

Smart Energy

AN OFFICIAL SMART ENERGY COUNCIL PUBLICATION



Yes

The Voice: A chance to listen, understand and act
Positioning Australia on the international stage
SEC promotes Australia-India partnerships at G20 meetings
Crucial time for critical minerals
Shaping a National Hydrogen Strategy
Solar powered coral reef Biobank

VOLUME 43. ISSUE 171 SPRING 2023

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*The Smart Energy Council acknowledges
the Traditional Owners and Custodians
of the lands on which we work and
pays respect to Indigenous Elders past,
present and emerging.*

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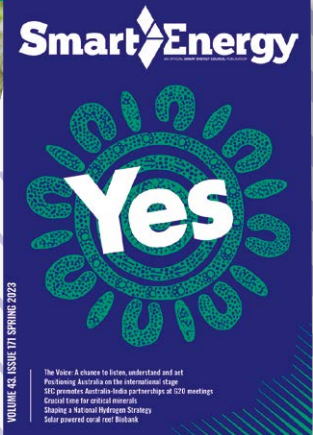
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WELCOME



*John Grimes, Chief Executive
Smart Energy Council*



A RAPID TRANSITION away from fossil fuels, and meaningful global emissions reductions, can only happen through local, national and international action.

Local action is springing up everywhere. It is people-driven, practical and community-centred. Just look at how many local councils in Australia have declared a climate emergency, or how many communities want to band together to electrify everything with renewable energy.

We know when we get the policy settings right at a national level meaningful action is possible. We also know how hard it is to gain national consensus, and what happens if we get it wrong. And over the past 20 years in Australia we have been getting climate and energy policy wrong most of the time.

What has struck me this year is just how little progress is being made to reduce emissions internationally. Indeed, I am increasingly pessimistic that meaningful global action is possible. It may well come, but only when the planet is well and truly in the grip of climate catastrophe.

I saw it first-hand at the G20 talks in India in July. Russia, Saudi Arabia, and even China holding back international consensus and progress. Every statement watered down to the very lowest common denominator.

It is time to change tactics. It is time for a coalition of the willing. To find like-minded

countries and to form strategic renewable energy alliances. A good example is in Brazil where I recently attended Intersolar Latin America. Fantastic renewable resources. An 80%+ renewable grid. A major iron ore exporter like Australia. An agricultural powerhouse, like Australia.

It is time for Australia and Brazil to form a strategic alliance. To work together to process iron ore onshore with renewable energy, and export embedded solar energy. To create a global market for renewable fertiliser, not made from fossil gas, but from renewable hydrogen, converted into renewable ammonia.

To work with our partners in India to unleash Australian innovation, and with the US to provide the feedstock for the Inflation Reduction Act transition in that country. Let's go fast with those who want to go with us. Europe, the Pacific, Indonesia, Japan. Anyone is free to join, but we can no longer wait.

IN MY VIEW

*Andrew Dickson, Development
Director at CWP Global*

THE DATE FOR 'THE VOICE' referendum has been announced: 14 October. Should I vote Yes or No? What's it all about anyway?

In my 20 years as a renewable energy project developer, I've visited Parliament House numerous times to meet with government ministers and their advisors, and I've met government bureaucrats many, many times. I've been advocating for the best interests of my industry and my projects. In my view, the Voice is about giving Indigenous Australians a better ability to advocate for their own interests, in the same way as I have been doing for years for my own interests.

Indigenous Australians are deeply disadvantaged. Many Australians want this to change, want reconciliation, want a future where our Indigenous brothers and sisters have equality, respect and opportunity.

Renewable energy projects present many opportunities which can materially

benefit Indigenous communities economically, culturally and socially.

I've experienced firsthand how renewable energy projects have given Indigenous people the chance to get back onto freehold farmland for the first time in generations to conduct heritage surveys. I've seen renewable energy projects expand northwards and westwards onto the 'Indigenous Estate', where Traditional Owners have stronger rights including Native Title determinations. Renewable energy projects on these lands can provide enormous, long-term opportunities for Indigenous communities.

These opportunities are different to those available through extractive industry projects (mines). Whereas mines typically provide a 'sugar hit' of benefits until the resource is depleted, wind and sunshine are infinitely renewable, enabling multi-generational benefits. Where extractive resources are located under or near areas of cultural significance, those sites can be damaged or destroyed, as occurred



recently at Juukan Gorge in the Pilbara. In contrast, wind turbines and solar panels can easily be located well away from sensitive areas.

And recently a number of large renewable energy projects have included Traditional Owners on their corporate boards, shifting from the historical model of treating Indigenous communities as external third parties needing to be engaged, to core partners with whom we need to align, understand and work.

And that's the point of the Voice and the upcoming referendum. To give everyone a say and to create a better future for everyone, together.

Yes!

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INDUSTRY DEVELOPMENTS

CHANGING OF THE GUARD The Smart Energy Council is pleased to announce former Federal Shadow Environment Minister **Terri Butler** has been unanimously elected **President of the Smart Energy Council**. The posting follows the retirement of President Steve Blume on 30 June 2023.

Terri Butler stated "The Smart Energy Council is a bold, passionate, persistent and powerful voice for renewable energy and the smart energy transition to address climate change... I look forward to working with our 1,000 member companies, State and Federal Governments, Parliaments and with civil society to ensure Australia moves swiftly and successfully to our smart energy future."

Terri credited outgoing President Steve Blume for his decade-long successful leadership of the SEC.

Read more on pages 44-46.



QUEENSLAND ASPIRES TO BE A RENEWABLE ENERGY POWERHOUSE The Queensland Government's draft 2023 Queensland Renewable Energy Zone Roadmap outlines the pathway for connecting 22GW of new wind and solar generation, representing an eight-fold increase in renewable energy.

The roadmap, which identifies locations of 12 potential future REZs to be developed in phases to 2035, is a key component of the \$60 billion Queensland Energy and Jobs Plan which sets out a pathway supported by grid-scale batteries and pumped hydro storage for the state SuperGrid and facilitates emerging green opportunities including renewable hydrogen, battery manufacturing, resource mining and metal refining.

Queensland is providing \$500m for CleancoQ to develop new solar and wind farms in Central Queensland that will generate enough clean energy to power the equivalent of every household in Brisbane and help Queensland reach its renewable energy targets earlier than planned.

The Queensland government credits its state ownership of energy assets and transmission lines for fast tracking projects to meet its 50 per cent renewable energy target by 2028, two years earlier than the



Acting Premier of Queensland Steven Miles with SEC staff and President Terri Butler

2030 mooted, and beyond that 70 per cent by 2032 and 80 per cent by 2035.

Addressing the Smart Energy Council's Queensland conference in early September Acting Premier Steven Miles said "Owning your energy assets means you can shape your transition.

"If we don't embrace renewable energy Queensland will be left behind... that's why we're transforming our energy system, to create more jobs, lower power prices and secure Queensland's renewable energy future... we're embracing the energy opportunities of the next decade.

"While other states may have gained a sugar hit from the sell-off of their coal-fired generators, we're able to better manage the wind-down. Queensland is well-positioned and well-resourced to not only generate clean, green renewable power but also to transmit, transport, store and to export it.

"Our goal is not just to be a leading producer of renewable hydrogen... Gladstone is to be the global capital."

In a video presentation from London, Mick de Brenni, Queensland Energy, Renewables and Hydrogen Minister remarked "The climate wars might be over, but the energy war has just begun."

He also states renewable energy presents jobs and opportunities including high-value battery manufacturing, critical minerals, biofuels, hydrogen and materials recycling in the regional communities.



ERARING'S POLLUTING COAL PLANT Industry experts, doctors and community members have called on the New South Wales Government to avoid extending the life of the coal-fired Eraring power station at Lake Macquarie. Tim Buckley of Climate Energy Finance and author of *The Lights will Stay On* says the NSW government would need to fork out at least \$200-400 million annually to prop up the high-polluting coal plant while Stephanie Bashir of Nexa Advisory declares a smarter approach would be to accelerate the rate at which we deploy new renewable energy resources to benefit energy users and the nation in the coming years. *Read more on page 18.*

In further bad news the closure of the 1.32GW Vales Point coal-fired power station in NSW has been pushed back four years, from 2029 to 2033.

AEMO'S ANNUAL ELECTRICITY STATEMENT OF OPPORTUNITIES

(ESOO) calls out Australia's ageing and increasingly unreliable coal generators and their "historically poor performance" which will be further put to the test in summer. The latest 10-year outlook emphasises the need to accelerate the transition to renewables and concludes on-time big battery storage projects would ensure reliability in the face of Eraring's closure in two years.

The report however foresees likelihood of energy "reliability gaps" in all states in coming years, starting with Victoria and South Australia in summer followed by NSW from 2025 and Queensland from 2029.

John Grimes said the AEMO report "demonstrates the need for decisive action from all Australian governments in rolling out smart energy as soon as possible... governments and regulators need to make it easier for Australian families, businesses and the energy grid to access solar and renewable energy storage.

"Let's stop doing dumb things that delay action and make things worse. Let's stop propping up polluting coal and pretending that gas has a future. We have enough renewable energy and renewable energy storage projects ready to go to match and beat Eraring."

The Smart Energy Council welcomes the **FEDERAL GOVERNMENT'S CRITICAL MINERALS STRATEGY** and \$500 million pledge for the Northern Australia Infrastructure Fund that will build and develop a value chain that takes advantage of Australia's abundant resources.

The new funding will add to the National Reconstruction Funds \$1 billion for resources value add as well as \$3 billion for renewables and low emissions technologies.

"The Federal Government's Critical Minerals Strategy is showing international investors and partners that Australia is ready to be a global producer of raw and processed critical minerals," John Grimes said.

The Smart Energy Council hosted a Western Australia Renewables and Critical Minerals Superpower Summit (pictured) where parties

GOLDEN PROJECT The 756MW Golden Plains wind farm west of Melbourne is taking shape with the first of the 122 turbines arising alongside foundations for the big battery. Project developer TagEnergy plans to install 215 turbines in all, which on completion will constitute Australia's largest wind farm at 1,300MW and the largest single wind farm in the southern hemisphere while delivering a significant 9% of Victoria's energy needs.



IMAGE: GOLDEN PLAINS WIND FARM

In related news **Offshore Wind Energy Victoria** has been established to develop a formal competitive procurement process for the first tranche of offshore wind energy capacity in 2025. The industry is projected to generate over 6,000 jobs and play a pivotal role in Victoria's journey towards achieving 95 per cent renewable energy production by 2035 and attaining net-zero emissions by 2045.

Victoria's nation-leading targets of at least 2GW of offshore wind capacity by 2032, 4GW by 2035 and 9GW by 2040 has attracted offshore wind investment from Australia and across the globe.

Victoria has now joined Denmark, Spain, Germany and the United Kingdom in the **Global Offshore Wind Alliance** which brings together international governments, the private sector, organisations and other stakeholders to accelerate the deployment of offshore wind power. The Alliance's mission is to achieve a total global offshore wind capacity of at least 380GW by 2030, with 35GW on average each year across the 2020s and a minimum of 70GW each year from 2030.

encouraged the Government to continue ambitious spending on developing Australia's critical minerals value chain to establish the nation as a renewable energy and critical minerals superpower. *Read more on page 16.*



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INDUSTRY DEVELOPMENTS

BIG BATTERY Upon completion in late 2024 **Rangebank BESS**, being developed by Eku Energy and Shell Energy in Melbourne's south-east, will provide 200MW/400MWh capacity of reliable and flexible energy to Victorians, and contain enough storage capacity to power 80,000 homes for an hour during peak periods. The Rangebank BESS will be built, serviced and maintained by Fluence using its sixth generation Gridstack energy storage technology on a 19,250sqm footprint.



A NEW FEDERAL GOVERNMENT \$100 MILLION COMMUNITY ENERGY UPGRADES FUND which will co-fund upgrades with local councils to deliver energy upgrades and bill savings for community facilities like local pools, sporting clubs and community centres has the potential to unlock over \$200 million in high-impact energy upgrades such as replacing energy-intensive heating in council pools with heat pumps, and energy efficient lighting and battery storage at sporting fields, libraries and community centres.

The \$100 million funding boost from the Albanese Government adds to the \$1.6 billion Energy Savings Package delivering upgrades for homes and businesses in the 2023-24 Budget.

Assistant Minister for Climate Change and Energy, Jenny McAllister commented "Local governments are on the front line of combating climate change, which is why we're partnering on major projects to save energy and decarbonise public facilities."

The first stage 750MW of a 3GW wind, solar and batteries project in the Pilbara will be developed by the **YINDJIBARNDI ENERGY CORPORATION**, a new partnership between the Yindjibarndi Aboriginal Corporation and international renewables developer Acen Corporation.

