet AGL's boss has been willing to resist political pressure to extend the life of its ageing Liddell coal-fired power station in the Hunter Valley, NSW.

Commissioned in 1973 with a 25-year life expectancy, Liddell's original capacity was providing 2000MW of baseload energy but in its current condition, it is no longer able to be used in full. The *Australian Financial Review* reported in April that WorleyParsons put the cost of extending Liddell for five years at A\$920 million.¹⁰ Given these costs, and the fact Liddell puts out carbon dioxide emissions of as much as 5-6 million tonnes per year, keeping Liddell open clearly makes no energy, economic nor environmental sense, as Frank Jotzo, Director of the Centre for Climate Economics and Policy at Australian National University, argued in *The Conversation*, in September 2017.¹¹

Not long after Vesey made it clear the company wouldn't extend the life of Liddell, Alinta Energy made an unsolicited bid for the power station, which Vesey spurned. Instead, he stuck to his plan of replacing Liddell's capacity with a combination of renewable energies, batteries, increasing capacity at Bayswater power station and building a new gas-fired power plant near Newcastle. While new gas doesn't bode well for emissions

¹⁰ <https://www.afr.com/business/energy/electricity/the-fight-about-agls-liddell-power-station-explained-20180409-h0yju5>

<https://www.theherald.com.au/story/5066672/plan-to-keep-liddell-open-will-cost-13-billion-more-than-replacing-it-report-finds/>

¹¹ <https://theconversation.com/the-true-cost-of-keeping-the-liddell-power-plant-open-83634>



© Glen Katovsky

**"LIDDELL IS TOP OF THE
POPS, OR BOTTOM OF THE
POPS, WHEN IT COMES TO
UNRELIABILITY."
GRAEME HUNT,
AGL CHAIRMAN
AUGUST 2018**

reductions, standing firm against extending one of Australia's most polluting coal plants is critical in the move to clean energy alternatives.

As Vesey told the *Australian Financial Review* in April 2018, he's comfortable defending AGL's decision on Liddell, "*because I have actually engaged in that analysis, I have done the moral discernment, I have a feeling that we are in the right place ... we have had independent people look at the analysis*".¹²

With renewable energy and battery storage now clearly less expensive as an energy options than the astronomical costs required to repair a long out-of-date coal-fired power station, Vesey's decision to stand strong on the economics of closing Liddell is a powerful example of the business case for moving away from fossil fuels and to more affordable and climate-friendly clean energy alternatives. AGL chairman Graeme Hunt, said Vesey's departure did not signal a change of heart by AGL about closing Liddell.¹³

¹² <https://www.afr.com/news/ceo-lessons-from-the-frontline-agls-andy-vesey-and-nabs-andrew-thorburn-20180416-h0yt9o>

¹³ <https://www.theaustralian.com.au/business/mining-energy/agl-ceo-veseys-exit-wont-change-plan-to-shut-liddell-coal-plant/news-story/91a87370780672efb1cd77200d1d5895>



INSPIRATIONAL LEADER

Sanjeev Gupta

**FIND OUT MORE:**

www.gfgalliance.com/about-us/strategic-board/sanjeev-gupta

Sanjeev Gupta has been selected as the leader who is inspiring and motivating others to see the value of and participate in Australia's move toward a low-carbon economy.

Sanjeev Gupta is an Indian born, British billionaire who thrust himself into the Australian renewable energy and political spotlight in 2017. In just over 12 months, he has purchased Arrium's Australian assets, including its mining business and the struggling Whyalla Steelworks factory. In a bid to revitalise the Steelworks, Gupta has said he will invest an estimated A\$1 billion to power the steelworks with renewable energy and increase Whyalla production capacity by 50% and beyond, considered to be a lifeline to the local community.

Gupta's Greensteel program is a global game-changer on the renewable energy front. Through the program, Gupta aims to produce steel using only renewable energy and to use steel scraps to produce high quality recycled steel. In an effort to secure renewable energy and drive down costs, Gupta has also acquired a majority share in SIMEC ZEN Energy, an Australian battery and solar energy provider. As part of its \$1 billion 1GW program, SIMEC ZEN Energy has now set its sights on building a battery system in the Upper Spencer Gulf that will be larger than the Tesla "big battery".

"IT'S STILL EVERYONE'S PERCEPTION THAT IT IS CHEAPER TO MAKE POWER FROM COAL THAN IT IS FROM RENEWABLES, AND IT IS NO LONGER THE CASE." - SANJEEV GUPTA (2018)



HONOURABLE MENTION

Jay Weatherill

Former Premier Jay Weatherill secured for South Australia what is currently the largest solar energy battery storage facility in the world. Weatherill led the charge for renewables in the country with the state of South Australia currently on track to meet 75% of its energy needs with renewable energy by 2025. Other notable renewable energy projects in South Australia include plans for a concentrated solar thermal plant at Port Augusta, the manufacture of electric vehicles, the Sundrop Farm renewable energy greenhouse farm and the low-income housing renewable energy virtual power plant.

FIND OUT MORE:

www.theguardian.com/australia-news/2018/feb/21/all-in-on-renewable-energy-jay-weatherill-to-ramp-up-sa-target-to-75



HONOURABLE MENTION

Simon Corbell

Simon Corbell is the first Renewable Energy Advocate appointed by Victoria. His role is to champion the transition of local communities and businesses towards renewable energy. Prior to this role, Corbell spent eight years as the Deputy Chief Minister and Minister for Environment and Climate Change in the ACT legislature, the country's leading regional government taking action on climate change and the transition to renewable energy. He was instrumental in helping establish and driving the ACT's target of becoming 100% renewable by 2020. He has also helped Victoria set a 45% renewable energy target to be achieved by 2025.

FIND OUT MORE:

www.energy.vic.gov.au/vrea



HONOURABLE MENTION

Tim Buckley

With over two decades of financial market experience, Tim Buckley is considered one of the most respected equity analysts in Australia. He was the co-founder of Arkx Investment Management and has held senior positions in Citigroup and Deutsche Bank. Buckley is using his considerable understanding of national and international markets to show the false economy of the fossil fuel industry and the rapid change in the coal export market.

FIND OUT MORE:

www.ieefa.org/author/tim/



JUDGES' SPECIAL RECOGNITION

Giles Parkinson



ROLE:

Editor, *RenewEconomy*

FIND OUT MORE:

www.reneweconomy.com.au

Giles Parkinson has been selected for a judges' special recognition for his contribution to Australia's low-carbon economy.

Parkinson is the founder and editor of *RenewEconomy*, an independent news site created in 2012 and dedicated to clean energy news and analysis, and climate change policy.

Since its inception, *RenewEconomy* has had a unique voice in the Australian media landscape. As a publication it has broken hundreds of news stories about energy and climate ahead of the mainstream media and established itself as an authority on the renewable energy sector, providing insight, opinion and analysis of events that most media outlets have been unwilling to explore.

RenewEconomy is read widely among industry leaders, policy-makers, investors and members of the public with an interest in the transition to a low-carbon economy, and in October, 2017, it surpassed 25 million page views. Although it focuses mostly on Australian content, it has a strong international readership because it also features global trends. The site has 250,000 unique visitors each month.

Parkinson is a journalist of 30 years experience, a former Business Editor and Deputy Editor of the *Australian Financial Review*, a former columnist for *The Bulletin* and *The Australian* and the founder and former editor of *Climate Spectator*. In October 2017 he won the Deni Greene Award, a major environmental prize for environmental leadership in a professional capacity.

**HONORABLE MENTION****Bev Smiles****FIND OUT MORE:**

www.facebook.com/savewollar

Wollar resident Bev Smiles has campaigned for more than a decade against the continued expansion of the Wilpinjong coal mine that is moving in on her village. Smiles convened the Hunter Communities Network in 2011 to provide support, information and raise the profile of the social and environmental impacts of coal mining in the Hunter Valley, and has represented environmental and landholder interests on the Hunter Catchment Management Trust, Hunter River Management Committee and the Environment Protection Authority Board.

Smiles was one of the first people in NSW to be charged under draconian NSW legislation of 2017 that could be used to jail peaceful protesters for up to seven years. All charges against her and her fellow protesters were dismissed in June 2018, and Smiles says she is unlikely to let these laws stop her from future protests against coal mine expansion.

**BEST BATTERY STORAGE PROJECT,
BEST PRODUCT, SERVICE, TECHNOLOGY**

The Hornsdale Power Reserve

**WHERE:**

Jamestown, South Australia

WHO:

Tesla (battery builder),
Neoen (owner), Consolidated
Power Projects (electrical
infrastructure works), South
Australian Government

FIND OUT MORE:

www.hornsdalepowerreserve.com.au/overview

www.neoen.com/en

The Hornsdale Power Reserve, better known as “the big battery project” in South Australia has been selected as best product, service or technology, and best battery storage project for its scale, speed of installation and the impact it has had on Australia’s energy market.

The power storage site developed and owned by leading renewable energy producer Neoen, was built by Tesla at Neoen’s 309MW Hornsdale Wind Farm in South Australia.

Sparked by a tweet challenge made in March 2017 between tech innovator Mike Cannon-Brookes of Atlassian and Tesla boss Elon Musk, few believed a large-scale solar battery system could be up and running quickly enough to help address South Australia’s energy instability after a series of blackouts.

Musk’s vice-president for energy products, Lyndon Rive, had been spruiking Tesla batteries in the Australian media and tweeted that Tesla installed an 80MW battery system in California in 100 days, and could do the same here. Cannon-Brookes asked how serious Tesla was about the claim, and Musk tweeted that Tesla could deliver a large-scale battery system in 100 days from the time of contract signing, or it would be free.¹⁴

By June the French energy giant Neoen was working in collaboration with Tesla and lodged an application for South Australian state sponsorship of the project, to be established at Neoen’s Hornsdale wind farm, north of Jamestown. Neoen won out of 90 bidders.

Contracts were signed on 29 September, 2017, and the project was completed and connected to the grid on December 1, well within the 100 day agreement, making Musk the clear bet winner in the Cannon-Brookes challenge.

Built with the aim of helping to stabilise the South Australian electricity grid, integrating renewable energy and preventing large-scale power surges, the project is already proving to be a game-changer in Australia’s energy landscape.

¹⁴ www.abc.net.au/news/2017-03-10/tesla-boss-elon-musk-pledges-to-fix-sas-electricity-woes/8344084



The Hornsdale Power Reserve, or big battery, covers more than a hectare and could power the equivalent of 30,000 homes. Image courtesy Neoen

At the time of its construction the battery was the largest lithium battery, or Li-ion battery, in the world at 100MW/129MWh, covering a hectare of land and providing enough electricity to power the equivalent of 30,000 homes.