The project designed to power major industrial energy users in the Pilbara led by traditional owners of Yindjibarndi lands is destined to become the largest Indigenous-led renewable initiatives in Australia.

A detailed report penned by Sophie Vorrath for *RenewEconomy* explains the project ensures Yindjibarndi approval of proposed project sites, Yindjibarndi equity participation of 25% – 50% in all projects, preferred contracting for Yindjibarndi-owned businesses, and training and employment opportunities for Yindjibarndi people.

YAC chief Michael Woodley said "The agreement ... provides long-term economic benefits to our community, while also ensuring that we can protect and preserve all areas within Yindjibarndi Ngurra which are of cultural, spiritual and environmental significance to us.

"The partnership will also create sustainable, long-term training and employment opportunities on our Country for our people."

Applications open on 25 September for the **INNOVATION AND EARLY CAREERS SKILLS EXCHANGE PILOT** arising from the Australia-United Kingdom Free Trade Agreement (A-UKFTA) paving the way for Australian businesses to access skilled staff from the United Kingdom without a sponsorship or labour market testing requirement.

www.dfat.gov.au

VETS FOR CLIMATE ACTION are calling on governments to spare a thought for our feathered and furry friends ahead of fossil fuel interests in Beetaloo Basin. In early August they gathered at Parliament House to urge government leaders to develop strong emissions reduction programs that align with climate science, and to have the **moral strength to withstand pressure from international fossil fuel companies, whether gas, oil or coal.**

Katherine-based vet Dr Samantha Phelan said "The flow of underground 'Beetaloo' water supports rivers, springs, large waterholes and sacred sites locally and also hundreds of kilometres away. The region is home to 353 vertebrate fauna, 691 invertebrate fauna and 1,818 plant species. Fifteen species of fauna are listed as threatened and they may all be harmed or become extinct directly by fracking."



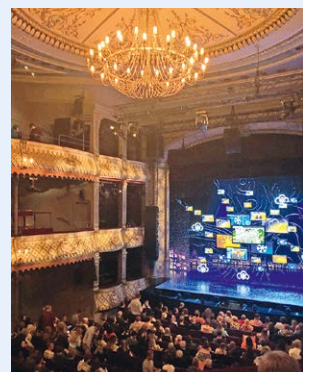
AUSTRALIAN PARENTS FOR CLIMATE ACTION (AP4CA) has filed a claim in the Federal Court of Australia against EnergyAustralia for misleading over 400,000 consumers about the climate impact of its products. AP4CA alleges that EnergyAustralia is marketing its Go Neutral product as "carbon neutral" and having "a positive impact on the environment" when it is primarily generated by burning fossil fuels, which the company claims to have "offset" simply by buying carbon credits. EnergyAustralia is Australia's third largest greenhouse gas emitter, producing 16.2 million tonnes of CO₂ equivalent in 2021/22.

ap4ca.org/greenwashing

MEANTIME ARTISTS AND CLIMATE ACTIVISTS are calling for an end to the "bad romance" between gas companies and arts organisations including symphony orchestras, major festivals, museums and galleries, and dance and theatre companies.

Swinburne University of Technology researchers found 6.3% of the 127 major arts organisations examined in their report had partnerships with fossil fuel companies undertaking coal, gas, and oil extraction.

Bad Romance: Coal, gas, and oil sponsorship in the Australian arts industry was commissioned by climate activist group 350 Australia.





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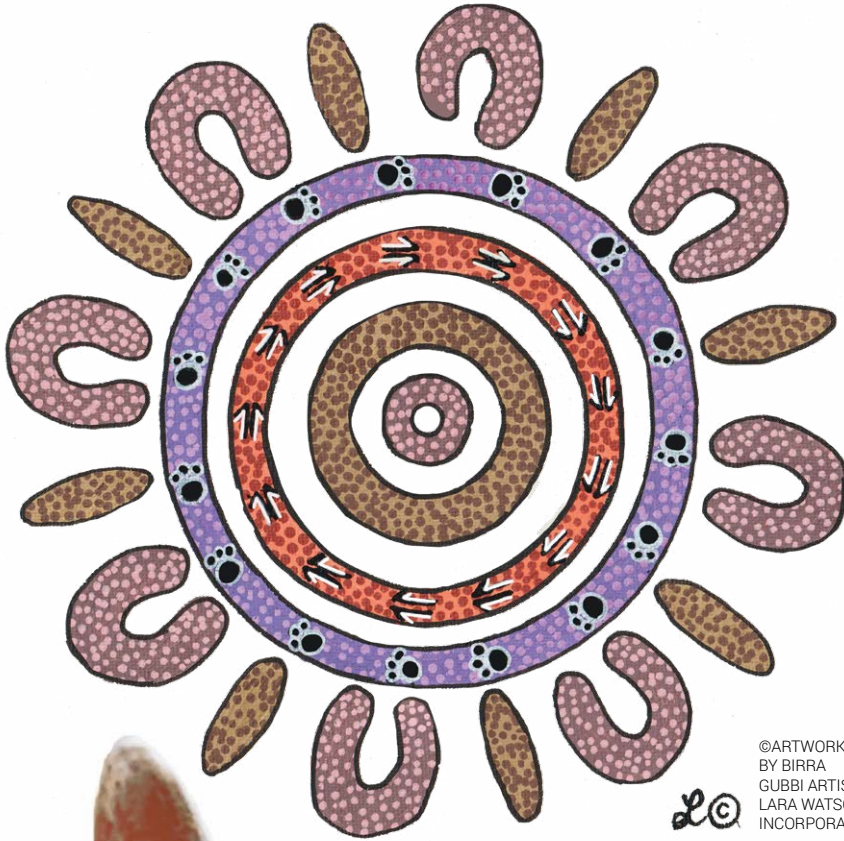
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VOTE YES

A FAIR HEARING FOR THE VOICE



AUSTRALIANS HAVE BEEN BOMBARDED

in the lead-up to the Voice referendum, with commentary ranging from well-informed to somewhat misleading to downright obfuscation. We're somewhat exasperated by all the jostling and scaremongering but at the same time better versed in referendums, having been reminded that since Federation just eight of the 44 proposals for constitutional change have been approved.

Of these the most significant was in May 1967 when nine in ten Australians voted to change the constitution, paving the way for Aboriginal and Torres Strait Islander people to be counted as part of the population. (Astonishing to think the country's native population with its 65,000-year-old history was previously unaccounted for!)

A Voice to Parliament enshrined in the Constitution is regarded by many as a logical next step

The question at the ballot box on October 14: *A proposed law: to alter the constitution to recognise the First Peoples of Australia by establishing an Aboriginal and Torres Strait Islander Voice. Do you approve this proposed alteration?*

and this was the key recommendation from hundreds of First Nations people in 2017 through the Uluru Statement that followed the Makarrata Commission for agreement-making and a truth-telling process.

What is the Voice? Nothing more, nothing less than a body of First Nations people that would advise Parliament, and the executive government on issues that affect them. Advisory body participants would not be members of parliament and would not make decisions or administer funds, programs or land.

Not too threatening then? Simply asking to be heard. Yet support is waning with the No camp seeding doubt, confusion and disapproval. By early September support had dropped to around 44% Yes (very much skewed to younger people who are a resounding 'yes') and 39% No (very much older, conservative members of the community) and 17% 'don't knows'.

Recently elected Smart Energy Council President Terri Butler who wholeheartedly supports implementation of the Uluru Statement from the Heart and was on a panel with Statement signatory Thomas Mayo had this to say: "The Uluru Statement from the Heart is a generous invitation from First Nations leaders to the whole country, to find a way to heal long-established wounds. The proposed Voice to Parliament is an important part of the Statement from the Heart and is ultimately a very modest request.

"All Australians will benefit if our constitutional and political architecture includes within it a formalised arrangement for ensuring that First Nations peoples are at the table when the future of the nation is being considered," Terri said.

"So too will we benefit if the Australian constitution, a young document, is able to recognise the civilisation that existed on this land long before it was conceived. This is a mark of understanding and respect.

"I'll be voting yes for a constitutionally enshrined Voice."

'Truth-teller and myth-buster' Thomas Mayo says "I think the only reason this would fail is if the no campaign has successfully confused enough people or made them fearful of this change. I don't believe there'll be a sentiment among a majority of Australian people to reject recognising us or giving us a voice."



Indigenous leader Thomas Mayo's strong messages resonate in *The Voice to Parliament* handbook co-authored with Kerry O'Brien and brilliantly illustrated by cartoonist Cathy Wilcox. Our favourite (cartoon) below.

As a leading advocate Mayo says it's time to collectively let go of the burden of a colonial past and move towards a nation that accepts its Indigenous heritage.

"What drives me fiercely is the practical reason that I know the Voice is key for improvements... it is a simply a modest proposal for an advisory voice and to be recognised. We have a lot to tackle, especially regarding housing, justice, education and infrastructure for communities," Mayo says.

"We need to have a say in all this ourselves. We know that when Indigenous people are listened to by decision-makers that the policies and programs get better outcomes."

Unfortunately Mayo was too busy to talk to *Smart Energy* directly but we fully accept his time is better spent addressing the masses.

Also out on the hustings as volunteer in Bradfield's 'Yes 23' campaign in north Sydney is Nicolette Boele who's in lock-step with Liberal MP and highly compelling 'Yes' proponent Julian Leaser who, referring to the 91% yes vote in 1967 for Aboriginal recognition, states "This will correct

a 'flaw' in the constitution, we should finish the job and acknowledge the first peoples of Australia in the constitution".

Leaser referred back to the Mabo decision of 1992 when the High Court of Australia recognised that a group of Torres Strait Islanders, led by Eddie Mabo, held ownership of Mer (Murray Island) which stirred up fear over the 'front yard being taken' which just hasn't happened.

"You probably won't even notice the change with the Voice," he said.

Nicolette told *Smart Energy*, "As a non-indigenous city dweller in her 50s it's evident we have been making decisions *for* ATSI people for 250 years rather than *with* them.

"To me this is unconscionable. It's time we allowed voiceless people to be heard. **In 1967 they asked to be counted; in 2023 they asked to be heard.**"

But the process has been made much more complex than it is, she observes, "and as a result the No's can't really articulate their fears; some say there's not enough information, some fear the power of the advisory group and there's some blatant racist attitudes too."

Nicolette agrees with Terri Butler that the Uluru Statement from the Heart – to create a plan for ATSI people to develop changes for the better – is a sensible and simple offer. "They have stepped up to



"Recognition is about an acknowledgement of Aboriginal and Torres Strait Islander people as the first Australians - custodians of 65,000 years of continuous culture."

Rachel Perkins

– Yes23 Co-Chair, Filmmaker, Arrernte/Kalkadoon woman



This is a cartoon by Cathy Wilcox from *'The Voice to Parliament Handbook'* by Thomas Mayo and Kerry O'Brien published by Hardie Grant Explore

The Voice is an opportunity to make policies with Aboriginal and Torres Strait Islander peoples. Creating a mechanism for First Nations peoples to work in partnership with the government, make decisions and deliver solutions together. Enshrining the Voice into the Constitution will create a formal relationship between First Nations people and the government.



take responsibility. This is significant; as an experienced management consultant, I've observed when you put people at the centre of decisions that impact them you get better outcomes.

"And as a potential future parliamentarian, I'd love the chance to have that input directly into parliament before decisions are made on behalf of ATSI people," said the Independent hopeful who suggests the Voice would focus predominantly on education and housing but would also be constructive for the renewable energy industry.

Renewables

"As a once-in-a-century change in our economy moving from a petro- to an electro-state, off fossils and onto renewables, we are shifting from centralised to decentralised power. This should enable more autonomy and tools for people in communities throughout Australia to generate, store and access energy when they need to in a clean and safe way," Nicolette says. "This gets to a smarter, more sharing economy, it's more positive for all."

She also cited the 'real challenge' of accelerating global decarbonisation and Australia's key role in opening new mines for

manganese to cobalt and lithium which needs to be done with respect and together with first Australians. Not just consent, but intentionally seeking opportunities to share in project equity and apply local knowledge in post-mine restoration.

Indeed, a Yes vote on the Voice referendum would have several ramifications on decision-making in renewable energy and ensure that Indigenous Australians have a say in matters that affect them. This would lead to increased representation of Indigenous perspectives in decision-making processes related to renewable energy.

There would likely be a push for renewable energy policies that align with Indigenous values, such as respect for the environment and a focus on community well-being.

Importantly, an Indigenous Voice would foster collaboration and partnerships between Indigenous communities, government bodies, and renewable energy stakeholders, sparking more inclusive and community-driven approaches to renewable energy development and decision-making.

It's a process that has already begun through the First Nations Clean Energy Network, established to ensure the renewable energy transition occurs in partnership with First Nations communities, sharing its jobs and economic benefits, protecting sacred sites and respecting native title.

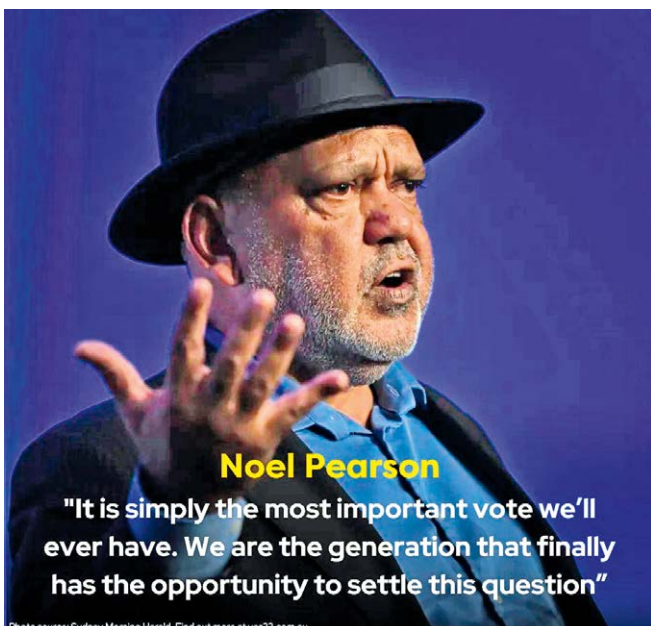
No longer the silent minority

The First Nations Clean Energy Network sets the standard for a Voice by connecting community, government and industry to shape renewables' future and ensure Indigenous people play a central role in renewable energy while benefitting from the opportunities created.

The Federal Government has committed \$5.5 million to develop the First Nations Clean Energy Strategy which progressed its agenda during roundtables in late August.

Network steering group member Chris Croker told the Smart Energy Council (which was a launch partner of the Network) that better engagement with Indigenous peoples presents a win-win; while Federal Assistant Climate Change and Energy Minister Jenny McAllister declares First Nations people are essential to the country's clean energy transition.

Indigenous advocate electrical engineer Ruby Heard of Alinga Energy Consulting finds herself increasingly involved in Network projects,



Noel Pearson

"It is simply the most important vote we'll ever have. We are the generation that finally has the opportunity to settle this question"

Photo source: Sydney Morning Herald. Find out more at [yes23.com.au](https://www.yes23.com.au)



facilitating community-led remote microgrid projects for Indigenous communities in WA's Kimberley region. It's far removed from her years in San Francisco with global engineering and architecture firm Arup where she specialised in complex solar arrays and building-integrated PV for Google. But she's now where she wants to be.

Over in Canberra is prominent SEC member business EPC Solar, a majority-owned Indigenous company whose Daryn Stocks expresses his commitment to honouring the continuing contribution of Aboriginal and Torres Strait Islander people to society, and acknowledges their unique cultural and spiritual relationships to the land, waters and seas.

For Daryn, a Yes vote is about recognition, listening and respect: Aboriginal and Torres Strait Islander people should always have a say in the policies and challenges that affect their communities and be listened to.

"Listening to local communities will result in better outcomes and a better future for Aboriginal and Torres Strait Islander people. They have cared for this land for thousands of years and understand their Country," Daryn told *Smart Energy*.

"We acknowledge the land we live and work on always was and always will be Aboriginal land. I'm so proud to live in Australia where we have such a rich cultural heritage – Aboriginal and Torres Strait Islander people have deep connections to this land and have protected it for over 65,000 years.

"My team and I will continue to listen and work with communities on projects they want, to deliver results that will benefit them.

"Our connections enable us to work with Traditional Owners and communities to consider how solar and renewable energy could benefit their community and how it could best work on their Country," Daryn said. "We need to educate ourselves about the land we are working on so as to protect sacred sites and understand the needs of the people living in the area. We also seek to engage and employ community members in the projects on the Country."

Yea-sayers

Prime Minister Anthony Albanese likewise states: "This is an opportunity to show respect for Aboriginal Australians and an opportunity for us to feel better about ourselves. A Yes vote would

"As an experienced management consultant, I've observed when you put people at the centre of decisions that impact them you get better outcomes."

NICOLETTE BOELE, SMART ENERGY COUNCIL

make Australia, the greatest country on Earth, just that little bit greater." His sentiment is echoed by former Coalition Foreign Minister Julie Bishop who would be "Most concerned at the message that this would send the rest of the world if we can't find it in our hearts to say yes to giving constitutional recognition to Aboriginal and Torres Strait Islanders."

The last words go to songmaster John Farnham in his stirring rendition:

"You're the voice, try and understand it, make a noise and make it clear. We have the chance to turn the pages over... write what we want to write... make ends meet before we get much older.

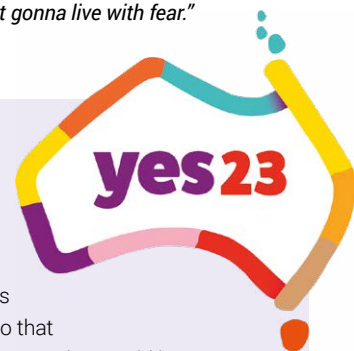
This time, we know we all can stand together, with the power to be powerful, believing we can make it better.

We're not gonna sit in silence, we're not gonna live with fear."

October 14, 2023 marks the 45th referendum in the nation's history.

- Since Federation, just eight of the 44 proposals for constitutional change have been approved.
- In May 1967, 90.77% of Australians voted to change the constitution so that Aboriginal and Torres Strait Islander peoples would be counted as part of the population and the Commonwealth would be able to make laws for them.
- The most recent referendum took place 23 years ago in 1999 ('No' to a republic). Australians under the age of 42 will have never have voted in a referendum.
- In Australia, 812,000 people identified as Aboriginal and/or Torres Strait Islander in the 2021 Census, representing 3.2% of the population. Approximately one-third are under 15 years of age and the median age is 24 years.
- Polls suggest between 80% and 83% of Indigenous people support the Voice.
- Staying on polls, recent results indicate 44% support the Voice, 39% are opposed and 17% undecided. West Australians' support for the Voice to parliament is the second worst in the nation behind Queensland's.
- A 'double majority' is required for constitutional change to be made. As well as the total national vote having to be more than 50 per cent, a majority of voters in a majority of the states (four or more of the six states) must also vote Yes. Votes in the ACT and NT are only counted in the national vote.
- Voting in the referendum is compulsory, results could flow in as early as the night of Saturday October 14.

For everyone other than vegans and vegetarians, enjoy the democracy sausage!



LONG TITLE, LENGTHY TALKS

In late June 1,500 international delegates gathered in India at the 14th Clean Energy Ministerial and 8th Mission Innovation meeting held on the margins of the G20 Energy Transitions Ministerial Meeting. Joining government and business leaders were international organisations, prominent among them the Smart Energy Council whose John Grimes and Scott Hamilton hosted a joint India-Australia Industry Roundtable Discussion with Energy and Climate Change Minister Chris Bowen and business leaders.

Bilateral discussions have already hatched some landmark renewable projects, the pinnacle being the world's largest solar concentrator at the Kailash Cancer Hospital and Research Centre in Gujarat developed by Sunrise CSP.

Sunrise CSP chief executive Artur Zawadski explained the Big Dish system developed by the Australian National University delivers steam up to 600 degrees Celsius and 160 bar pressure, and is "perfect for district heating and cooling, industrial process heat and power".

It's an outstanding example of the global industry-to-industry collaboration that the Smart Energy Council fostered during the March 2023 Smart Energy India Delegation, John Grimes said.



John Grimes (right) and Scott Hamilton presented the compelling case for stronger bilateral trade relations with India during four days of discussions with government and business leaders at the G20 Clean Energy Ministerial meeting in India in July

"The opportunities the Smart Energy Council has harnessed by leading Australia's engagement with India has unlocked a pipeline of \$1 billion in investment, and prominent Australian companies including 5B and AERL are on track to play leading roles."

During a series of G20 panel discussions John emphasised that global cooperation and collaboration are essential ingredients for universal advances. "One country or one region does not have the complete solution but

together we can craft a solution across borders that gives us enormous resilience in the manufacturing sector," he said.

"Australia might have a relatively small population but it is home to great natural renewable resources and know how... in particular we excel in innovation and research and development." He remains a strong advocate for capitalising on respective nations' strengths and resources through joint manufacturing opportunities.

SEARING WORDS OVER 'SETTIMANA INFERNALE' (WEEK OF HELL) IN THE NORTHERN HEMISPHERE

Extracts from various news outlets:

"Millions of people affected by scorching temperatures... Red alerts for extreme heat in Italy...most of southern Europe temperatures in excess of 40°C... patients being admitted with heat-related symptoms, such as dehydration, exhaustion, heat stroke and confusion"

A new record-high temperature of 41.8°C in Rome... power cuts... temperatures in mid to high 40s in the Mediterranean... Tunisia expected to register 50°C.

More than 80 million people in western and southern US states under advisories for a widespread and oppressive heatwave.

Beijing registered a record 27 days of temperatures above 35°C; one region in China hit a record high 52.2°C."

Is this the new normal? Extreme temperatures sweeping the world warmed by climate change. Caused by carbon dioxide emissions from the use of fossil fuels.



Australia has already warmed 1.47°C since 1910, the Bureau of Meteorology estimates (with a +/- 0.24°C margin of error) and is braced for a summer like none other.

The incredulous response from the UK amid the destructive heatwave gripping the globe? Approval of about 100 new North Sea oil and gas licences. Conservative UK Prime Minister Rishi Sunak has no intention to back down from UK fossil fuel exploration.

The guts of the latest IRENA report

The International Renewable Energy Agency reminds us that limiting global warming to 1.5°C requires cutting carbon dioxide emissions by around 37 gigatonnes from 2022 levels and achieving net-zero emissions in the energy sector by 2050. In other key observations:

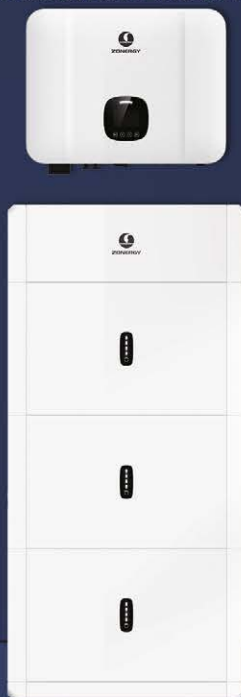
- Current pledges and plans fall well short of IRENA's 1.5°C pathway and will result in an emissions gap of 16Gt in 2050
- Annual deployment of 1000GW of renewable power is needed to stay on a 1.5°C pathway
- Despite record renewable power capacity additions in 2022, the year also saw the highest levels of fossil fuel subsidies ever, and
- Global investments across all energy transition technologies reached a record high of US\$1.3 trillion in 2022, yet fossil fuel capital investments were almost twice those of renewable energy investments.

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PV Module ZPM Series

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CLARION CALL FOR AUSTRALIA'S BID TO HOST COP31

By Richie Merzian

The Australian Government is for the first time bidding to host a COP gathering and it wants to do so in partnership with Pacific Island countries. What are our chances of bringing the world's most significant climate action summit to our shores? Just as importantly, what can we bring to the table to make a material difference?

THE FEDERAL GOVERNMENT wants to bring the world's largest trade show for climate solutions to Australia in 2026. This is in no way an insignificant aspiration, the annual United Nations Climate Conference ('Conference of the Parties' or COP) has been running for 30 years and it continues to grow. It is now arguably the third largest event a country can host, after the Olympics and a FIFA World Cup.

To give an idea of the scale of the summit, COP26 held in Glasgow at the tail end of the COVID-19 pandemic in November 2021 attracted around 30,000 delegates and over 100 world leaders. The next year in Egypt at COP27 more than 35,000 attended. In early December this year COP28 will be staged in Dubai's 'Expo City'; senior Smart Energy Council representatives will be attending, and we expect attendance records to be broken again.

The popularity of COP gatherings grows as more people and companies engage. And the nature of the event itself continues to evolve.

In the past the COP mainly consisted of government officials, environment ministers and those wishing to directly influence them. Representatives of the 195 'Parties' to the UN Framework Convention on Climate Change (UNFCCC) meet to agree on the next set of rules and recommendations to reduce carbon emissions, adapt to unavoidable climate impacts and to resource these activities.

Almost every country in the world attends and final decisions are made through consensus – no easy feat.