Since coming online, the big battery has shown positive returns. The advantage of the battery is its ability to switch on and off in an instant. This means that the system is capable of responding immediately to changes in demand and pricing, including when extreme weather impacts the grid. Less than a month after it came online, the battery was put to the test when the Loy Yang power plant went offline. The battery supplied 100MW into the grid in 140 microseconds.¹⁵

The battery has put South Australia on the map as a renewable energy powerhouse, in turn setting an example for other Australian states to move more quickly towards renewable energy and battery storage systems. French energy giant Neoen will operate and facilitate the project over the long-term, fostering engagement with the local community around critical aspects of the company's operations.

¹⁵ <https://www.news.com.au/technology/environment/thats-a-record-south-australias-tesla-battery-responds-to-coalfired-plant-failure/news-story/d9e02c0dbf6774ffea948a1b919f3b7f>



Local Government Super staff, from left; Scott Armstrong, Head of Property; Alice Martin, Responsible Investment Manager; Moya Yip, Responsible Investment Manager; Irene Chen, Property Investment Manager; Bill Hartnett, Head of Responsible Investment; Craig Turnbull, Chief Investment Officer. Image courtesy Local Government Super

LARGEST PORTFOLIO DIVESTED FROM FOSSIL FUELS

Local Government Super



Local Government Super (LGS) has been selected as the fund with the largest, most significant portfolio divested from fossil fuels.

WHERE:

Based in Sydney,
operating nationally

WHO:

David Smith (CEO) Bill Hartnett
(Head of Sustainability), Alice
Martin (Sustainability Officer),
Donna Heffernan (CPA)

FIND OUT MORE:

www.lgsuper.com.au

www.aodproject.net/pension/

LGS was established in 1997 and manages over AUD\$11 billion in retirement savings for around 90,000 Australians.¹⁶ LGS is a leader in responsible investment, winning *Money Magazine's* Best Green Super Fund a record six times, and was rated the best fund globally for the management of climate change risks in the 2017 AODP Global Climate Index.¹⁷ LGS is one of very few funds to be certified as a 'responsible super fund' by the Responsible Investment Association Australasia (RIAA).¹⁸

LGS said they consider climate change as the most significant risk to their members' long-term retirement savings.

The fund has undertaken a range of climate leading initiatives, including formal divestment of more than 50 coal mining, oil tar sand and coal fired generator companies. LGS has also invested in a number of renewable energy infrastructure projects including the Clare solar farm in Australia.

LGS has actively supported climate change related shareholder resolutions. In 2018, LGS co-filed the most successful climate change related shareholder resolutions at Rio Tinto and QBE Insurance. LGS's own direct property portfolio is one of the most sustainable in the country and the first in Australia to receive 5 Star Green Star performance rating.

¹⁶ <https://www.lgsuper.com.au/assets/Documents/Media-Releases/Local-Government-Super-reaches-milestone-of-11-billion-in-funds-under-management-20180307.pdf>

¹⁷ <https://aodproject.net/reports/>

¹⁸ https://www.responsiblereturns.com.au/certified_products

HONOURABLE MENTION



Australian Ethical Super

WHO:

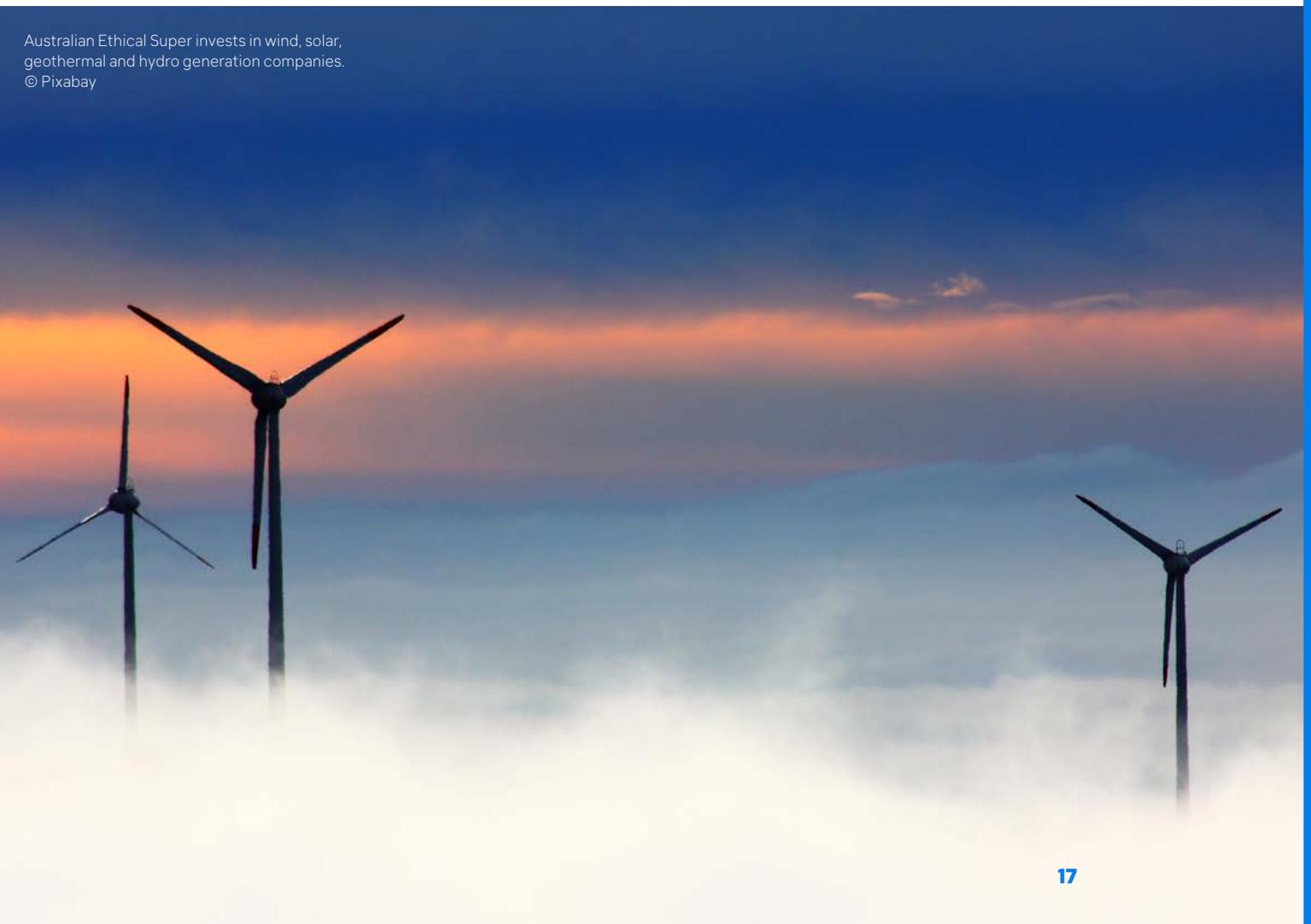
Phil Vernon (Managing Director), Steve Gibbs (Chair)

FIND OUT MORE:

www.australianethical.com.au

The Australian Ethical Super fund was established in 1986 with the aim of helping to build a clean energy future by investing in renewable energy technologies such as solar, geothermal, hydro and wind companies. The company manages investments of its 37,000 members in projects that are selected according to a charter that seeks to prevent environmentally and socially harmful practices.

Australian Ethical Super invests in wind, solar, geothermal and hydro generation companies.
© Pixabay



BEST BANK

Bank Australia

**WHERE:**

Headquarters in Melbourne,
Victoria, branches nationally

WHO:

Damien Walsh (Managing Director),
Judith Downes (Chair)

FIND OUT MORE:

[www.bankaustralia.com.au/
responsible-banking/](http://www.bankaustralia.com.au/responsible-banking/)

Bank Australia¹⁹ has been selected as the Australian bank that has done the most to establish our low-carbon economy through policies, investment decisions and/or project development.

Bank Australia is one of Australia's few fossil free banks, with a strict policy that it will not lend to coal and coal seam gas projects. The bank prides itself on its responsible investment and lending policy and markets itself as a bank dedicated to creating positive social and environmental change. While the bank generates a return, it is also committed to contributing to community good so it allocates 4% of its after-tax profits to projects that benefit people, planet and prosperity through its dedicated Impact Fund.

Bank Australia was established in 1957 and has since then become one of the strongest 100% customer-owned banks in Australia. The bank has over 130 000 customers, with total assets of A\$5.7 billion. Customers of the bank are also part owners in a 927 hectare private conservation reserve in Victoria. Partners include the Trust for Nature and Greening Australia to help protect endangered species in the reserve.

In 2017 Bank Australia also confirmed its commitment to take action on climate change by becoming a founding partner of the Victorian Government's TAKE2 pledge. The project aims to encourage people and organisations to take pledges on how they will take action on climate change. Bank Australia has also given itself a target of switching to 100% renewables by 2020, planting trees on its conservation reserve to absorb carbon emissions and buying offsets to maintain its carbon neutral operations.

¹⁹ Disclosure: Bank Australia was one of several sponsors that supported 350.org's Bill McKibben speaking tour in 2018.



The red tailed black cockatoo is one of the endangered species in the Bank of Australia Conservation reserve. © Rob McPherson

HONOURABLE MENTION



National Australia Bank (NAB)

WHO:

Ken Henry (Director and Chairman), Andrew Thorburn (Group CEO), and the bank's sustainability/stakeholder team (special mention to the recently departed Kylie Porter)

FIND OUT MORE:

www.news.nab.com.au/update-on-financing-of-new-thermal-coal-mining-projects

NAB was the first of the big four Australian banks to stop financing new thermal coal mining projects, calling for an orderly transition to a low carbon Australia. NAB also has a policy to reduce its greenhouse gas emissions by 21% from 2015 levels by 2025 and a new finance facility to allow institutional investors to back major renewable energy projects.



Simon Sheikh, co-founder of Future Super, at the Mount Majura Solar Farm in the ACT. Image courtesy Future Super.

BEST SUPER FUND

Future Super



Future Super has been selected as the investor (super fund, managed fund, impact investment fund, etc) having the most progressive investment impact and/or policies that support renewable energy and/or other low-carbon initiatives.

WHERE:
Canberra, ACT

WHO:
Simon Sheikh (founder and CEO), Adam Verwey (founder and ED), Christina Hobbs (non-ED), Dan East (chief investment officer), Kirstin Hunter (MD).

FIND OUT MORE:
www.myfuturesuper.com.au

Future Super is Australia's first fossil-free superannuation fund with no portfolio investments in coal, oil or gas. Its diversified portfolio also excludes banks that finance fossil fuels, and companies that provide polluters with essential services. Future Super invests in solution-oriented companies such as those developing renewable energy sources and systems.

Founded by Simon Sheikh and Adam Verwey in 2014, Future Super now has over half a billion dollars under management on behalf of more than 15,000 Australians.

"The team at Future Super is driven by the belief that most people don't want their super to support industries that addict, pollute and kill. Instead, everyday Australians want a liveable planet, healthy communities and 100% renewable power," said Sheikh.

"Research shows just 7.7% of super could get Australia to 100% renewable power by 2030. Unfortunately, as much as half of Australia's super could still be exposed to high-polluting companies," said Sheikh.

"AS PEOPLE SWITCH TO FOSSIL-FREE SUPER, IT SENDS A STRONG MESSAGE TO THE REST OF THE SUPER INDUSTRY."

Section 2: Powerful partnerships

Social and commercial enterprises, state and local governments and community groups are not waiting for the Federal Government to deliver clean, sustainable and affordable energy. From local groups uniting to share the costs and benefits of installing solar, to businesses offsetting their energy consumption with offsite generation or purchasing renewable energy directly, collaborative projects are delivering clean energy around Australia right now.

BEST SMALL SCALE COMMUNITY PROJECT

Totally Renewable Yackandandah

**WHERE:**

Yackandandah Victoria

WHO:

Matthew Charles-Jones (EO),
Matt Grogan (chairman),
Mondo Power, AusNet Services,
Indigo Shire Council, North
East Water, the residents and
businesses of Yackandandah

FIND OUT MORE:

www.totallyrenewableyack.org.au

Totally Renewable Yackandandah has been selected as the best small scale project or initiative delivering measurable benefits and changes to its local community.

Totally Renewable Yackandandah (TRY) was formed in 2014 as a community group after a forum on energy was organised by the Indigo Shire Council. Passionate members of the community came together and set the ambitious target of becoming a 100% renewable town by 2022.

The work that TRY has been doing since its inception has had significant benefits to the local community. In 2015, TRY helped raise A\$5000 to support the installation of a 90kW PV system on the Yackandandah Health Services building (YHS). The funds also covered other energy efficiency measures including low maintenance LEDs. These measures are now expected to save the the health service A\$1 million over the next 25 years and save about 115 tonnes of greenhouse gas emissions every year. Since the success of the health service project, TRY has been working with other community stakeholders such as the local football and netball club and the local bowls club.

Through TRY's work, 40% of the local community's households and businesses have rooftop solar. Since late last year, TRY has been working with AusNet Services and Mondo Power to develop a community scale mini-grid, the first of its kind in Australia.²⁰ The mini-grid will help houses and businesses in the community to generate, trade and share energy with each other. TRY's efforts to help the local community move towards 100% renewable were recognised last year through the Banksia Award – the most prestigious sustainability focused awards in Australia.

After the success of the Yackandandah project Mondo Power is now working with communities right across the Hume region and throughout Victoria to build mini-grids and provide other solutions which help homes and businesses take part in the new energy future.

"We've been reflecting on the power of people who are thinking differently about it and just getting on and doing it, and in many cases bringing in lots of interesting partnerships - for us its about households and businesses." - Matthew Charles-Jones, co-chair of TRY (2017)

²⁰ <https://arena.gov.au/blog/yackandandah/>



Totally Renewable Yackandandah has helped put 348 solar panels on the Yackandandah Health Services building. Image courtesy Totally Renewable Yackandandah

BEST MEDIUM SCALE COMMUNITY PROJECT

Clean Energy for Eternity

**WHERE:**

Tathra - NSW South Coast

WHO:

Clean Energy for Eternity members, local Tathra community, Bega Valley Shire Council, NSW Department of Environment and Heritage

FIND OUT MORE:

www.cleanenergyforeternity.net.au

Clean Energy for Eternity has been selected as the best medium scale project or initiative delivering measurable benefits and changes to its local community.

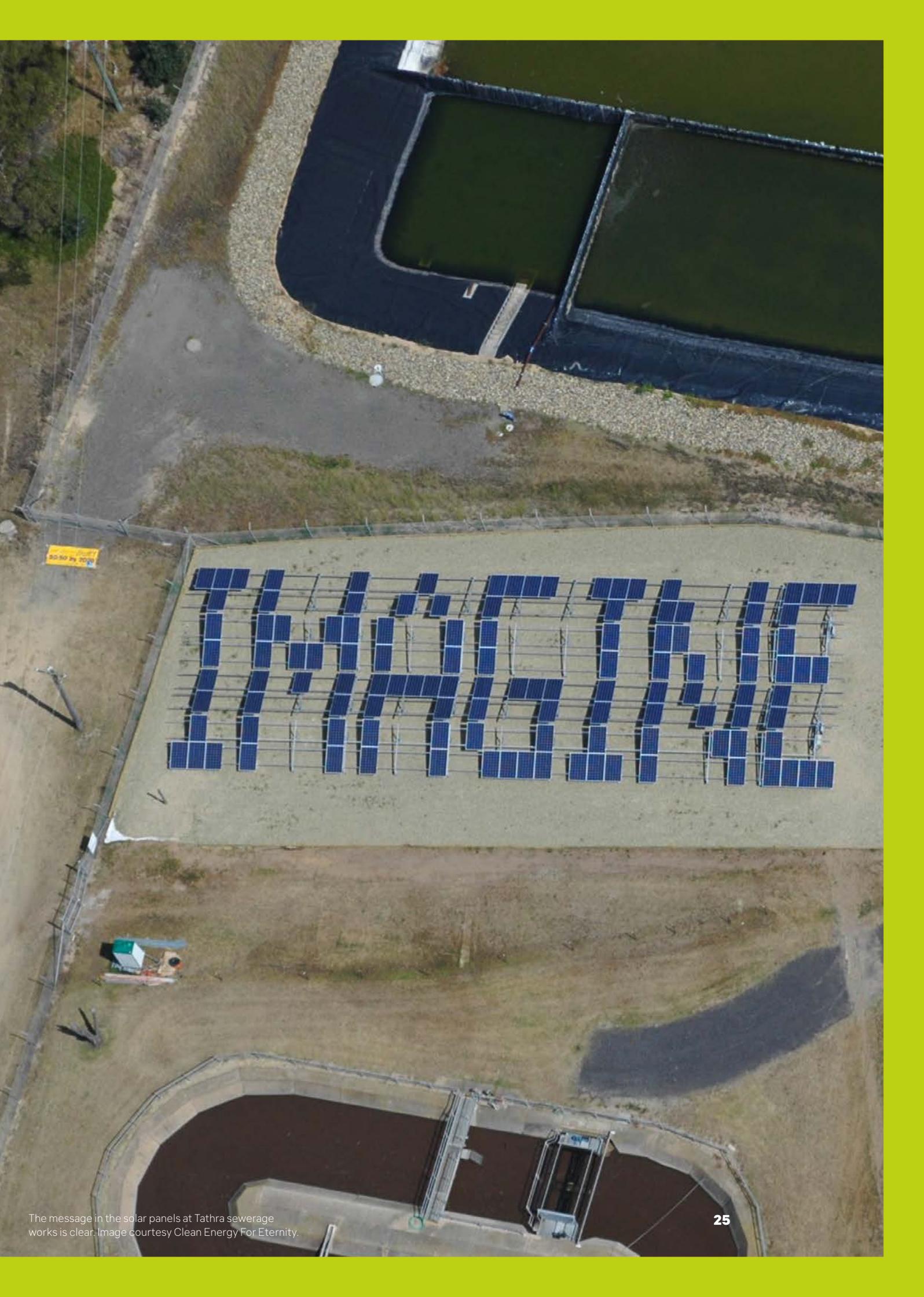
The community of Tathra located on the south coast of NSW is home to Australia's first community-owned solar farm. Their journey began at the start of 2006, when Tathra experienced one of its hottest days on record. Soon after, the community came together and unanimously voted on a plan to achieve a 50% reduction in energy use and to become powered by 50% renewable energy by 2020.

Those interested in helping the local community transition to renewable energy formed a group called 'Clean Energy for Eternity'. Since its inception in 2007, the group has been methodically working with businesses and council-owned facilities to switch to renewables. The group has been working with key stakeholders including churches, surf-life saving clubs, community centres, sports halls and schools.

One of the most iconic and largest local renewable energy projects completed by Clean Energy for Eternity is the installation of solar panels at the Tathra sewage treatment facility. It consists of a 120 solar panel array arranged to spell out 'IMAGINE'. The solar array has an output of 40MWh a year and helps offset much of the electricity use from the sewage treatment plant.

To help raise the A\$100,000 needed for the construction of the system, the community started a mountain bike race, undertook public crowdfunding and arranged financial support from Bega Valley Shire Council and the NSW Department of Environment and Heritage.

The savings from the energy costs are being used to support more renewable energy projects in the local community. Tathra community's leadership has been recognised with a number of awards including the NSW Local Government Award for Excellence in Environmental Leadership and Sustainability (2016).



The message in the solar panels at Tathra sewerage works is clear. Image courtesy Clean Energy For Eternity.

BEST LARGE SCALE COMMUNITY PROJECT

Hepburn Wind Farm

**WHERE:**

Leonard Hills,
Central Victoria

WHO:

Executive: Taryn Lane,
Marie Lakey and
Jessica Eve.
Directors Linda Hancock,
David Perry, Geoff Gedge,
Ross Ulman, Graham White,
Stuart Read, Paul Houghton

FIND OUT MORE:

www.hepburnwind.com.au

Hepburn Wind farm has been selected as the best large scale project or initiative delivering measurable benefits and changes to its local community.

Established in 2007, Hepburn Wind Farm is the first community-initiated and owned wind farm in Australia. It has two turbines with a combined output of 4.1 MW providing enough energy to power 2,000 homes. It first provided electricity into the local network in 2011. This cooperative wind farm is currently owned by 2,010 members, with over 51% of them from the local area. The members contributed an initial A\$9.9 million towards the construction of the wind farm. Each member has one vote in all meetings and has equal weight in the farm's community-based decision making. The operation is managed by a board of seven volunteer directors.

Hepburn Wind Farm is a great example of a small, local community driving the effort to find clean energy solutions that help address climate change as well as providing economic and social benefits to their local area. Some of the benefits to the community include the employment and upskilling of locals and creating a community program that can be replicated in other communities across Australia.

While Hepburn Wind Farm is the first of its kind in Australia, the community-owned model has been successfully operating in countries like Denmark and Germany for decades.

Hepburn Wind Farm members are continuing to show local leadership in the renewable energy space by setting a goal of transitioning Hepburn shire to 'zero-net energy' by 2025. Some of the projects that the cooperative is involved in include: a mid-scale solar farm development, Z-NET (Zero-Net Emissions Transition) program, Hepburn Solar Bulk-buy, donation solar for community facilities, rejuvenating a micro-hydro site at Lake Daylesford and funding the region's first, free electric vehicle charging station. Since 2011, funds from the operation of the wind farm have also gone towards supporting over 50 local community projects through grants totalling over A\$100,000.



Hepburn Wind Farm has two turbines, named Gusto and Gale, producing 4.1MW. © Studio Anton

**BEST COMMERCIAL/PRIVATE POWER
PURCHASE AGREEMENT**

BlueScope Steel



Bluescope Steel has been selected as the 'best commercial power purchase agreement' in 2018 that has had a positive impact on Australia's move toward renewable energy/low-carbon economy.