The Australian Government has a patchy track record in these negotiations. At the COP in Kyoto in 1997 it held up negotiations to increase its emissions target using shifty land-use accounting. At the COP

in Madrid in 2019, the Coalition-led Government tried to game the rules so it could cash in dodgy credits instead of reducing emissions.

At the COP in Glasgow in 2021, Australia's then Prime Minister Morrison had to be peer-pressured by the US, UK and even the Queen into attending!

In the words of Prime Minister Albanese, Australia has been in the naughty corner at these negotiations. And it is evident that major fossil fuel producers have been more interested in protecting their high-emitting exports than avoiding global warming.

To negate the frustrations of moving at the pace of the lowest common denominator, a space was created alongside the official COP negotiations to host a growing number of side-events, pavilions, public rallies, policy initiatives and media moments. It has grown so much that it has shifted the centre of gravity for these COP events away from closed door UN negotiations and into what is referred to as the 'Action Agenda'.

A slice of the action

This new Labor-led Australian Government wants to turn a page – both on its role in the UN climate negotiations and on the opportunity to engage in the Action Agenda.

The Australian Government is for the first time bidding to host a COP, which would be in 2026, and it wants to do so in partnership with Pacific Island countries. Unlike Australia's chequered record in climate negotiations, Pacific Island Nations have been the voice of reason, of urgency and more recently of survival. It is thanks to the leadership of Pacific Island Nations that the Paris Agreement has a guardrail of keeping global warming to 1.5 degrees.

Co-hosting COP31 in 2026 would be a chance to revive Australia's international reputation and demonstrate its commitment to being a security partner of choice for the region. As Pacific experts Dr Wesley Morgan and Dr Tess Newton Cain maintain, the "single most significant thing Australia could do to improve relations with Pacific Island countries would be to take meaningful action on climate change – including through the introduction of domestic policies to reduce emissions, and the pursuit of ambitious middle power diplomacy to drive global emissions reductions."

The Smart Energy Council supports Australia's bid to have a 'Pacific COP' in 2026 and has hired an International Affairs Manager, Richie Merzian – a COP veteran having worked both inside the Australian



David Pocock and Richie Merzian at COP26 held in Glasgow

Government as a negotiator and on the outside in the Action Agenda – to lead its engagement.

But Australia's COP bid is not a done deal. There is another competing bid from Turkey to host the COP in 2026 which is being discussed and sorted behind closed doors in UN headquarters. Fortunately the Australian bid has the support of the United States and earlier this year Pacific Island leaders agreed to work together with Australia to "advocate for the joint bid" to host COP31.

If Australia's bid is successful, every country will gather on our shores in 2026 and not hold back on their expectations of leadership on climate change – including on Australia's fossil fuel production. It is like putting the Australian Government in front of a 'Shark Tank' of climate judges. It will also provide an opportunity for Pacific leaders to share the COP Presidency and have a direct role in shaping the next global climate agreements.

What can the renewables industry do?

The successful COP31 host will likely be announced at the next UN Climate Conference in Dubai in December this year. Until then, there are two things the renewable energy industry can do.

The first thing is to champion the idea of hosting a COP. As Climate and Energy Minister Chris Bowen said "this is an opportunity – will be an opportunity, if we win the bid – to show Australia's capacity to help the world as a renewable energy powerhouse."

For many SEC members and veterans of the Australian climate wars, this is a rare opportunity to build and showcase a very different version of Australia.

In 2026, Australia's National Electricity Market could be powered with majority renewables, with solar panels on most homes, and electric vehicles and e-bikes in every second driveway. As an economy, we could be manufacturing smart energy solutions and exporting them to the world. We should be committed to no new fossil fuel projects and phasing down existing ones. As a country, we could be proud that we have truly embraced climate action in our diplomacy, in our trade and in our national identity.

The second thing the renewable energy industry can do is consider what climate initiatives Australia could launch. This needs to go beyond three-word slogans, at the very least it should be four-word slogans! The United Kingdom's leadership of the Glasgow COP in 2021 was characterised by 'Cash, Cars, Coal and Trees'. The UK placed climate at the top of its diplomatic priorities in crafting initiatives on all four areas.

The UK's Conservative Government launched the Glasgow Financial Alliance for Net Zero, aligning \$130 trillion in private capital with net zero. They championed electric vehicle uptake, deforestation pledges and most importantly gained consensus on language around phasing down unabated coal power in the final decision.

The UK, birthplace of coal power, had gone through its own transition away coal in its grid and was now leading the charge for the global phase-out.

Just imagine if we could get the Australian Government to do something similar on phasing out fossil fuels and championing renewables! We could go one step further and ask the Australian Government to design and launch a new alliance of smart energy exporters.

This is the challenge – to consider what initiatives Australia could lead and how COP31 can be leveraged. Closer to the event more



opportunities will arise including the nomination of an Australian UN Climate Champion to work with businesses and industry in the race to net zero. The Australian Government might also be looking for industry partners to put on events alongside COP31.

The COP itself is an annual two-week event that takes place toward the end of the year. It will be a massive tradeshow of climate solutions, gathering every nation in the world and creating a moment unlike any other. But what is ultimately available is a process to transform the country through smart policies and actions, and how we embrace this opportunity, will shape this opportunity.



Should Australia be successful in its bid to host COP31 in 2026 all the eyes of the world would be on our nation

VITAL ACTION ON CRITICAL MINERALS

What will it take for Australia to gain traction in the global critical minerals industry? Leading lights in finance and investment, mining and clean hydrogen joined local, state and federal leaders at the Renewables and Critical Minerals Superpower Summit in Perth to discuss opportunities and challenges.

IT'S ALMOST AN UNDERSTATEMENT to say Western Australia is rich in resources: the state is home to more than 50 different minerals, greater than all other states, is a major exporter of nickel, cobalt, manganese and rare earths and already accounts for around half of the world's lithium production.

Given the velocity of global battery production which has grown 40 per cent a year for the past five years, Western Australia stands at the threshold of gaining more from lithium royalties than from gas royalties.

"As we forge a direction to a new era, we find ourselves at the epicentre again," said charismatic Perth Lord Mayor Basil Zempilas in his rousing opening statement ... "We are at the heart of the world's energy transition.

"Western Australia is already a mining superpower. The challenge and opportunity is to remain there with our unrivalled solar, wind and critical minerals.

"You can get lucky once, you can get lucky twice. The luck remains with WA."

Western Australia's Minister for Mines and Petroleum, Energy, Hydrogen Industry and Industrial Relations Bill Johnson reinforced the message, stating "Western Australia is already firmly established as a global leader in critical minerals and is uniquely positioned to meet rapidly increasing global demand."

He explained a record breaking \$2.5 billion was spent on mineral exploration last year, including around \$800 million towards finding new critical

minerals in WA... "and with further discoveries anticipated following this boom in exploration, we expect our leading position in the critical mineral sector to continue well into the future.

"There is significant interest from potential investors in critical minerals processing projects in recent years, WA has seen investment in three battery grade lithium hydroxide refineries, and it is estimated that by the end of 2024, Western Australia will account for around 10% of global lithium hydroxide demand. This is expected to rise to over 20% by 2028 as planned refineries complete commissioning."

Value adding to reap reward

Upbeat words from the Minister but as Tim Buckley of Clean Energy Finance asserts, the opportunity for Australia is to move from the dig and ship model of coal and iron ore to creating more value by processing the minerals onshore.

"WA was slow to the party in terms of investment, but they are starting to move... we need to embody decarbonisation is our exports, to get rid of just this dig & ship mentality... this is a once in a century opportunity. Australia is a little late to the game," he said.

Tim decries the lack of support which stunts the growth of Australia's economy at large as an innovative clean, green nation.

"Looking at the scale of global climate investment by China, Europe, Japan, USA what proportionate investments can Australia make? We need a timely response [such as that of] China, Korea, Japan, the US and Europe where the [renewables] space has been heavily subsidised or supported by their governments.

"The *Inflation Reduction Act* and other measures are attracting gigantic investments in the US... a trillion dollars of subsidies changes the investor landscape," Tim told the conference, noting however China leads in global renewables, outpacing the US four to one.

"I want a proportionate response to the *Inflation Reduction Act* – proportionate to Australia's influence... Five hundred million dollars is one step, we need 100 steps," he said. "A \$100 billion strategic push."

But the level of support now being offered by international governments means the market cannot be classified 'free'.

"We can't compete in deploying capital in Australia if it isn't a free market and there are other incentives that attract capital elsewhere," Tim said.

"Further, I think we should phase out cap and diesel fuel rebates so we stop creating a headwind for the option of electrification, and then redeploy that capital back into investing for the future."





The Summit staged by the Smart Energy Council was a reality check on renewables practicalities and aspirations that garnered significant media interest

Leap of faith?

Matt Dusci Acting CEO of globally prominent critical materials processor IGO which produces lithium hydroxide at its Kwinana plant wholeheartedly agrees. "We can compete on operating costs and on a safe and reliable jurisdiction, as well as ESG, and we can compete when it comes to having a true cost on carbon when producing, but we struggle with capital and the first step of building a critical minerals processing plant is expensive. Capital cost is a lot cheaper [elsewhere]."

"Realistically the leap from ore exporter to refined material exporter is one astronomical jump for Australia... it's incredibly challenging here," Matt Dusci said.

He attributes this to the perception that refining critical minerals and processing materials is a new and therefore risky venture for Australia.

"Ultimately, we must create an environment where government share some of the risk of developing industrial hubs to deal with refining and manufacturing plants, as well as incentivising industries to deal with waste streams."

James Choi of the Korean Ministry of Trade raised the not insignificant challenge of sourcing all the necessary workers to propel a thriving battery and other manufacturing industries.

Labour market

"We simply won't have the labour force or the skills to build these new industries, there needs to be a policy response to acknowledge the fact we need to nurture skillsets here in Australia... if we can't do that we will have to develop more flexible work and immigration policies to allow skilled workers to build these new industries," Choi said.

Joanna Kay, General Manager of Zero Carbon Hydrogen Australia at the Smart Energy Council likewise advocates a rethink in skilled migration. "I've seen countries like India, for example, really eagerly seeking those Australian resources... they've been able to actively engage in and form successful joint ventures. There's no reason why we can't do that. We have to be competitive... we need the man- or woman-power on the ground to get things done."

Other imperatives stand at the fore, according to Kirk McDonald of Supercharge Australia "We need to make batteries here in Australia for our own security purposes," he said, "Rather than questioning the 'ifs' of the future, question the magnitude of support required to reach potential."



Independent member for Curtin Kate Chaney declared "We're now on the cusp of the next big wave of opportunity, and it will require similarly bold thinking to make sure that we don't get left behind." However gas continues to dominate in discussions which could impede Western Australia's pursuit of critical minerals [and decarbonisation], given "Whenever there is a huge structural transition, it's perfectly natural the industries that lose out of that will find reasons to delay and put it off for as long as possible."

"We need a crackdown on methane... there is not a big future for gas... not enough people in Western Australia realise that," Chaney said, "But replacing thermal coal exports with lithium for batteries is a good start considering WA has more than 50% of the world's lithium."

Esteemed climate scientist Bill Hare of Climate Analytics added "The obsession with gas in Western Australia is starting to crowd out real investment in green hydrogen and other decarbonising projects."

"We seem to be accepting that a fossil coal exit is necessary, but few seem to recognise that exit needs to be closely accompanied by exit of fossil gas, much greater action is needed."

He reminded the Summit gathering that WA's greenhouse gas emissions are increasing compared to the rest of Australia.

Reality check!

The path ahead for renewables in Western Australia

In its May budget the WA Government pledged \$2.8 billion investment in cleaner, reliable and affordable energy initiatives.

The funding package includes investment of \$2.3 billion to deliver new battery storage across the Southwest interconnected system. (The 500MW Cali battery energy storage system is potentially among the world's largest in the world.)

The state budget also included \$368 million for over 200MW of large-scale wind generation.

Hydrogen blending into natural gas networks to support decarbonisation is a strategic focus area for the government.

Green hydrogen could form the backbone of green valuating of iron ore, and the WA government's green steel plan supports the development of these opportunities.

These investments are built on the WA state government's \$6 million commitment towards electricity network planning.

ERARING CAN BE CLOSED ON TIME TO SAVE CONSUMERS MONEY

By Stephanie Bashir of Nexa Advisory

CURRENTLY there's a lot of discussion about delaying the closure of the Eraring coal-fired power station. However, there's no transparency about what it would take to close Eraring to the planned schedule.