WHERE:

HQ Melbourne, Victoria

WHO:

BlueScope Steel, ESCO Pacific
and Schneider Electric

FIND OUT MORE:

[www.businessinsider.com.
au/bluescope-steel-just-
signed-the-largest-solar-
power-purchasing-deal-in-
australia-2018-7](http://www.businessinsider.com.au/bluescope-steel-just-signed-the-largest-solar-power-purchasing-deal-in-australia-2018-7)

In July 2018 Bluescope Steel announced it had signed the largest solar power purchasing agreement (PPA) by any industrial energy user in Australia.²¹ With the steel giant's energy costs ballooning to over A\$50 million in the past two years, the company has indicated that the seven-year agreement will help reduce costs and is an investment opportunity to lock in less expensive, and environmentally friendly, renewable energy.

The contract, arranged through the world's largest energy management adviser and cleantech consultant, Schneider Electrical, is set to underpin a new 500,000 panel solar farm to be built in the NSW Riverina district by the solar farm developers, ESCO Pacific. BlueScope Steel will use 66% of the 133MW of energy generated from the solar farm as an offset under the seven year deal. The volume under the agreement is equivalent to 20% of the steel-giants total Australian electricity purchases.

Supply will function as complementary round-the-clock power to feed the company's steel plants. Under the agreement BlueScope will get a fixed price for power over the life of the contract, immediately reducing electricity costs and providing a firm buffer against volatile energy market prices. The agreement is equivalent to taking off 90,000 cars off the road, powering 60,000 homes or reducing 300,000 tonnes of carbon dioxide emissions. The ESCO Pacific Solar Farm will be located on a 300 hectare site which is almost half the size of BlueScope's Port Kembla Steelworks and is set to commence operation in mid 2019.

²¹ [Media Release Bluescope underwrites investment in 500,000 panel solar farm. 20th July 2018](#)



Commemorative solar panels made for the Bluescope power purchasing agreement announcement. Image courtesy Bluescope

HONOURABLE MENTION



Telstra power purchase agreement

WHO:

Telstra - Emerald Solar Farm

FIND OUT MORE:

<https://exchange.telstra.com.au/renewable-energy-murra-warra-wind-farm/>

In 2017, the telecommunications giant Telstra became one of the first private sector players to enter into a power purchase agreement. Under the agreement, Telstra will be purchasing electricity from the 70MW Emerald solar farm from far North Queensland. Since then, Telstra has also been part of a consortium (including Coca-Cola Amatil, ANZ and University of Melbourne) to purchase electricity from the 226MW first stage Murra Warra wind farm in western Victoria. Once operational, it is expected that the Murra Murra wind farm will be one of the 'highest-performing' wind farms in the Southern Hemisphere.

BEST GOVERNMENT PPA

ACT Government & Melbourne Renewable Energy Project (MREP)

**WHERE:**

Australian Capital Territory & Crowlands Victoria

WHO:

Reverse Auctions: ACT Government, Ararat Wind Farm Pty Ltd, Coonooor Bridge Wind Farm Pty Ltd Hornsdale Wind Farm Pty Ltd, Sapphire Windfarm, Crookwell 2 Wind Farm

MREP: Bank Australia, NAB, Australia Post, Citywide, Moreland City Council, City of Yarra, City of Port Phillip, City of Melbourne, NextDC, RMIT University, The University of Melbourne, Zoos Victoria, Melbourne Convention and Exhibition Centre, Federation Square.

FIND OUT MORE:

[Reverse Auctions](#)

[MREP](#)

The Australian Capital Territory's (ACT) reverse auction and Melbourne's Renewable Energy Project (MREP) have jointly been selected as the best government power purchasing agreement that has had a positive impact on Australia's move toward a low-carbon economy.

Reverse auctions are an innovative approach to energy purchasing and to encourage a move to renewable energy sources. The ACT government was the first jurisdiction in Australia to use the reverse auction for construction of new renewable energy projects. The reverse auction invites companies to submit proposals for the construction at the lowest cost.

The ACT held four auctions between 2012 and 2016, resulting in 40MW of solar capacity and 600MW of wind at record low prices.²² The auction showed for the first time that local or state governments can drive investment in renewable energy, while limiting costs to consumers, and working alongside industry.

The initiative shows forward thinking leadership and deserves recognition because of its efforts to find new ways of tackling climate change. It also signals a leading commitment to achieving 100% renewable electricity by 2020 and net zero emissions by 2045. The team that led the auctions was made up of only five people, which in itself is a triumph. It shows that a small team can make a big difference. In this case leading the way for transforming Australia's renewable energy landscape.

The renewable energy power supply agreement developed by the Melbourne Renewable Energy Project (MREP) is also an Australian first, with fourteen organisations from local governments, cultural institutions, universities and corporations collectively purchasing renewable energy from a newly built wind farm facility. Located at Crowlands, a small agricultural community about 2.5 hours west of Melbourne, the project will have 39 wind turbines with an 80MW output. The 10 year PPA is equivalent to supplying 17,600 households with power every year, taking 22,500 cars off the road each year and reducing 96,800 tonnes of greenhouse gas pollution each year.²³

²² https://www.cmtedd.act.gov.au/open_government/inform/act_government_media_releases/rattenbury/2017/act-recognised-for-forward-thinking-behind-reverse-auctions

²³ <https://www.melbourne.vic.gov.au/business/sustainable-business/mrep/Pages/melbourne-renewable-energy-project-infographic.aspx>



Pictured: (from left) Greg Buckman, Megan Ward, Dorte Ekelund, (Unknown), Minister Simon Corbell and Ann Lyons-Wright at sod-turning of the Williamsdale Solar Farm, July 2016. Image courtesy ACT Government.



Pictured: (from left) Anne Parker, Megan Ward, Jon Sibley, Ann Lyons-Wright, James Priestley, Dorte Ekelund and Greg Buckman after being awarded the 2016 ACT Public Service Award for Excellence (Innovation), July 2016. Image courtesy ACT Government

BEST INFRASTRUCTURE PROJECT

The Round Australia Electric Highway

**WHERE:**

A 17,000 kilometre network around Australia with more than 300 public charging points for electric vehicles.

WHO:

Tesla Car Owners Association, the Australian Electric Vehicle Association, state and local governments, car associations including ACT, RAC WA, NRMA and private enterprise.

FIND OUT MORE:

www.plugshare.com

www.teslaowners.org.au/round-australia

The Round Australia Electric Highway has been selected as the best infrastructure project that is leading by example with a low, neutral or net positive carbon impact.

Two years ago, it was not possible to drive around Australia by electric car using only publicly accessible charging points. In 2016, state governments and local councils, state based car clubs, caravan parks and some private businesses such as Tesla, had established a strong network of EV charging stations in the heavily populated south-east corner of Australia, up the eastern seaboard and in the south-west corner around Perth. But there was still a 10,000 kilometre shortfall, missing most of Queensland, across the Top End, the Nullabor and Australia's west coast.

By May 2018, the 17,000 kilometre Round Australian Electric Highway joined all of the gaps in the existing network, circling mainland Australia and including roads around Hobart and north from Adelaide to Darwin.

The circle was completed thanks to the Tesla Owners Club of Australia (TOCA) with support by the Australian Electric Vehicle Association's Western Australian branch, the WA Government and some private enterprise. Together they began a mission to fill the gaps between existing plug in points, starting with linking Perth to Adelaide across the Nullabor and the Stuart Highway to the Top End.

At the same time, the Queensland Government, with support of more local councils, was planning the roll out of its fast charge point system. In January 2018, the first phase of the Queensland EV superhighway was complete, covering the Queensland coast from the NSW border to Cooktown, and out via Longreach and Mount Isa into the Northern Territory. The Queensland charge points are all powered by renewable energy and free to use.

In late May 2018 the network had grown to more than 300 publicly accessible plug in points, with charging outlets spaced a maximum of 400 kilometres apart, but in most cases at an average of 200 kilometres apart.

Sylvia Wilson, 70, was recognised by the Tesla Owners Club of Australia as the first person to complete the Round Australia Electric highway on June 20, 2018, after a three month trip in her Tesla Model S 75, going clockwise from Gladstone.



Sylvia Wilson and her electric car, fondly known as "Bluey", made the 20,396km trip on the EV superhighway in three months. Image courtesy Sylvia Wilson.



Image courtesy Byron Bay Solar Train

HONOURABLE MENTION

Byron Bay Solar Train



FIND OUT MORE:

www.byronbaytrain.com.au

A special mention in this category goes to the Byron Bay Solar Train, which lays claim to being the only solar train in the world. It was converted from diesel to solar and began operation in December 2017 on a 3km disused track between Casino and Murwillimbah, NSW. While longer trips than the 10 minute journey would require recharging, the concept may be adaptable for urban use such as trams.

SMALL BUSINESS

ClearSky Solar Investments

**WHERE:**

Australia wide

WHO:

ClearSky Solar Investments Board - Neale Siebert, Christina Kirsch PhD, Warren Yates BSc BE PhD, Kylie Hitchman BSc Psych Hons - and installation partner Smart Commercial Solar, and Clean Energy For Eternity (Northern Beaches).

FIND OUT MORE:

www.clearskysolar.com.au

www.cleanenergyforeternity.net.au

ClearSky Solar Investments has been selected as the most successful small business leading the move to a low-carbon society.

Until recently people who rent, live in apartments or those on low incomes would have found it hard to benefit from offsetting power bills with solar PV systems. ClearSky Solar Investments, a not-for-profit social enterprise established through an initiative of the (Sydney) Northern Beaches Chapter of Clean Energy for Eternity in NSW addresses that problem.

The organisation links community investors with quality solar projects that need financing. Users create a profile on ClearSky's website and are notified when a new project opens that matches their preferences. Investors provide the capital for the installation of panels and receive a fee for each kWh the system generates for the next 10 years.

As a result, the end user pays less for their electricity and investors promote the growth of renewable energy in Australia while earning money. The core aim of the company is to contribute to local communities by fostering new businesses and changing the energy landscape into one filled with renewable options that are owned by individual investors.

To date ClearSky Solar has raised over A\$3 million from its investors and installed 30 solar projects with 2.223 MW installed capacity. The volunteer run company is helping fill the gap in the Australian energy sector by providing alternative solutions to energy supply in a market that has seen soaring prices in recent years.

It is proving that solutions exist when communities pitch in and invest in the future. In 2017, ClearSky Solar facilitated the installation of a 230 kW solar system on the Sydney based bakery Bakers Maison.²⁴ Within six hours, 20 investors contributed almost A\$400,000 for the project. Over the period of seven to 10 years, the investors get a 7% return on their investments. After this time, the business will own the panels and use energy for free.

²⁴ <http://www.abc.net.au/news/2017-04-30/community-energy-projects-selling-out-within-minutes/8476794>



ClearSky Solar Investments committee members Graeme Jessup and Elisa Brunner discussing solar projects on the Northern Beaches. Image courtesy ClearSky Solar Investments.



Clearsky Solar Investments founding Directors Warren Yates (right) and Christina Kirsch with Iain McGregor from their installation partner Smart Commercial Solar at the community energy congress in Canberra in 2014. Image courtesy ClearSky Solar Investments.

MEDIUM BUSINESS

Enova Energy

**WHERE:**

Byron Bay, NSW; working
Australia wide

WHO:

Alison Crook AO (chair of the
board), Tony Pfeiffer (managing
director) Enova Community
Energy.

FIND OUT MORE:

www.enovaenergy.com.au

Enova Energy has been selected as the most successful medium sized business leading the move to low-carbon energy.

Enova Energy was established in 2016 and is Australia's first solar energy retailer completely owned by the public. The company's shareholders are everyday investors with an interest in supporting community-driven clean energy solutions. In 2015, the company raised A\$3.8 million from 1,090 investors and has since then opened an office in Byron Bay.²⁵

Enova aims to increase green energy uptake in Australia and send a powerful message that the move to green energy is doable now, essential and beneficial.²⁶ The company's aims are to create profits and jobs in the community, reduce carbon emissions and create alternative energy supplies that benefit all socio-economic groups. Half of profits generated by Enova Energy are allocated to their not-for-profit arm, Enova Community Energy, that helps regional communities transition to renewable energy through a variety of projects. One of the projects is the installation of 64kW solar panels on 28 low income houses in partnership with the North Coast Community Housing and the Department of Environment and Heritage.

Enova has partnered with the Bellingen Solar Depot, New England Solar, Juno Energy, Rainbow Power Company, Light Touch Solar and GreenPower, Australia's voluntary government green power accreditation program.

²⁵ <http://www.abc.net.au/news/2016-01-05/australia-first-community-owned-energy-retailer-enova/7068420>

²⁶ ibid



Enova Community Energy has installed solar panels on the rooftop of its headquarters in Byron Bay. Image courtesy Enova Energy.



Enova Community trains volunteer energy efficiency coaches who work in the community to empower people to reduce their energy. Image courtesy Enova Energy.



Barry O'Sullivan at Mars' Wodonga facility. Image courtesy Mars Australia

LARGE BUSINESS

Mars Australia



WHERE:

Ouyen, Victoria and locations around Australia

WHO:

Mars Australia, the Kiamal Solar Farm, Total Eren

FIND OUT MORE:

<https://www.mars.com/australia/en/home>

Consumer goods manufacturer Mars Australia has been selected as the most successful large business leading the move to the low-carbon economy for its commitment to use 100% renewable energy by 2020.

In a deal announced in late May 2018, Mars signed a 20-year power-purchase agreement with Total Eren to generate the equivalent of 100% of Mars' power needs to run its six factories across Australia - in Asquith, Ballarat, Bathurst, Wacol, Wodonga and Wyong, as well as offices in Sydney and Melbourne.

Mars' electricity will be offset by power generated from Total Eren's 200MW Kiamal Solar Farm, which is being built and due to come online near Ouyen in northern Victoria by mid 2019, and from another Total Eren solar farm to be built in NSW. Mars' global parent company, Mars International, has made a US\$1 billion commitment to reach carbon neutrality by 2040, Mars Australia aims to be carbon neutral in just over a year.

Mars internationally plans to become sustainable within a generation, and aims to reduce greenhouse gas emissions across its supply chain globally by 67% by 2050.

"Mars is thrilled to be flicking the switch to solar energy," said Barry O'Sullivan, General Manager of Mars Australia. "It's about making a long-term commitment to a sustainable, greener planet that will benefit our customers, our consumers and the local and global community. The rise in electricity prices last year accelerated our plans to join Mars sites in the US, UK and nine other countries in moving to renewable electricity."

"We acted quickly because the price volatility of energy in Australia made renewables the best option for our business, in addition to getting us closer to our commitment to eliminate greenhouse gasses from our operations by 2040. Ultimately this will leave the business financially better off."

Section 3:

Projects, people,

principles

From companies and projects with decades of history, to the latest distributed 'virtual' power plants and from community-led energy transitions in the outback and urban centres, to researchers making technological breakthroughs, the skills and experience of the national renewables sector in Australia is unmatched. But sadly, we still face a multitude of hurdles in the transition to clean energy.

BEST FEDERAL PROJECT

Clean Energy Finance Corporation (CEFC)



The Clean Energy Finance Corporation (CEFC) and the Australian Renewable Energy Agency, (ARENA) have been jointly selected as the best Federal government renewable energy/low-carbon projects.

WHERE:
Canberra, ACT

WHO:
Ian Learmonth (CEO),
Steven Skala (Chair),
(and honourable mention to
founding CEO Oliver Yates)

FIND OUT MORE:
www.cefc.com.au

The Clean Energy Finance Corporation (CEFC) is a statutory authority established by the Australian Government under the Clean Energy Finance Corporation Act 2012, provided with A\$2 billion each financial year since 2013 to promote investment in the Australian clean energy sector.

Since its founding, the CEFC has invested in scores of renewable energy projects across Australia including:

1. The Coleambally Solar Farm in regional NSW which will have 560,000 solar panels once completed with an output of 150MW.
2. The redevelopment of a disused coal-fired power station in Collinsville QLD into a solar farm with an output of 42MW.
3. The Granville Harbour wind farm in Tasmania which will have 31 turbines and a combined output of 112MW.

The CEFC has been a great success and a key supporter in Australia moving towards a low-carbon economy. There were times since it was first created where it looked likely to be dismantled, particularly under the Abbott government.²⁷ However, its record of finding, funding and generating an impressive return on investment has made it too successful to question. The CEFC's 2017 annual report²⁸ stated that it invested more than A\$2 billion in projects valued at A\$6.5 billion, financing projects worth A\$3.5 billion estimated to reduce 7.3m tonnes of carbon dioxide emissions annually. And it did all that while making a profit.

²⁷ <http://www.abc.net.au/news/2016-03-23/government-reverses-decision-to-dump-renewable-energy-agencies/7269568>

²⁸ <https://annualreport2017.cefc.com.au/media/1399/cefc-annual-report-2017.pdf>



When built, the Coleambally Solar Farm in regional NSW will have 560,000 solar panels once completed with an output of 150MW. © Shutterstock

BEST FEDERAL PROJECT



Australian Renewable Energy Agency (ARENA)

WHERE:

Canberra, ACT

WHO:

Darren Miller (CEO),
Martijn Wilder (Chair)

FIND OUT MORE:

<https://arena.gov.au>

Established in 2009, the Australian Renewable Energy Agency (ARENA) is designed to accelerate Australia's shift to an affordable and reliable renewable energy future and improve competitiveness in the energy market.

ARENA provides funding to researchers, developers and businesses that show feasibility and commercialisation of Australian renewable energy projects. In 2016-17, 35 new projects received a total of A\$123 million in ARENA funding commitments, helping to attract a total of A\$1.2 billion in new renewable energy investment. Twelve large-scale solar farms were established in that timeframe, effectively tripling Australia's future solar output. Collectively the projects funded by ARENA generated 263 MW of electricity; enough to power a city larger than Newcastle, NSW.

BEST STATE GOVERNMENT PROJECT

South Australia's 'virtual power plant'

**WHERE:**

Across South Australia

WHO:

South Australian State Government, Tesla, Renewable Technology Trust and Origin Energy

FIND OUT MORE:

www.virtualpowerplant.sa.gov.au/virtual-power-plant

The South Australian virtual power plant was selected as the most innovative or best state government renewable energy/low-carbon project completed, operational or have funding start by end of June 2018.

On the back of its success in securing the world's largest renewable energy battery storage project, the South Australian government is now seeking to create the world's largest virtual power plant in partnership with Tesla. This will be achieved through a network of household rooftop solar PV and battery systems that work together to generate, store and provide energy back to the main electricity grid. The South Australian government aims to have at least 50,000 of these systems rolled out across the state.

Each system will have a combination of a 5kW solar PV and a 5kW/13.5 kWh battery. Once completed, the virtual power plant could provide up to 250MW to the grid and help meet up to 20% of the State's average daily energy requirements.

The virtual power plant will provide a number of benefits to the State. It will help reduce energy prices, lower carbon emissions and provide stability to the main electricity grid. The State Government has begun rolling out the system, which will take four years, starting with low-income households listed under the Housing Trust. There will be no cost to the tenants and the State Government plans to sell the electricity to these low-income households at significantly below the market rate.

Analysis shows that participating households can reduce their electricity bills by around 30%. Once the program has been rolled out across the Housing Trust homes, private residents will be able to apply to be part of the virtual power plant program. This project is funded through investors, the State Government, Tesla and a loan through the Renewable Technology Trust. The total estimated cost of the project is around A\$800 million.



HONOURABLE MENTION



Victoria's reverse auctions

WHERE:

Across Victoria

WHO:

Victorian Government and partners from among 15 proposals.

FIND OUT MORE:

<https://www.energy.vic.gov.au/renewable-energy/victorian-renewable-energy-auction-scheme>

Honourable mention goes to the Victorian Government for setting a 25% renewables target by 2020, and increasing to 40% by 2025. One of the ways the State government aims to achieve this is through Australia's largest, reverse auction for renewable energy worth 650MW. At the end of the tender process earlier this year, a total of 15 proposals were received by the Government worth 3500MW (six times the original target).

"Renewable energy is key to Victoria's future and we're not wasting a minute to drive new investment, create jobs and cut electricity prices." - Minister for Energy, Environment and Climate Change Lily D'Ambrosio (2017).

LOCAL COUNCIL PROJECT

Australian Local Council Divestment



The 40 local government councils around Australia that have committed to divest from fossil fuels have been selected as the innovative or best local government renewable energy/low carbon project having an important impact in Australia.

WHO:

See the full list of divested councils at www.gofossilfree.org.au

WHERE:

All over Australia

FIND OUT MORE:

www.gofossilfree.org.au/fossil-free-councils/

Australian local councils have been long-standing leaders when it comes to strong action on climate change, driven in large part by having to deal directly with climate change impacts. Whether it's dealing with rising sea-levels that damage coastal communities and infrastructure or shouldering the recovery efforts after severe events such as storms, droughts, floods and bushfires, councils are on the front lines of what climate change means for their residents. One of the most effective ways councils have taken action has been through divesting from fossil fuels.

Around Australia 40 councils have divested as part of the global fossil fuel divestment effort. That accounts for an estimated AUS\$7 billion and sends a strong market message that responsible investors are moving their money from fossil fuels. Some of the most notable councils that have divested so far include: Newcastle City Council (home to the world's largest coal port), the ACT Government including Canberra (the world's first capital city/territory to divest), Hobart City Council and the City of Sydney Council. The City of Fremantle Council, City of Ryde and Moreland City Council were also some of the earliest councils to divest from fossil fuels.