The current slow pace of Australia's energy transition – generation, storage and transmission build and connection – may well necessitate delays to the closure of coal-fired power stations. This would shore up reliability in the near term, but would result in higher costs and emissions over the long term. The better approach would be to accelerate the rate at which we deploy new clean energy resources.

This would negate or minimise the need to extend the lifespans of coal-fired power stations, and leave energy users and the nation much better off in coming years.

Given the risks associated with the slow pace of the transition in Australia, Nexa Advisory engaged Endgame Economics to provide evidence-based insights into the likely impacts of delays to the transition and the closure of New South Wales' ageing coal-fired power stations, specifically Eraring and Vales Point.

Summary of findings

Several key findings emerged from the modelling and Nexa Advisory's research.

Risks to our power affordability, reliability and security – our ageing coal-fired power stations are unreliable and expensive.

Emissions targets will be missed – extending Eraring's closure date generates additional carbon dioxide equivalent emissions, totalling around 18.3 million tonnes for a delay of two years, and 34.5 million tonnes for a delay of four years.

Our emissions budget will be exceeded – the total cost of the emissions on our current slow pathway would be \$160 billion, \$31 billion more than a planned transition. Delaying Eraring's closure contributes \$2.7 billion (2-year delay) and \$5.2 billion (4-year delay) to these costs.

Consumer bills will increase – the typical consumer will pay between \$4,500 and \$6,000 more in total (depending on state) over the next twenty years unless the energy transition is more effectively managed.

Renewable energy generation targets will be missed: on our current pathway, around 60% of electricity in the NEM will be generated by large-scale renewables in 2030, making the Federal Government's 82% target difficult to achieve without a significant acceleration.

A domino effect – should the closure of Eraring be delayed because replacement renewable generation is not built in time, then it is likely the scheduled closures of other coal-fired power stations will also be missed, such as Vales Point and Yallourn.

Any reliability gaps identified by the Australian Energy Market Operator (AEMO) and AEMO Services are already being addressed.

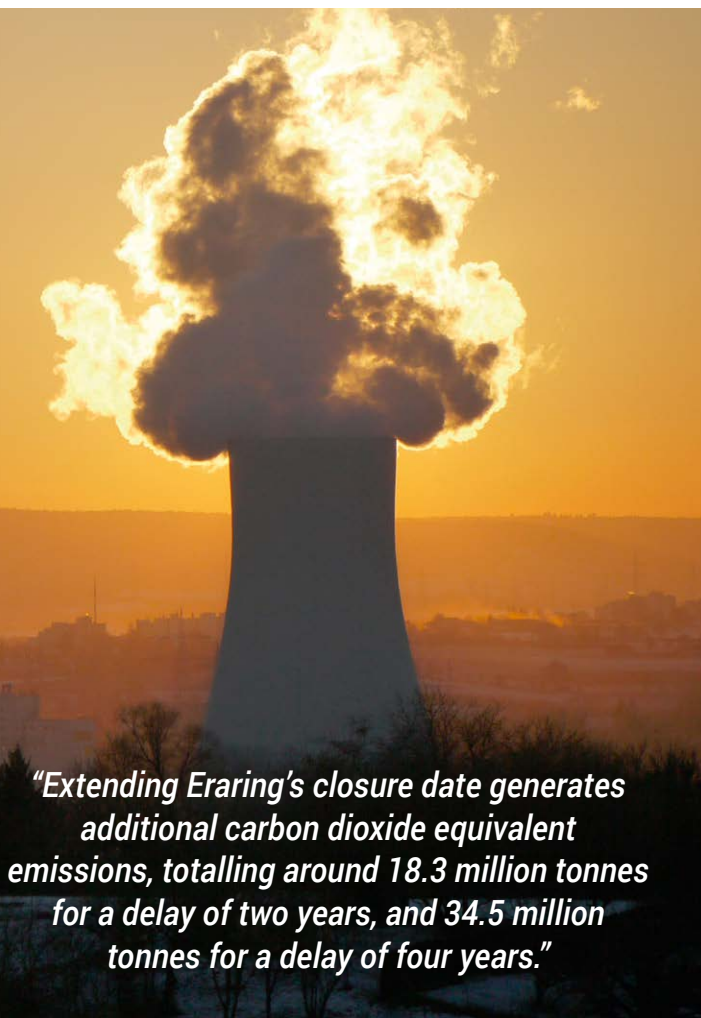
It is not too late to take the necessary actions to get back on track – if we act now and work fast, we can meet build targets and achieve the current schedule of coal-fired power station retirements.

Summary of recommendations

- Accelerate new capacity build by mobilising funding through the Federal Capacity Investment Scheme and Clean Energy Finance Corporation and the NSW EnergyCo.
- Bolster firming capacity through accelerated auctions to bring on "insurance" supply in Renewable Energy Zones (REZ) and amended Long Term Storage Auction (LTESA) contracts.
- Explore long-duration storage technologies like flow batteries and liquid air energy storage to support renewable generation projects as well as delivering hybrid storage with generation projects.
- Facilitate new renewable generation and storage projects outside the REZ to take advantage of existing capacity in the transmission system and underwrite Power Purchasing Agreements to ensure a more rapid delivery of new firm generation projects.
- Advocate for new transmission lines to support the clean energy transition, and making transmission contestability a requirement for accessing Federal funds for transmission projects, in addition distributed energy resources (DER) can play a complementary role through residential rooftop solar, however commercial and industrial DER (systems >100kW) can play a significant role immediately.

NSW already has in place all the legislative tools necessary to accelerate the delivery of REZ-related generation, storage and transmission, and the delivery of non-REZ generation, storage and priority transmission lines.

We also advocate prioritising and accelerating the connections and statutory approvals, while maintaining rigor, for already committed



"Extending Eraring's closure date generates additional carbon dioxide equivalent emissions, totalling around 18.3 million tonnes for a delay of two years, and 34.5 million tonnes for a delay of four years."

and anticipated generation and storage projects would add a further 4.3GW of firm low carbon generation to the NSW power system. This would provide investor certainty for financial close and facilitate timely commissioning.

Beyond the Eraring closure

While we have proposed some immediate actions above that would promote a transition to a low carbon power system, there are further approaches that need to be taken to ensure that the power system and market are ready.

The closures of Liddell and Eraring power stations provide lessons for future closures, such as Vales Point (now scheduled for 2033).

Providing clarity to the market on when a coal-fired power station will cease operation provides developers and investors with the confidence to progress new renewable generation and storage projects.

There are a number of options for providing clarity in NSW and other jurisdictions:

- A ministerial declaration on the dates for coal-fired power stations to cease operation would provide certainty for the owners and operators, AEMO as the power system and market operator, and developers of new generation and storage projects.
- A legislated coal closure mechanism (national or state) would set the closure date for coal-fired power stations in legislation. There would need to be a very limited degree of flexibility around the dates, with the owners and operators of the power stations required to define a window for closure, which would narrow as the date

approaches. This mechanism would need to incorporate a penalty to ensure compliance with the closure date (e.g. funds in escrow).

- A strategic operating reserve needs to be developed. This would underwrite new firm renewable generation through an auction, established under Capacity Investment Scheme. The auction would be held five years ahead of a scheduled closure. Once constructed and commissioned, the capacity would be in reserve (off market) such that in the event of an early closure (which is desirable) or a coal-fired unit fail near the end of its life, generation can rapidly be brought into the market. This would guarantee a smooth transition for any future coal closures and reduce price volatility, without distorting investment signals for other necessary firm renewable energy investments. The reserves could also be available to ensure the NSW Energy Security Target is met.

www.nexaadvisory.com.au

Nexa is a full-service advisory firm that works with public and private clients including renewable energy developers, investors, generators, challenger brands, energy-tech start-ups, market bodies, through to large corporations and government, and climate impact philanthropists to help accelerate efforts towards a clean energy transition. Nexa has been shaping the energy industry for over 20 years.

The article above, published on July 24, 2023, has already received widespread print and digital media coverage. Stephanie Bashir subsequently appeared on several TV and radio channels to discuss the closure of Eraring and promote the development of renewable energy and storage.

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HOME-GROWN GREEN HYDROGEN IS GAINING GROUND...

Hydrogen Headstart

Zero Carbon Hydrogen Australia (ZCHA), together with the Smart Energy Council, actively supports the Australian Government's ambition to become a renewable energy superpower and recognises that the ambition is achievable through valuable programs such as the \$2 billion **Hydrogen Headstart program**.

"Hydrogen Headstart is a crucial step towards developing Australia's renewable hydrogen industry and responding to the competition sparked by the US *Inflation Reduction Act* and other countries' smart energy initiatives," said Joanna Kay of ZCHA.

"This global positioning is bolstered by Australia joining the new International Hydrogen Trade Forum that sees 14 countries including Germany, Japan and the UK gather to improve the hydrogen import/export market."

ZCHA and SEC has submitted a detailed response to the Australian Government's **Hydrogen Headstart Program Consultation**; the lengthy submission contained several key messages and recommendations and applauded the Australian Government for its commitment to transitioning away from fossil fuel-based hydrogen and actively supporting the adoption of Guarantee of Origin (GO) certificates.

"We firmly believe that this represents a significant step in the right direction, propelling us towards a cleaner and more sustainable future," Joanna Kay wrote.

"As we move forward, we must ensure that we authenticate our projects, demonstrating that the hydrogen produced is genuinely renewable, sourced exclusively from 100% renewable electricity, and proudly boasts near-zero carbon emissions."

She highlighted the SEC's Zero Carbon Certification Scheme, administered by ZCHA, has emerged as a crucial initiative in promoting and recognising sustainable practices within the renewable energy sector.

As such, ZCHA recommends the Hydrogen Headstart mandates that projects require independent certification for renewable hydrogen as key criteria of the scheme to ensure that the hydrogen industry in Australia is built on the foundations of credibility, trust and transparency.

Further, that the Hydrogen Headstart criteria state that renewable hydrogen must be certified to meet the GH2 standard threshold of producing less than 1 kg CO₂e per kg H₂ and that fossil fuel-derived hydrogen, ammonia and metals be removed from any GO scheme.

The Australian Government needs to ensure Hydrogen Headstart helps, not hinders, Australia's hydrogen industry. It needs to ensure it doesn't crowd out other investments and support for renewable hydrogen projects, including smaller projects, and eligibility for funding must be sufficiently flexible that it doesn't advantage just one or two companies.

The Hydrogen Headstart should not be limited to projects of 50 megawatts and above, and should actively foster the growth of supply chains, considering the manufacturing of electrolyzers, compressors, solar and wind power, and battery components, ZCHA stated in its submission.



Malcolm Turnbull and Jonas Moberg with ZCHA/SEC's Scott Hamilton and Joanna Kay

"We must ensure that the Australian Government leverages Hydrogen Headstart effectively without hindering our hydrogen industry. It's essential to avoid overshadowing other renewable hydrogen projects, even the smaller ones, and maintain flexibility in funding eligibility to support multiple companies," Joanna said. The full submission can be viewed at: <https://smartenergy.org.au/articles/hydrogen-headstart-submission/#SmartEnergy>

Scaling Green Hydrogen: CRC Bid

The current state of play: almost all of the 100 million tonnes of hydrogen used each year to make chemicals and refine transport fuels comes from fossil fuels, generating large amounts of CO₂ emissions in the process.

To redress this, the Scaling Green Hydrogen Cooperative Research Centre (CRC) aims to become the largest single initiative in Australia focused on supporting the vital scaling up of the emerging Australian green hydrogen sector to ensure that Australia can achieve economic prosperity with a decarbonised economy.

But we have a way to go: Australia's largest operating electrolyser is just 1.25MW; we need to boost that to 1TW! The Scaling Green Hydrogen CRC seeks to raise \$5 million annually from key stakeholders (including \$4 million a year from industry participants) for the 10-year life of the CRC which will see additional \$50 million matched Commonwealth funding being requested.

Zero Carbon Hydrogen Australia has offered in-kind support for both Joanna Kay and Scott Hamilton as part of its contribution; Joanna also holds a seat on the Advisory Board supporting this bid. "If successful we will aim to position Zero Carbon Hydrogen Australia as a key partner," she said, revealing the proposal is shortlisted to Stage 2 of Round 24 as announced by the Department of Industry, Science and Resources.

ZCHA's comprehensive response to the US IRA

"\$2 billion in the green hydrogen head start is a down payment on our response to the Inflation Reduction Act." Minister Chris Bowen

The US Inflation Reduction Act is hailed by many as the most significant climate change policy measure in US history with US\$369bn (AU\$520bn) in direct assistance that will drive trillions of dollars in new private investment into the US. The package includes US\$13bn for Clean Hydrogen and a raft of measures to support local manufacture... in all US\$150bn (AU\$223bn) in funding, 46 new manufacturing facilities and nearly 20,000 new jobs.

Where does that place Australia? "It's a material threat to us" says Dr Guy Debelles, formerly of Fortescue Future Industries, "If you throw upwards of a trillion dollars at something, that tends to buy a comparative advantage... it's a really serious risk that by the time we get our act together, that market won't be there for us... [the US will] lock up a fair chunk of the Japanese and Korean markets."

Time to act! "There's a golden opportunity for Australia to realise up to \$300bn of potential hydrogen investments in the pipeline, the largest in the world," say Joanna Kay and Scott Hamilton who together with the Climate Capital Forum are calling for \$100bn of strategic national interest public capital to crowd-in upwards of the \$200bn to \$300bn of private investment to re-industrialise Australia's economy. "The IRA is welcomed and a critical tool to drive investment into clean energy to decarbonise one of the biggest greenhouse gas emitters in the world... and a US style tax incentive policy here in Australia would help drive investment, it is imperative we take decisive action to build a sustainable renewable hydrogen industry," Joanna Kay said. "We must summon the courage for bold, immediate, and dramatic action to elevate our collective endeavours in response to the US IRA, ensuring that we seize this incredible opportunity for our nation."

The report can be viewed at www.smartenergy.org.au



Scott Hamilton (ZCHA), Allard Nooy (FFI), Jonas Moberg (GH2), Nishaanth Balashanmugam (GH2) and Chris Bowen MP

Advances in India

When in India in late July, ZCHA Senior Advisor Scott Hamilton joined Climate Change and Energy Minister Chris Bowen MP to witness the signing of an MoU between ZCHA and Swiss-based Green Hydrogen Organisation (GH2). The partnership will see further global cooperation in advancing green hydrogen and ammonia production.

Meantime India's Government has launched the National Green Hydrogen Mission in a bid to establish India as a global green hydrogen production and export hub, and India's Ministry of New and Renewable Energy advised investment of \$US2.12 billion in Green Hydrogen Production and Manufacturing as part of the plan to boost green hydrogen production capacity to 5Mmt (a million metric ton or 1,000,000,000kg) or more annually by 2030.

... and around the states

QUEENSLAND Rio Tinto and Japan's Sumitomo Corporation have joined forces in a \$111 million hydrogen plant at the Yarrowalbin alumina refinery in Gladstone in the bid to reduce annual emissions by a hefty 500,000 tonnes annually by using hydrogen instead of natural gas in the calcination process.

The project will include a 2.5MW onsite electrolyser, hydrogen storage facility, and a hydrogen-capable burner to retrofit one of the refinery's calciners.

NSW Meanwhile in NSW Origin Energy plans to build a 55MW hydrogen electrolyser in the Hunter Valley to produce 5,500 tonnes of green hydrogen a year by 2026.

The federal government's regional hydrogen hubs program has pledged \$70 million in funding for the project which will supply transport hubs and refuelling stations as well as Orica for its production of green ammonia.

The NSW Government's Renewable Fuel Scheme creates a financial incentive for the production and consumption of 'green' hydrogen within NSW through a tradeable certificate scheme that commences in 2024.

SOUTH AUSTRALIA has committed \$593m to building a world-first hydrogen power plant with 250MWe electrolyser capacity, 200MW hydrogen-fuelled power generation and hydrogen storage infrastructure to accelerate the growth of the state's hydrogen economy, and now shortlisted proposals with a view to awarding contracts to the renewable hydrogen facility being operational by late 2025.

The South Australian Government has commenced a two-year hydrogen bus trial in collaboration with Foton Mobility, BOC and H2H Energy as part of the state's zero-emission public transport future with hybrid trains and full-battery electric bus fleet. The hydrogen buses will be supplied by Tonsley Innovation District.

THE WEST AUSTRALIAN GOVERNMENT is developing a Renewable Hydrogen Target to require a percentage of electricity generated in the South West Interconnected System to be fuelled by renewable hydrogen and is considering targets and development of a Renewable Hydrogen Electricity Generation Certificate for the SWIS which would be created for every MWh of electricity generated via the combustion of renewable hydrogen.

In related news, Infinite Green Energy (IGE) has been awarded a \$5 million grant from the West Australian government to progress the MEG HP1 Green Hydrogen Project in Northam.

The project using electricity generated by the solar PV farm and supplemented by the SWIS is expected to produce up to four tonnes of green hydrogen daily.

The grant is allocated by the WA government through the \$148.4m Investment Attraction Fund.

Staying in the west, the Western Green Energy Hub (WGEH) and Korea Electric Power Corporation (KEPCO) have signed a Memorandum of Understanding to strengthen collaboration on green hydrogen production. At full scale the WGEH could produce up to 3.5Mt of green hydrogen annually.

USING ELECTRIC WATER HEATERS TO STORE RENEWABLE ENERGY COULD DO THE WORK OF 2 MILLION HOME BATTERIES – AND SAVE US BILLIONS

By David Roche

AUSTRALIA'S ENERGY TRANSITION is well under way. Some three million households have rooftop solar and sales of medium-sized electric cars are surging. But as we work towards fully electric households powered by renewable energy, have we overlooked a key enabling technology, the humble electric water heater?

About half of Australian households use electric water heaters, while the rest use gas. So what's so great about electric water heaters?

Electric water heaters offer a cheap way to store large amounts of energy, in the form of hot water. A heater with a 300-litre tank can store about as much energy as a second-generation Tesla Powerwall – at a fraction of the cost.

Our research at the UTS Institute for Sustainable Futures has found Australians could use household electric water heaters to store as much energy as over two million home batteries of that kind. This could eventually save over A\$6 billion a year on our energy bills while getting us closer to net-zero carbon emissions.

Our report, published in early June and funded by the Australian Renewable Energy Agency (ARENA), recommends that, to halve emissions by 2030 and reach net zero by 2050, we urgently need policies to rapidly replace gas water heaters with 'smart' electric water heaters. Smart heaters can be switched on and off in response to changes in electricity supply and demand across the grid.

This means these heaters can soak up excess 'off-peak' renewable energy, particularly from solar, and so help us solve two key problems at once. They can help reduce and eventually eliminate greenhouse gas emissions. And they can make our electricity grid more stable by providing flexible demand that helps balance out the fluctuating supply from renewable sources.

Cutting emissions

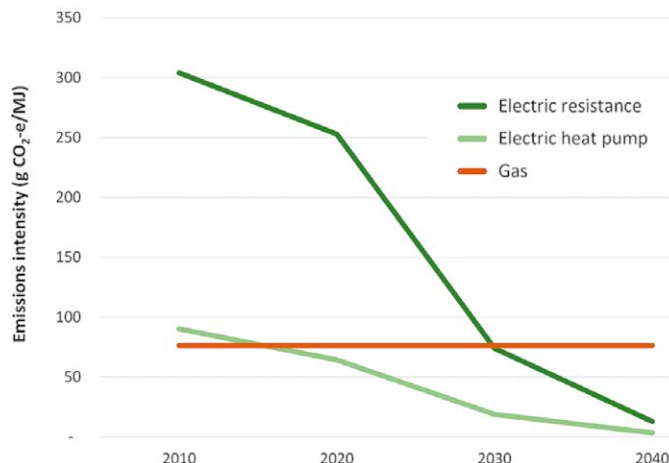
There are three main types of electric water heater. A conventional 'resistance' heater uses electricity to heat water directly. Solar water heaters use sunlight and electricity, but have become less popular as newer 'heat pump' units emerged. These collect heat from the air and 'pump' it into water. A heat pump uses three to four times less electricity than a resistance heater.

Back in 2010, a resistance electric water heater typically produced around four times more emissions than its gas equivalent. Heat pump emissions were about the same as for gas. That's because electric water heaters use a lot of electricity, and most of it came from burning coal.

As we generate more electricity from renewables, this picture is changing dramatically. Australia's energy market operator, AEMO, publishes regularly updated pathways to a clean-energy future. In the most likely outcome, the 'step-change scenario', gas will become the most greenhouse-intensive water-heating option by 2030.

By 2040, once the transition to a renewable electricity system is largely complete, emissions from resistance and heat pump water heaters will be much lower than for their gas counterparts.

Water heaters can last 15 years or more. So the stock of heaters in our homes for the next two decades depends on what we install today. Replacing gas heaters with electric heaters should therefore be an immediate priority in our energy transition.



The projected emissions intensity of resistance and heat pump water heaters in NSW will soon be much lower than for their gas counterparts. Results for Queensland, Victoria and the ACT are similar to those for NSW. Author provided

Our work explored a range of scenarios, each with a different mix of water-heating technologies. One was a business-as-usual baseline where gas water heaters remain prevalent. In alternative scenarios gas is phased out over the next 10–20 years.

We found that replacing gas with electric water heating would not only help us get to net-zero emissions sooner, it would save us money.

Gas is expensive and unlikely to get much cheaper. Abundant renewables offer an excess of cheap electricity that water heaters can help soak up. Embracing this opportunity could save over \$6 billion a year on our energy bills by 2040.

Boosting grid stability

Solar and wind are now the cheapest technologies we've ever had for generating electricity. But to maintain a stable electricity system, we need to match demand with the fluctuating supply from renewable sources. Batteries offer a partial solution, but are still relatively costly.

Electric water heaters offer a much cheaper way to store large amounts of energy and provide the demand flexibility the grid needs.

Our research found that, compared to the business-as-usual baseline, a scenario that emphasises demand flexibility using smart electric water heaters could provide an extra 30GWh of daily flexible demand capacity. That's the equivalent of over two million home batteries across the National Electricity Market, which supplies electricity to eastern and southern Australia.

Back to the future for water heating

Since the 1950s, 'off-peak hot water' has seen Australian electricity providers turning household water heaters off during the day and on at night to better match demand and supply. In return, customers received heavily discounted prices.

In recent decades we've moved away from off-peak electric hot water, as incentives dwindled and more homes connected to natural gas.

As we electrify our hot water, which technology should we embrace: resistance or heat pump? The answer is both.

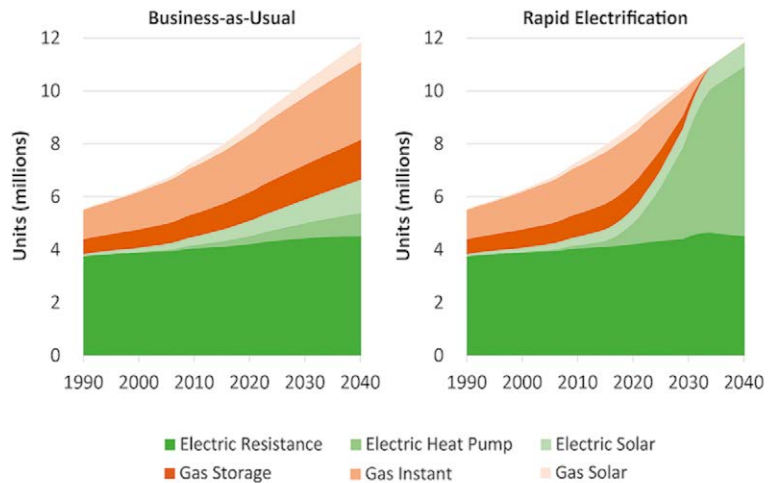
Our research explored the trade-off between highly flexible resistance water heaters versus highly efficient but less flexible heat pumps.

Heat pumps use less electricity and cost less to run. Where electricity prices are high or power flow is limited, using heat pumps makes sense. However, they have a higher upfront cost and are not suited to all homes. Many apartments, for example, lack access to suitable outdoor space.

And because they use less electricity, heat pumps offer less flexible demand. As renewables, particularly solar, increasingly power our grid, the ability of resistance electric heaters to soak up excess 'off-peak' renewable energy is a big advantage.

With the right policies and market reforms, we will all benefit from a system that once again rewards customers with cheap off-peak electricity in exchange for network operators being able to switch our water heaters off and on as needed.

David Roche is Research Director – Strategic Energy Collaborations, University of Technology Sydney. He works for the Institute for Sustainable Futures, which received funding for this work from ARENA. This article first appeared in 'The Conversation' and is republished here under Creative Commons licence.



In our modelling of the National Electricity Market, business-as-usual policy (above left) locks in costly and high-emissions gas units for decades to come. In our rapid electrification scenario (right), electric water heaters rapidly replace gas units. Author provided

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POWER AND PRIDE

For more than a decade the Pollinate Group has facilitated the uptake of solar-powered lighting to replace harmful kerosene lamps in some of India's poorest communities. The successful model involves empowering local females to develop business skills and distribute products.