When it comes to tackling climate change, positions taken by the Inner West Council (an amalgamation of Marrickville, Ashfield and Leichhardt Councils in the greater Sydney area), Noosa Shire Council and the West Australian Local Government Association (WALGA) are of note.



Image courtesy 350.org Australia

**THE GLOBAL DIVESTMENT
MOVEMENT HAS COMMITTED
TO MOVING OVER US\$6
TRILLION FROM FOSSIL FUELS.**

WALGA, for example, has released a new policy statement calling for 'urgent action and strong leadership and coordination at all levels of government' when it comes to tackling climate change. Noosa Shire Council has also introduced a new policy that the Council will not be supporting any 'further applications or permits for coal / coal seam gas'. And the Inner West Council has updated its investment policy which now states that the 'council aims to proactively reduce its investment exposure to, including ADIs (Authorised Deposit taking Institutions) that lend to businesses in the fossil fuel industry'.

These councils are now part of a global divestment movement which includes close to 900 businesses, investment funds, unions, churches and universities from across 80 countries. The global divestment movement has committed to moving over US\$6 trillion²⁹ from fossil fuels and the value continues to grow weekly. Large financial institutions that fund fossil fuel projects and more importantly, large fossil fuel companies have taken notice of the divestment movement. Shell, in its annual report in 2017 recognised divestment as one of the top three risk factors to its future business. The other two risks were greenhouse gas regulation and legal challenges.

Local councils are uniquely placed to help Australia move rapidly towards a renewable energy powerhouse. One of the most effective ways they have been doing this is by divesting from banks and institutions that fund projects that harm the Earth's atmosphere. The leadership shown by these 40 councils will no doubt inspire other councils, funds and institutions in Australia to use fossil fuels divestment as a positive action they too can take to be part of the solution to climate change.

²⁹ <https://www.theguardian.com/us-news/2018/jan/11/new-york-city-fossil-fuel-divestment-spur-global-movement>

BEST PACIFIC PROJECT

Pacific Islands Renewable Energy Projects



Palau, Niue, Samoa and Tokelau were selected as having the most innovative or successful renewables projects in the Pacific supported by a regional company, investor or government agency.

Palau is rapidly switching to 100% renewables over the next 18 months to 2020, in what is likely to be the fastest transition of a whole country to renewable energy generation.

WHERE:

Palau, Niue, Samoa, and Tokelau

FIND OUT MORE:

<https://progrss.com/policy/20180728/gridmarket/> (Palau)

<https://gridmarket.com/2018/07/gridmarket-to-help-shift-palau-electrical-grid-towards-renewable-energy/> (Palau)

<https://bit.ly/2LUKVjl> (Niue)

<https://bit.ly/2KZzOB7> (Samoa)

<http://www.itpau.com.au/solar-powered-nation/> (Tokelau)

With the help of US analytics company Gridmarket, and environmental non-profit organisation EarthX, Palau will use artificial intelligence, predictive analytics and mapping platforms to plan the supply and installation of renewable energy infrastructure, including using online market and financing technology to secure the best suppliers. The systems will identify renewable energy and microgrid solutions for Palau's government buildings, commercial properties, and residential homes. Palau's initial goal of 45% renewable energy by 2025 is expected to be surpassed by a 100% transition by the end of 2020.

The Palau project is currently in its planning phase, with solar panel installations expected to begin before the end of 2018.

**"THE VOYAGE TO A RESILIENT AND SUSTAINABLE FUTURE IS NOT ONE THAT IS TAKEN ALONE, BUT BY A MOVEMENT OF CITIES, STATES, ISLANDS AND COUNTRIES WORKING TOGETHER TO SHAPE THE FUTURE WE WANT"
- PALAU PRESIDENT TOMMY REMENGESAU (2018)³⁰**

In Niue, New Zealand has supported climate action in the Pacific by delivering A\$200 million on climate-related projects to developing countries from 2015 to 2019. The funding is being delivered through bilateral development assistance and regional Pacific organisations with a core focus on climate change.³¹

³⁰ <https://www.saipantribune.com/index.php/palau-moves-away-from-oil/>

³¹ https://www.beehive.govt.nz/release/nz-supporting-resilience-niue-infrastructure-and-renewable-energy?_ga=2.63844719.1912648044.1533127987-amp-h0YwPpZ2hpyqen7eQ7d4qA



Tokelau became the first nation in the world to be 100% powered by renewables. Image courtesy ITP Renewables.

In 2013, the Niue Government supported the installation of a 52kW solar system. In 2014, this was expanded to a 200kW system with battery storage. In 2015, the Niue Government set the goal to have 80% of its renewable energy by 2025. In 2018, NZ Prime Minister Jacinda Ardern's Government pledged A\$5 million for solar power generation in Niue.

In Samoa the government and the United Nations Development Programme (UNDP) signed an agreement in August 2017 for a new renewable energy project with the Global Environment Fund known as 'IMPRESS' (Improving the Performance and Reliability of Renewable Energy Power System in Samoa) focusing on climate change mitigation.³² It is part of the government's ambitious target of having 100% renewable energy by 2025.

With more than US\$6 million from the Global Environment Facility (GEF) Trust Fund and co-financing from Samoa and New Zealand of over US\$46 million, the five-year project will focus on sustainable energy policy formulation and implementation, access to new renewable energy technologies and support for community initiatives for saving electricity.

On the small island nation of Tokelau, solar power and coconut biofuels run the national electricity grid. Tokelau is the first nation in the world to be 100% powered by renewables when its energy conversion was carried out in 2012, with the help of Australian company ITP Renewables.

³² <http://www.ws.undp.org/content/samoa/en/home/presscenter/pressreleases/2017/08/02/future-of-renewable-energy-shines-brightly-in-samoa-.html>

**EARLY ADOPTER OF RENEWABLE ENERGY
TECHNOLOGY**

Solahart

**WHERE:**

Headquartered in Rydalmere, NSW, operating nationally and globally

FIND OUT MORE:

www.solahart.com.au

Solahart has been selected as the business deserving recognition as an early adopter of renewable energy technology.

With more than 65 years in the solar business, Solahart was an early leader in Australia's renewable energy sector and a familiar brand to those who sought out solar technology long before most people knew it was a viable option for hot water heating. For many people, Solahart solar panels and systems on houses around the country were the first time they saw solar power in action.

Founded in Perth in 1953 by plumbing company SW Hart and Co, Solahart was born from the idea that the energy from the sun was the best way to provide hot water to households and businesses.

Solar hot water uses simple technology, is cost-effective and reliable. And with as much as 25% of a typical household energy demand going towards heating water, installing a solar hot water system is a logical use of renewable energy.

Since its inception, Solahart has been researching and refining its designs to improve the efficiency and range of its products. Along with its hot water systems, today the company also sells solar power systems and battery storage solutions.

The company has installed more than one million of its systems in homes and businesses across 70 countries, from suburban backyards around every Australian state and territory to the Everest Base Camp in Nepal, and also in Antarctica. In 2010 the company completed its first large-scale commercial project in the United Arab Emirates. Even Nelson Mandela's South African home had a Solahart system installed on the roof.

Solahart recently completed a 75kW commercial solar power system for a feedlot in Chinchilla Queensland. The system comprised 264 panels, with four inverters, and is saving the feedlot approximately A\$30,000 per year in energy costs.



Solarhart hot water systems installed in a camping ground at Uluru, Northern Territory. Image courtesy Solahart.



A Solarhart hot water system installed at Mount Everest base camp, Nepal. Image courtesy Solahart.

AUSTRALIAN UNIVERSITY RESEARCH

Martin Green and Andrew Blakers



Martin Green and Andrew Blakers were selected in the category of the Australian university, research group or individual academics that have delivered the most beneficial, renewable energy technology research into renewables and the low-carbon economy.

WHERE:
Canberra, ACT

FIND OUT MORE:
www.engineering.unsw.edu.au/energy-engineering/
<http://solar.anu.edu.au/>
www.cecs.anu.edu.au/research/energy

Martin Green is Scientia Professor at the University of New South Wales (UNSW) who is often referred to as the 'father of photovoltaics'. He has been working on solar PV since 1983 and has held the record for solar cell efficiency for 30 of the past 34 years. His university research group (School of Photovoltaics and Renewable Energy Engineering), which he established in 1974, is considered to be the largest and best known in the world when it comes to the research and advancement of solar PV systems. It was the first in the world to offer an undergraduate degree in PV engineering and has trained over 500 engineers.

The work of Professor Green and his university research group is widely credited for making solar PV globally affordable. In early 2018, he was awarded the Global Green Energy Prize^{*33} making him the first Australian to receive the award since its inception in 2002, beating Tesla's Elon Musk.

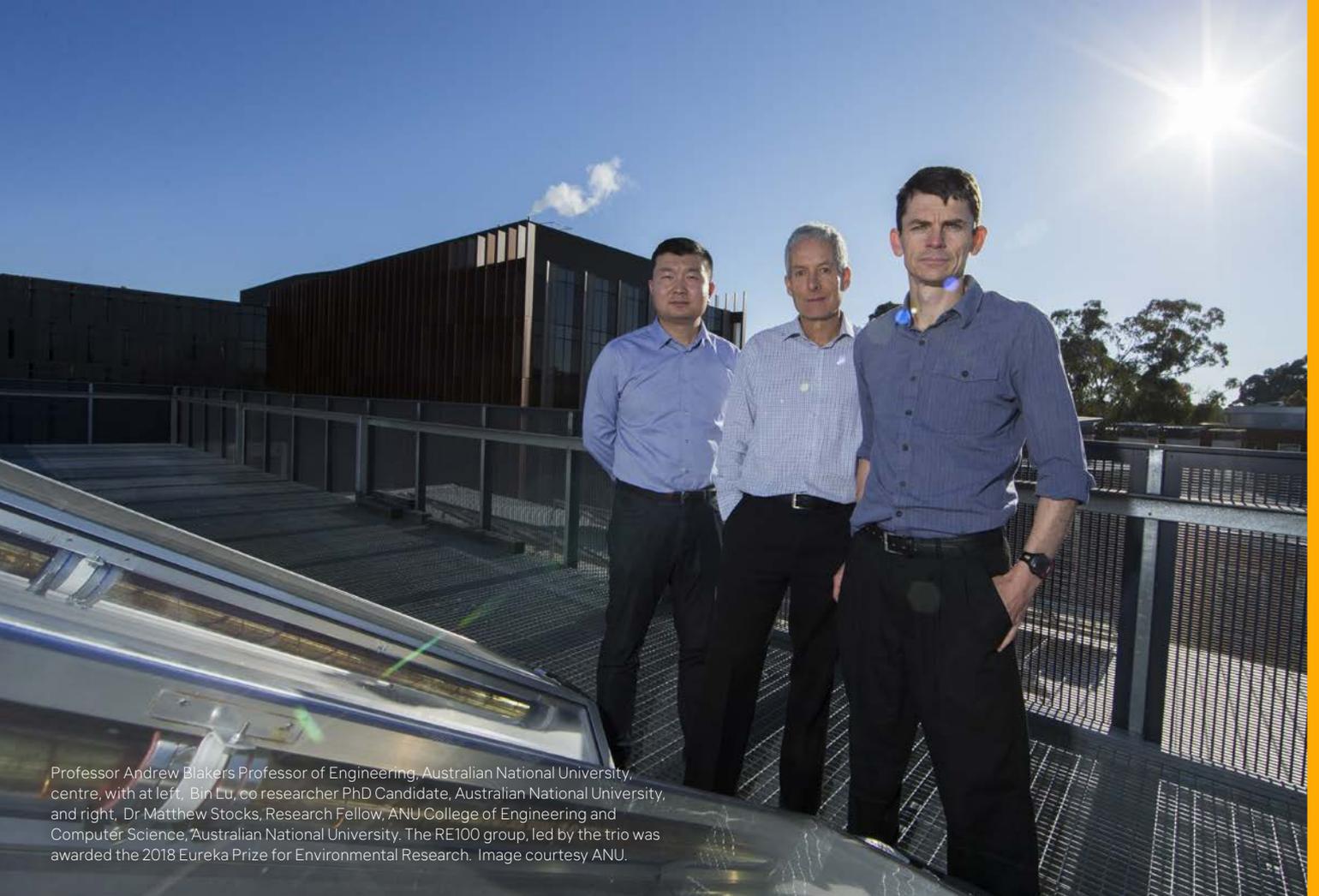
Andrew Blakers is a Professor of Engineering at the Australian National University (ANU), and completed his PhD under the supervision of Professor Green. His research interests span areas including solar PV systems and concentrated solar systems, energy policy and economics and pumped hydro energy storage. The contributions made by Professor Blakers to renewable energy technology have been significant. He was the lead inventor of the Passive Emitter and Rear Cell (PERC) silicon solar technology as well as the co-inventor of Sliver solar cell technology. Sales of PERC silicon solar exceeded US\$10 billion in 2017.

Professor Blakers has published more than 400 academic papers and patents. He has also been a key thought leader in Australia's transition towards renewable energy technology through his involvement in institutions such as Australian Renewable Energy Agency. Last year, Professor Blakers identified over 20,000 sites where pumped hydro energy storage systems could be developed to help with grid stability as Australia transitions rapidly towards 100% renewables. Developing pumped hydro sites also helps address the variability of renewables such as solar and wind.

33 <https://www.engineering.unsw.edu.au/energy-engineering/news/solar-expert-is-first-australian-to-win-international-energy-prize>



Martin Green UNSW. Image courtesy Martin Green.



Professor Andrew Blakers Professor of Engineering, Australian National University, centre, with at left, Bin Lu, co researcher PhD Candidate, Australian National University, and right, Dr Matthew Stocks, Research Fellow, ANU College of Engineering and Computer Science, Australian National University. The RE100 group, led by the trio was awarded the 2018 Eureka Prize for Environmental Research. Image courtesy ANU.

**BEST SCHOOL PROJECT
USING RENEWABLE ENERGY**

Solar my School

**WHERE:**

Sydney's eastern suburbs but plans to expand to other areas.

WHO:

Randwick, Waverley and Woollahra Councils. Project partners include NSW Department of Education, Solar Buddy and Clovelly Community Bank.

FIND OUT MORE:

www.solarmyschool.org.au

Solar my School was selected as the best school project using renewable energy being completed, operational or have funding completed by the end of June 2018.

Solar my School is a free local government-run initiative designed to help primary and secondary schools in the eastern suburbs of Sydney go solar and access the financial, environmental and educational benefits of clean, locally produced renewable energy.

Initiated in 2016, the program started as a joint commitment from Randwick, Woollahra and Waverley councils to reduce carbon emissions in the region, with solar identified as a key solution.

Schools are ideal sites for solar. They have large, often-unshaded roof space, high daytime energy demand and long tenure. Schools are also important knowledge hubs and important centres of our communities.

Solar my School was initially designed to overcome slow take up of solar in the eastern suburbs of Sydney by providing visible examples of success, and help unlock the benefits of renewable energy for schools and the wider community with a tailored, easy and transparent end-to-end solution.

As of late July 2018, more than 56 schools, including high schools and primary schools (public, private/independent and Catholic) are part of the program. Identified impact includes: 1870 kW of solar capacity, producing 2199 MWh of clean energy per year -- the equivalent of taking 463 cars off the road annually - or 1958 tonnes of carbon dioxide emissions a year not being released into the atmosphere. Schools participating in the program are estimated to be saving a combined total of about A\$306,00 each year on their energy bills.

The Solar my School initiative is an excellent example of neighbouring local government authorities working together to implement a significant renewable energy program that will have lasting local and regional benefits. It's a program that can be easily replicated across other council-owned areas as well as facilities including clubs, community facilities and childcare centres.



Students at Bronte Public School which had a 30kW solar system installed in February 2018 through Solar my School. Image courtesy Solar my School



**AUSTRALIA'S FEMALE CHAMPION FOR
STRONG ACTION ON CLIMATE CHANGE**

Nicky Ison



WHERE:
Sydney

ROLE:
Senior research consultant at
the Institute for Sustainable
Futures

FIND OUT MORE:
www.cpagency.org.au

Nicky Ison has been selected as the female leader championing strong action on climate change and/or adoption of renewable energy technology.

Ison is the founding director of the Community Power Agency and a senior research consultant at the Institute for Sustainable Futures (ISF) with expertise in the field of community energy, specialising in energy policy and governance, energy market reform, energy options assessment and community owned renewable energy.

Ison is the lead author of the *Repower Australia Plan: A policy blueprint to get to 100% renewables*, the *National Electricity Market Report Card* and the ARENA funded *National Community Energy Strategy*. In 2014, Ison was recognised on Westpac and the *Australian Financial Review's* 100 Women of Influence List.

She has spent over 15 years working and volunteering in the climate and clean energy sectors, including helped to found five organisations. She was the inaugural Chair of advocacy organisation Solar Citizens, on the founding board of the Australian Youth Climate Coalition (AYCC) and the inaugural coordinator of the Coalition for Community Energy (C4CE). She is a pioneer of the community energy sector in Australia and worked with and researched over 70 community energy projects in Australia, the US and Europe.

Ison undertook a self-funded study tour of more than 30 community energy projects and organisations across Europe and Australia. The aim of this tour was to bring to life what is now the Community Power Agency: an organisation that is helping make community energy a reality in Australia.

With years of experience within the community energy sector, Ison has worked tirelessly to pave the way for a climate-friendly and locally sourced energy future in Australia with a focus on how community ownership can help transform our historically fossil fuel-based system.



AUSTRALIA'S YOUTH CHAMPION

Anika Molesworth



WHERE:

Broken Hill, and Yoogali NSW

FIND OUT MORE:

www.farmersforclimateaction.org.au

www.climatewiseagriculture.com

Anika Molesworth has been selected as the youth leader championing strong action on climate change and/or adoption of renewable energy technology.

Molesworth is a farmer, researcher and a climate change activist. If she is not taking on her role as a PhD candidate researching in central NSW or conducting field work in rice paddies in South-East Asia, she may be at home in her family's arid outback sheep station in Far Western NSW.

The young farmer, academic and activist is not short of acredentials either. In 2015, Molesworth was named Australia's Young Farmer of the Year. In 2017 she was a NSW Finalist for Young Australian of the Year, and a finalist in the 2017 NSW Young Achiever Award for Environment and Sustainability. She helped create the NGO Farmers for Climate Action that provides a forum for sharing information and experience on how climate change relates to agricultural industries. Through her role in the 'Climate Wise Agriculture' program she has helped connect land managers to researchers to build resilience in farming communities.

She is a public speaker and educator and an advocate for sustainable farming, climate change and conservation. In 2015, she participated in discussions at the UN Paris COP21 talks.

Anika is a voice that questions the status quo and encourages current and future generations to have critical and creative perspectives on how we can find solutions to the pressing problems caused by climate change and its impact on farming, farming communities and the wider public.



AUSTRALIA'S INDIGENOUS/ TORRES STRAIT ISLANDER CHAMPION

Dr. Miriam-Rose Ungunmerr (AO)



WHERE:

Naiyu-Daly River
Northern Territory

FIND OUT MORE:

www.miriamrosefoundation.org.au

Dr. Miriam-Rose Ungunmerr has been selected as the indigenous leader championing strong action on climate change and/or adoption of renewable energy technology.

Dr. Miriam-Rose Ungunmerr from the Naiyu community near Darwin has been a long-standing advocate for the indigenous community, particularly, for indigenous youth. She was the Northern Territory's first, fully qualified Aboriginal teacher. Through advocacy and leadership for the indigenous community, she was appointed to the Federal Government's National Indigenous Council in 2004. In 2013, Dr. Ungunmerr established the Miriam-Rose Foundation to help indigenous youth learn to 'walk in two worlds', Aboriginal culture and mainstream Western culture.

With the help of Australian Renewable Energy Agency, the Northern Territory Government and the NT Utility and Water Corporation, Dr. Ungunmerr's community at Naiyu has now switched to 50% renewables.³⁴ The 1MW solar pv system, made up of 3200 panels and supported by a 2MWh lithium-battery storage unit has enough capacity to supply the day-time energy needs for the community. On top of this, people from the local community will be trained and employed in the ongoing operation and maintenance of the renewable energy system. It is also estimated the switch will save an estimated 400,000L of diesel each year.

"It's going traditionally. We've always been people that look after nature and now its amazing with having solar its in the mindset of ours in a traditional sense, it's going to help nature in the long run." - Dr. Ungunmerr (2017)

³⁴ https://www.powerwater.com.au/news_and_publications/news/2018/power_and_water_delivers_renewable_energy_and_storage_in_daly_river



Murray Yarran from Perth Noongar Foundation, gives the welcome to country at the groundbreaking ceremony for Northam Solar Farm in March 2018. Image Courtesy Carnegie Clean Energy

HONOURABLE MENTION



Perth Noongar Foundation

WHERE:
Western Australia

WHO:
Perth Noongar Foundation,
Indigenous Business Australia
and Carnegie Clean Energy.

FIND OUT MORE:
[www.communitynews.com.
au/hills-gazette/news/
northam-solar-farm-set-to-
be-a-game-changer-says-
carnegie-clean-energy-boss](http://www.communitynews.com.au/hills-gazette/news/northam-solar-farm-set-to-be-a-game-changer-says-carnegie-clean-energy-boss)

www.northamsolar.com/

Honourable mention goes to the Perth Noongar Foundation and Indigenous Business Australia for partnering with Carnegie Clean Energy to develop the Northam Solar Farm, a 10MW solar farm in Western Australia. On track for completion in the second half of this year, the solar farm will consist of 34,000 panels and produce enough electricity to power 3000 homes. Once completed, it will be the largest solar farm of its kind in Western Australia.