INDIA IS A LAND OF EXTREMITIES. With a population nudging 1,430,540,858 and continually rising it pipped China by mid-2023, and is home to almost 18% of global inhabitants. But the warming planet with more intense heatwaves is causing increasing discomfort for millions.

Shelter from the swelter is a luxury few can afford and despite efforts to electrify all households, most rural village homes remain without power. In slums electricity is all but non-existent and unaffordable: hundreds of millions earn less than \$2.90 a day.

Living conditions are stifling in communities that rely on kerosene for lighting and cooking in inevitably cramped, poorly ventilated dwellings. Kerosene is no friend to humanity, the noxious fuel can cause long-term harmful respiratory and cardiovascular conditions, eye irritation, pneumonia, stroke and lung cancer. The World Health Organisation identifies exposure as particularly high among women and young children as they spend the most time near kerosene lamps.

"The scale of the problem is huge, we are dealing with big issues in some of the poorest communities in the world," Pollinate Group CEO Sujatha Ramani told *Smart Energy*. "That is where we step in.

"Our model identifies, onboards and trains local marginalised women and empowers them to become successful entrepreneurs who we call 'Suryamukhis' and stock with environmentally friendly everyday household goods selected on the basis of affordability, portability and reliability to distribute to communities."

The range includes compact stand-alone solar powered lights, some of which include radios or chargers for mobiles; solar powered induction cooktops; pressure cookers; and water filters.

Another vital product on the itinerary is a solar-powered fan to combat the humidity and heat.

Goods are supplied to Pollinate Group courtesy of the generosity of philanthropists, donors and global supporters and Pollinate sets a small margin to the cost of the goods to cover operating costs. Meanwhile participating households are offered micro-finance payment plans and benefit from not having to pay for costly kerosine.

"These products may be simple but they make a huge difference to the quality of life for families across the poorer regions. When women are advised about alternatives for home cooking and lighting, they can turn the corner and this radically improves all-round health," Sujatha Ramani explained.

"Children can do their homework in the evening thanks to the solar-powered lighting, something we take for granted but which is so important."

The success of the program relies on the savvy teams of 'Suryamukhis' – sunflowers – who receive comprehensive training in essential business skills including finances and budgets, inventories and sales backed by digital literacy.

"The comprehensive training transforms them into confident leaders and change-makers within their communities. We create this incredible impact in their lives... the empowerment of marginalised women represents the core of our mission.

"In turn they earn a decent income that goes towards pulling themselves out of intergenerational cycles of poverty. I am proud of my team in the Pollinate group and the women we work with, as well as our transformative impact on the communities we serve.

"Access to clean energy improves health outcomes, enhances educational opportunities, and

John Grimes with Pollinate Group CEO Sujatha Ramani who says "Sharing powerful stories and highlighting the impact of the work to improve livelihoods, promote environmental sustainability and improve health outcomes is a highly effective way to connect with potential supporters".





SEC's Scott Hamilton with people from the Bengaluru community

stimulates economic growth. I find great satisfaction in seeing families and future generations thrive because of our work."

The program is having a great impact across the spectrum.

To date more than 805,000 people have been reached by the 'Suryamukhi' team of 1,849 who collectively have sold 273,000 products and saved households around 1.8bn Indian Rupees (approximately \$33,000).

Importantly the program is estimated to have abated 1.53 million tonnes of carbon dioxide emissions.

Solar light installation project

The Pollinate Group ran a successful campaign to distribute 20,000 solar lights by late June 2023 to brighten the homes of 112,000 people in marginalised Indian communities, save each customer around \$100 each year and reduce annual carbon dioxide emissions by 104,680 tonnes.

In this mission Pollination Group was supported by high-profile sportsman Pat Cummings who founded *Cricket for Climate* in Australia. With India's deep love of all things cricket and the Women's Cricket tour of India this year, Pollinate Group reached more in the community than ever before.

Beyond the 20,000 solar lights program, Pollinate Group aims to scale up by reaching 10,000 women by 2025 and 40,000 women by 2030 in India, Nepal. Plans are underway for product diversification, to expand into other regions and establish new branches and partnerships.

November 2023 marks the eleventh anniversary of Pollinate Group which was founded by six young Australians to tackle energy poverty in the slums of Bangalore and provide alternatives to biomass and kerosene for home cooking and lighting along with other products to alleviate some of the daily struggles of life

"By showcasing the transformative journeys of women entrepreneurs and the positive change brought to communities, we can inspire empathy and drive a deeper understanding of our mission."

On the ground with Pollinate Group

A highlight of the Smart Energy Council's trip to India earlier this year was witnessing the impact of the Pollinate Group by visiting communities in Bengaluru that have benefitted from the program. John Grimes commented "This is simply grassroots smart energy in action, we were proud that our social partner for the delegation has achieved such a massive goal delivering huge savings to communities while helping the planet.

"The solar lighting project is a shining example of how the Pollinate Group empowers lives sustainably, an approach that sees communities revolutionised by identifying and training marginalised women to become successful entrepreneurs.

"Sweeping social change driven by organisations like Pollinate Group are making a big difference, and our visits to communities added a real depth of dimension to our trip to India."

He remarked that smart energy was clearly revolutionising India on a large scale, while Pollinate Group was successfully empowering marginalised communities to do so for themselves.

"Global change is being driven by micro- to macro- renewable energy projects. Together we are shaping a smarter new world," John Grimes said.

<http://pollinategroup.org/donate>



THE CHALLENGING ENERGY TRANSITION

"To reach Net Zero by 2050 solar and wind installations must increase four-fold by 2030, electric vehicle sales increase 18-fold, and all advanced economies phase out coal."

INTERNATIONAL ENERGY AGENCY (IEA)

NOT LOOKING GOOD

According to GlobalData, Energy Monitor's parent company, 47 countries have planned (FID) **new oil and gas fields**.

Top ten countries with the most new oil and gas fields currently under development

bboe = billion barrels of oil equivalent

1. **Russia** (25 fields containing 20.5bboe)
2. **Brazil** (18 fields containing 8.7bboe)
3. **Norway** (14 fields containing 22bboe)
4. **US** (13 fields containing 2.9bboe)
5. **India** (11 fields containing 0.4bboe)

The latest data shows that India's oil production fell by 4% and gas production declined by 3% in the year to April 2023. The country has hugely ambitious renewable energy targets, aiming to install 500GW of renewable energy by 2030.

6. **Australia** (9 fields containing 1.8bboe)
6. **Malaysia** (9 fields containing 1.8bboe)
8. **China** (9 fields containing 1.5bboe)
9. **UK** (9 fields containing 0.4bboe)
10. **Nigeria** (8 fields containing 2.1bboe)

Source: Energy Monitor

IN BRIGHTER NEWS

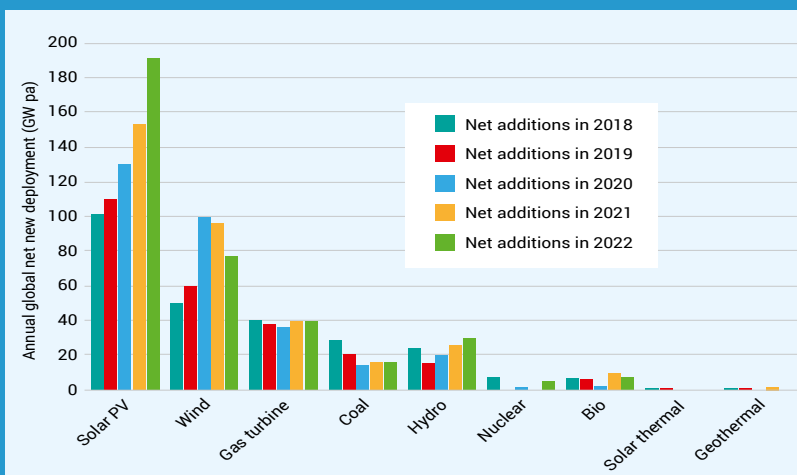
In 2022 total **SOLAR** capacity exceeded 1 terawatt (1,000 gigawatts)

The sector is growing at about **20%** per year

Under this scenario, solar will reach **6TW** around 2031 (*greater capacity than coal, gas, nuclear and hydro combined*)

Earth's population by 2050: 10 billion people – requiring 200 billion MWh per year (= 200,000TWh per year)

"If sustained, solar's growth rate of 20% per year is easily fast enough to reach 80 terawatts of installed capacity in 2050 – enough to provide 130,000 terawatt-hours per year and (with help from wind) to entirely decarbonise an affluent world."



Cheap solar is overtaking all other new-build energy sources. Global generation capacity additions (2018-2022) IRENA, GWEC, WNA, GEM, CC BY.

Source: Andrew Blakers, Despairing about climate change? These 4 charts on the unstoppable growth of solar may change your mind, 'The Conversation', May 2023

GENERATIONAL ATTITUDES TOWARDS THE ENERGY TRANSITION



43% of younger households say we should transition to 100% renewables by 2030



38% of older households say we should transition to 100% renewables by 2030



29% of retired households say we should transition to 100% renewables by 2030 (44% of this group say it's impossible or no need! Comments, anyone?)

N=2,120 Young household (aged under 44): 10% Older household (aged over 44): 26% Retired household (retirees): 43%

"Conversations around energy production, climate change and our net-zero emissions targets are inherently interlinked... Young people are going to live with the impacts of increasing extreme weather and natural disasters over their lifetime and therefore may view the issue more seriously and see the need to act quickly."

Source: June 2023 Energy Consumer Sentiment Survey

ACTIONS TAKEN OR INTENDED TO REDUCE ENVIRONMENTAL IMPACT



35% of Gen Z and **33%** millennials have stopped driving a car



43% of Gen Z and **41%** millennials plan to make their home more energy efficient



41% of Gen Z and **44%** millennials plan to purchase an EV

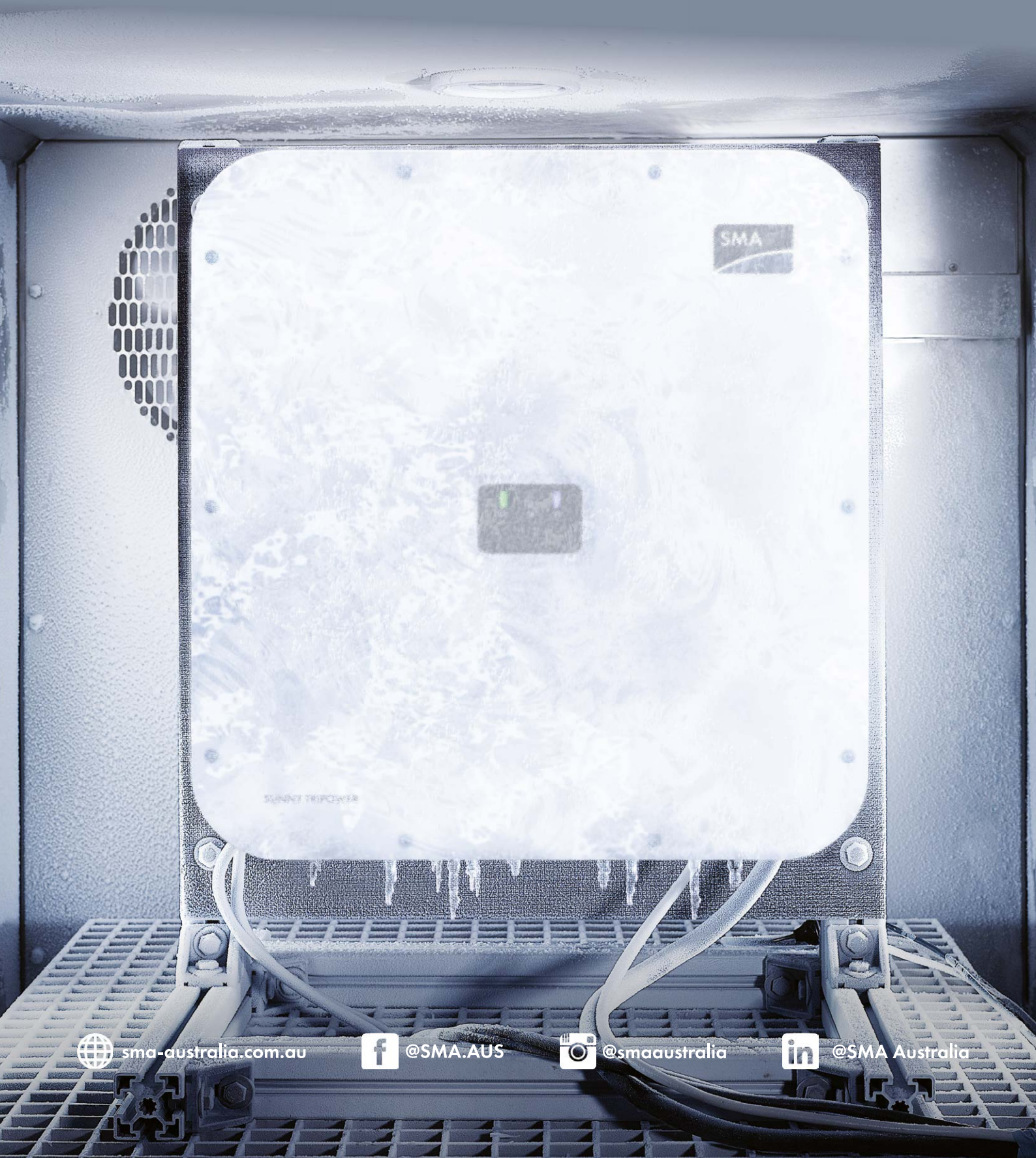
Gen Z = born 1996 to 2012 Millennial = born 1980 to 1996

Source: 2023 Gen Z and Millennial Survey, Deloitte

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We have the vision

The Smart Energy Council cordially invites everyone with a stake in the renewable energy industry to join us in early March 2024 in Sydney to learn more about Australia's journey toward a renewable energy generation and exporting superpower.