BEST NGO

Solar Citizens



WHERE:

Based in Sydney, operates Australia wide

WHO:

Solar Citizens represents the 6.5 million people who live in one of Australia's 1.8 million solar homes, the 15,500 people who work in the Australian solar industry and anyone who supports solar in Australia. Joseph Scales (CEO), honourable mention to Lindsay Souter, Solar Citizens Founder.

FIND OUT MORE:

www.solarcitizens.org.au

Solar Citizens has been selected as the NGO, charity or community group that has shown the best advocacy for the uptake of renewable technology in Australia.

Solar Citizens is an independent, community-based non-government organisation working to grow the solar sector in Australia. It advocates for the rights of the millions of solar infrastructure owners and supporters, with the aim of ensuring a major portion of our national electricity is generated from the sun.

Solar Citizens works across the political spectrum and advocates for all types of solar energy and related systems.

Solar Citizens won the campaign to secure a legislated minimum feed-in tariff for solar in Victoria, and was instrumental in the Independent Pricing and Regulatory Tribunal recommending doubling the solar tariff in NSW.

Solar Citizens worked to force the Australian Energy Market Commission to drop a proposal to charge a fee on solar owners feeding into the grid, and made the Federal Government back down on a plan to strip A\$1 billion from the Australian Renewable Energy Agency (ARENA).

After a five-year community campaign, it helped secure the South Australian Government's commitment to build one of the world's biggest solar thermal plants with storage in Port Augusta after the closure of the coal-fired power station.

From helping to secure the ALP's commitment to a 50% renewable target by 2030, Queensland's commitment to deliver a million solar rooftops, reversing attempts to cut feed-in tariffs in WA and winning many smaller battles to stop fees, injustices and red tape against renewable energy, Solar Citizens has been hugely successful in helping Australia move to clean energy.



Australia's love affair with rooftop solar is showing no signs of cooling. Image courtesy Pixabay

LONGEST RUNNING PROJECT

Rooftop Solar



Residential solar photovoltaics have been selected as the Australian renewable energy project, technology or service that has stood the test of time in helping Australia move to renewable energy nationally.

WHERE:

Across Australia

WHO:

Ordinary Australian households

FIND OUT MORE:

<http://www.cleanenergyregulator.gov.au/RET/Forms-and-resources/Postcode-data-for-small-scale-installations>

Residential rooftop solar has been a game changer when it comes to helping Australia move towards becoming a renewable energy nation. Falling solar panel prices, increased panel efficiency, the development of battery storage and the rising cost of electricity have seen Australians install solar pv systems on residential roofs in record numbers.

In-fact, according to the Clean Energy Regulator, 170,000 solar pv systems were installed in homes 2017 compared to just 120 in 2001. Today, there are over 1.8 million rooftops with solar pv systems in Australia. Most of these are residential. And the number of households switching to solar continues to grow rapidly. Solar pv installation reached 1.4GW capacity by mid 2018 while the total installed capacity was 1.3GW for all of 2017. The state of Queensland is currently leading the way, with eight of the top 10 postcodes for residential solar pv installation in Australia. Bundaberg took out the top spot.

At this rate, it is estimated that by 2030, 40% of Australian households will have solar pv. This is expected to have significant impacts on coal-based electricity in Australia.

MOST FORTUITOUS MISTAKE

Blaming South Australian blackouts on renewable energy



The blaming of renewable energy for South Australia's post-storm power loss has been selected as the most fortuitous mistake, useful learning or positive unplanned outcome from a negative event in the renewables/low-carbon sector.

EVENT:

Blaming South Australian blackouts on renewable energy, which, through a turn of events, led to development of the Hornsdale Power Reserve, aka the Big Battery project.

FIND OUT MORE:

<http://www.abc.net.au/news/2017-03-10/tesla-boss-elon-musk-pledges-to-fix-sas-electricity-woes/8344084>

On September 28, 2016, South Australia was hit by its worst storm in 50 years. The storm had winds of up to 260 kmph, saw 23 high voltage power pylons knocked out and triggered a cascade of electrical shutdowns that blacked out most of the state. To prevent the voltage and frequency fluctuations affecting Victoria, the interconnector lines joining South Australia to Victoria were also shut down. At 4.20pm, the entire state of South Australia lost power.

Normally a loss of power like this would logically have been blamed on the storm, namely that key infrastructure was damaged and unable to safely carry electricity. But South Australia's power generation is a mixture of wind, solar and gas, and has not included coal-fired power generation since the Port Augusta station was decommissioned in May 2016.

Conservative voices clamoured to blame "unreliable" renewable energy and "unrealistic" renewable targets for the state's power failure in the storm.³⁵ The day after the storm Coalition Prime Minister Malcolm Turnbull told the ABC that the Labor states paid little attention to energy security³⁶ and that intermittent renewable energy sources posed a "real threat" to energy security. His deputy, then National Party Leader Barnaby Joyce, argued that South Australia had become too reliant on renewable energy, wind in particular, and said the state's lack of coal-fired baseload power had contributed to the blackout.³⁷

³⁵ <https://www.theguardian.com/australia-news/2016/sep/29/jay-weatherill-accuses-barnaby-joyce-of-pushing-anti-windfarm-agenda-over-blackouts>

³⁶ <http://www.abc.net.au/news/2016-09-29/governments-prioritising-emissions-targets-over-energy-security/7888128>

³⁷ <https://www.theguardian.com/australia-news/2016/sep/29/jay-weatherill-accuses-barnaby-joyce-of-pushing-anti-windfarm-agenda-over-blackouts>



Power pylon felled by the storm in September 2016.
© 2016 ABC News Tom Fedorowytch

Senator Nick Xenophon led calls for an inquiry by the Australian Energy Market Operator, (AEMO)³⁸ which duly found that South Australia's blackouts were the fault of the power lines coming down and not the type of energy generated.

Media coverage around the blackout and the blame game it inspired caught the attention of Tesla's Elon Musk, who made an irresistible pitch to South Australia's state government via a Tweet offering to build the world's biggest lithium-ion storage battery, a 100MW system, and do it within 100 days or it would be free.

The offer was accepted and the battery system, powered by Neoen's Hornsdale wind farm, was up and running in 63 days.

Those blaming renewable energy after the storm probably could not have foreseen the consequences of their efforts but they did the sector a huge favour by providing the opportunity for Tesla and Neoen to demonstrate how fast, efficiently and reliably a transition to renewable energy with battery storage can be.

³⁸ <http://www.abc.net.au/news/2016-09-29/governments-prioritising-emissions-targets-over-energy-security/7888128>

BIGGEST BLOCKER ON CLIMATE ACTION

The Minerals Council of Australia (MCA)

**WHERE:**

Headquartered in Canberra to enable easy access to federal politicians, the Minerals Council of Australia can also be found spruiking a climate denial agenda in right-wing media outlets.

WHO:

The Minerals Council represents the mining industry in its various forms and gets it money from big names including Rio Tinto, BHP and Gina Rinehart, although BHP³⁹ has publicly questioned whether it should remain a member given the MCA's aggressive pro-coal stance but continues, for the moment, to provide significant funding as a member

FIND OUT MORE:

www.minerals.org.au

The Minerals Council of Australia has been selected as the institution, person, program or action that has been the biggest blocker to Australia's move to a low carbon future.

As a lobby group, the Minerals Council of Australia wields a powerful punch and has a long history of pro-coal advocacy. While the new boss of the council, Tania Constable, in August 2018 vowed to take a 'technology neutral' stance, time will tell whether this is spin or a new policy direction.⁴⁰

Funded by the very deep pockets of the mining sector, the MCA, as its own website boasts "has a reputation for uncompromising advocacy on the issues that matter most to Australia's mining sector and related industries". This "uncompromising advocacy" takes the form of continued campaigning for fossil fuel subsidies, expensively produced reports and sham studies about the projections for coal demand,⁴¹ misleading advertising campaigns, closed-door lobbying against the renewables sector and running interference against scientists and climate activists. It has been responsible for toppling a prime minister⁴² over the mining tax, destroying the carbon tax, lobbying for new coal-fired power stations and against renewable energy.

This year the MCA told a Senate committee inquiry about the political influence of donations that it gave money to political parties to buy access so it could "update members of parliament about conditions in the Australian minerals industry and the policy priorities of the MCA." At the same time, the MCA advocated for environmental charities to be severely restricted⁴³ from spending donations on advocacy. It even campaigned to tighten conditions on charities receiving foreign donations, despite it being a charity itself and despite a third of its members being foreign owned, simply because it considered doing so would stymie its

39 <https://www.afr.com/business/mining/minerals-council-cedes-climate-ground-to-bhp-rio-20180314-h0xqk4>

40 <https://www.afr.com/business/mining/new-mca-boss-vows-technology-neutral-energy-policy-20180723-h131pd>

41 <https://reneweconomy.com.au/minerals-council-still-dangerously-wrong-on-coal-and-climate-24581/>

42 <https://www.smh.com.au/business/a-snip-at-22m-to-get-rid-of-pm-20110201-1acgj.html>

43 <https://www.theguardian.com/business/2017/sep/01/mining-lobby-calls-for-controls-on-environmental-charities-spending-on-advocacy>



The Minerals Council of Australia's "uncompromising advocacy" for the mining industry is often at the cost of the renewables sector. Image courtesy Eddie O'Reilly.

environmental NGO critics. The MCA's attacks on charities were so extreme that BHP, their biggest member and contributor, publicly attacked them for this.⁴⁴

DISHONOURABLE MENTION

The so-called Monash Forum, a group of pro-coal MPs, including former PM Tony Abbott, ex-deputy PM Barnaby Joyce, Craig Kelly, Eric Abetz and Kevin Andrews. The forum⁴⁵ has brazenly demanded that the National Energy Guarantee (NEG) prove it is "technology neutral" by including coal-fired power, and is agitating for taxpayers to pay \$5 billion for the construction of a new coal-fired power station that no one wants.

⁴⁴ <https://www.theguardian.com/environment/2017/nov/08/bhp-opposes-minerals-council-of-australias-war-on-activist-rights>

⁴⁵ <https://theconversation.com/the-pro-coal-monash-forum-may-do-little-but-blacken-the-name-of-a-revered-australian-94329>

The number 350 is about climate safety: to preserve a livable planet, scientists tell us we must reduce the amount of carbon dioxide in the atmosphere to below 350 parts per million. 350.org is a grassroots global movement working to unite the world around solutions to the climate crisis—the solutions that science and justice demand.

We're moving Australia beyond fossil fuels.

350.org Australia,
50 Reservoir St,
Surry Hills, Sydney NSW, 2010

 www.facebook.com/350.orgAustralia

Disclaimer

While the Information contained in this report has been presented with all due care, 350.org assumes no responsibility or liability for any errors or omissions in the content of this report.

www.350.org.au