Never has it been so urgent to transition to a decarbonised energy network.

We need to tackle this head on to avoid the worst consequences amid dire warnings of 'climate collapse' being echoed around the world.

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In the halls of the 2024 Smart Energy Show delegates and visitors, policy makers and cleantech investors among them, will be able to hear and see the transition in action. Smart Energy Council members' innovation in all its forms from physical products to financial, digital and other support services that are playing a vital role to construct a better, smarter electricity network.

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A GLIMPSE of chief executive John Grimes' diary reveals a demanding overseas schedule: **China in late May** for the **world's biggest solar conference**, followed by the all-important trip to **G20 meeting in Goa, India** in July. There, he and Senior Adviser Scott Hamilton hosted Minister Chris Bowen for the Australia-India Smart Energy Industry Roundtable event.

John and Scott also addressed several side events at the Clean Energy Ministerial meetings including the Building Resilient Solar Supply Chains panel with the ultimate goal to accelerating the renewable energy transition.

According to Scott there's a strong chance the Smart Energy Council will be successful with its proposal for a \$3 million Australia-India Energy Transition Hub that will strengthen technical ties and innovation between the two nations.

In late August John travelled to Brazil for the **ABSOLAR Conference**, advancing a pact between the Brazilian Solar Photovoltaic Energy Association and Australian solar energy organisations. Partnering to strengthen industry and climate collaboration, the peak industry bodies are working to reinforce the development of PV markets in both countries, boosting investments and business opportunities.

"This is a significant partnership in the development and growth of solar energy, particularly as Brazil will host COP30 and Australia aspires to host COP31," John



Minister Bowen joined the Smart Energy Council's John Grimes and other business leaders in industry roundtable discussions in Delhi to affirm Australia-India renewables opportunities



Grimes said. "Australia represents a highly relevant market for Brazil in terms of exchanging experiences on regulation and public policy, and bilateral cooperation may increase the attraction of new international investments."

Fast forward to mid-September when John Grimes represented the SEC at **RE+ Las Vegas** (formerly Solar Power International, Energy Storage International, and Smart Energy Week) produced by the Solar Energy Industries Association and the Smart Electric Power Alliance.

In late October John leads a **high-level delegation of 20 to China** with a packed seven-day itinerary followed soon thereafter by the **mid-November conference in Indonesia**.

John then caps off the year at **COP 28 in the UAE in early December**.

Quite some travel for one who is less than enamoured by long haul or any other flights!

Importantly the Smart Energy Council chief executive is in demand as the voice of Australia's renewables industry at significant global events where he articulates coherent plans for Australian industry and climate targets.

Runs on the table

Significant lobbying by the SEC resulted in the addition of 'Distributed Energy Resources' to the agenda of the upcoming Energy Ministers Meeting. It's a vital prong, says Connor Woulfe of the Smart Energy Council who is leading the push for demand-side response to be rewarded across the nation. "This means an opportunity to create and deliver new markets, policy certainty and good regulation of distributed energy resources."

The SEC continues to push for a National Small Scale Renewable Energy Storage Scheme with 8GWh of small-scale energy storage by 2030 that is linked to pre-existing SRES scheme and with rebates based on GWh capacity of the energy storage device. "Household Energy Storage is the cheapest form of firmed renewables on the grid, let's invest where it counts!" says Connor who urges full implementation through Brief Legislative Amendment.

Capacity Investment Scheme: In related developments, in late June the NSW and Federal Government announced a Capacity Investment Scheme partnership that will result in close to one gigawatt of additional dispatchable capacity and eliminate forecast shortfalls.

South Australia and Victoria are poised for their next Capacity Investment Scheme auctions to be announced in October.

In late August the Department of Climate Change, Energy, the Environment and Water (DCCEEW) and AEMO presented an exclusive briefing for senior Smart Energy Council members on the Capacity Investment Scheme which is set to deliver 6GW of zero carbon firmed capacity by 2030 and play a key role in the energy transition as coal-fired power stations close.

Renewable Energy Storage Summit

In early August SEC delivered a highly successful **Renewable Energy Storage Summit** in Melbourne where delegates learned more about the great potential of renewable energy storage in home batteries, electric vehicles and through large renewable energy storage projects to unlock Australia's energy transition. In turn storage solves renewable energy supply issues and benefits battery owners and grid stability.

"When it comes to renewable energy storage, we need everything, everywhere, all at once, again and again and again," said Smart Energy Council CEO John Grimes. "Australia won't reach 82% renewables, or a



43% reduction in emissions by 2030, without massive investment in renewable energy storage... and we know it works."

The Summit assembly heard from Chris Miller of the State Electricity Commission (Victoria); David Roberts of Volts podcasts; Motts MacDonald Technical Director Ian Boake; Gaw Capital's Oliver Yates; Lara

Panjikov (Fluence); Allison Hawke (Atmos Renewables); Stan Krpan, Solar Victoria CEO; Dr Helen Haines MP, Independent Federal Member for Indi and others.

Key messages can be read online at <https://smartenergy.org.au/events/energy-storage-summit/>

Government relations and industry-shaping events

The highly energised **Electrify Parliament** event in March was reprised in mid-winter. Keynote speakers included John Grimes along with Senator Jenny McAllister, Senator David Pocock, Monique Ryan MP, Allegra Spender MP, Saul Griffith and Dan Cass from partner Rewiring Australia, Alison Reeve, Grattan Institute and more.

The group received a positive reception when calling on the Federal Government to develop more ambitious electrification efforts to enable Australia to detach from fossil fuel gas, and will continue to promote the benefits of home and business electrification at every opportunity.



John Grimes at Parliament House with Independent MPs and Dan Cass of Rewiring Australia

The SEC secured a prominent presence at the **ALP National Conference** in mid-August, staging **two fringe events**: 'Out of the naughty corner' focusing on Australia's bid to host the COP31 UN climate conference in partnership with the Pacific which could see 35,000 participants from every nation come to our shores in 2026. Terri Butler, President

of the Smart Energy Council, was MC for the popular fringe events. And in conjunction with the ETU and the Labor Environment Action Network the SEC hosted an important event to highlight one year of the **US Inflation Reduction Act** which supports good jobs and addresses climate change, and the impacts this US Act is having on Australia.

John Grimes and the SEC's Advocacy team met with Senator Jenny McAllister, Chris Bowen MP, Senator Penny Wong, Linda Burney MP, Pat Conroy MP, Ed Husic MP, Tanya Plibersek MP, Don Farrell, Lance McCallum MP, Andrew Barr, Jim Chalmers MP, Murray Watt MP and many more over the course of the ALP National Conference.

In other industry activities the Smart Energy Council presented evidence before the House of Representatives Inquiry into **Developing Advanced Manufacturing in Australia**, and presented a comprehensive submission on the **Queensland Energy and Jobs Plan**.

The advocacy team continues to meet with Parliamentarians, law makers and advisors in the push to shore up a smooth and timely transition to renewables.



In the media and around the states

The Smart Energy Council has been a vocal supporter of the **Victorian Government's ban on new gas connections** for new home builds from 2024, and is calling for other states to join, saying stopping new gas connections for residential homes and subdivisions means



lower household bills and lower emissions.

The SEC is supporting **Queensland's** move to adopt **seven-star energy efficiency ratings for new home builds** and likewise hopes other states will follow suit. The SEC has formed an internal group to brainstorm analysis and media opportunities on seven-star standards.

In mid-August SEC's **Richie Merzian** appeared on ABC's *The Drum* alongside Jeff Goodell,

In early July, John Grimes joined the team from Just Another Solar Podcast for their 40th episode where he emphasised the key message "It's about moving the dial on climate and doing it through the market and innovation."



author of *The Heat Will Kill You First: Life and Death on a Scorched Planet*, to discuss the vital role of renewable energy in preventing further climate extremes.

Extending the life of **the polluting Eraring Coal Fired Power Station in NSW** would be a disaster for the environment and the economy, with the end of affordable energy bills in years to come, the SEC states. "The solution for firmed capacity for NSW is not keeping these coal clunkers running well past retirement but fast-tracking more renewable storage," John Grimes said, "Just like Origin Energy, the owners of Eraring, who are building a battery on-site, more renewable storage can help stabilise prices for energy consumers. Investing in sensible storage policy now, means NSW can avoid propping up an overly expensive, non-commercial coal power station past its economic life."

He adds the NSW government is in danger of falling short of its renewable energy targets and **drastic change is required from the NSW Planning Department** to account for the glaring shortfall in clean energy project assessment. "We're in a race to decarbonise, we can't afford to stifle progress, especially after so much delay."

The Smart Energy Council is publicly calling for:

- An acceleration of the delivery of the federal Capacity Investment Scheme [CIS] that was designed to fill the gap of energy storage required over the coming decade as coal retires;
- Funding for storage projects to be mobilised this year and energy storage construction locked in to match coal closures from 2025; and
- Strengthening of pre-existing LTESA contracts to provide an insurance supply of energy storage in the Renewable Energy Zones.

SEC Working Groups: getting the messages across

The Smart Energy Council's working groups are chaired by leading member companies, policy and industry experts. Working groups meet regularly to discuss barriers and opportunities in the smart energy sector and adjacent industries, informing Smart Energy Council policy submissions and advocacy priorities.

- **Climate Capital Forum** – established to keep Australia in the game as we race to Net Zero, plotting Australian renewable energy investment on a strategic course to decarbonise our economy.
- **Distributed Energy Resources (DER)** – solar PV, batteries, electric vehicles, and demand response are playing a greater and greater role in our energy system. Chair: Wilf Johnston, Enphase Energy
- **Large Scale Renewables** – this working group successfully saw the adoption of the Capacity Investment Scheme. Chair: Jonathan Upson, Tilt Renewables
- **Manufacturers & Australian Made** – promoting Australian smart energy companies that are currently innovating, developing and manufacturing smart energy products in Australia. Chair: Rod Scott, Selectronic
- **Renewable Hydrogen** – the brains trust for directing Zero Carbon Hydrogen Australia's policy advice and the Zero Carbon Certification Scheme. Chair: Joanna Kay - Zero Carbon Hydrogen Australia
- **Smart Transport** – striving for a transport system that is clean, accessible, equitable, and connected to the energy grid of the future. Chair: Jason Venning, FIMER
- **Solar Installers** – guidance for establishing the Installer Accreditation Scheme, directing training, and providing an installer's perspective on recycling and industry issues. Chair: Alistair McGrath-Kerr, Smart Energy Council
- **Solar Panel Recycling** – the Queensland Solar Recycling Consultation Committee meets regularly during the two-phase solar recycling pilot. Chair: Carlos Nunez, Smart Energy Council
- **Gender Action Plan** – a high level committee to bolster interest and participation in the renewables sector. Chair: Nicolette Boele, Smart Energy Council

Keen to keep up with the Smart Energy Council?



Tune in to Twitter at:
@SmartEnergyCncl



Titanium, Platinum and Gold members receive regular industry briefings & updates via the special WhatsApp group messages

Rounding up industry advocacy

A high-profile Gender Action Plan advisory board has been established and the Gender Action Plan training finalised and approved for CPD points (see page 34).

In matters relating to **Smart Transport** the SEC continues to play a leadership role with Audrey Quicke as Transport Co-Leader with Climate Action Network Australia (CANA). *More on page 36.*

Senior SEC staff and advisors also had a seat at the Queensland Renewable Energy Zone Consultation Webinar; the Electrical Trades Union roundtable breakfast with David Roberts; the Curtin Sustainability Fair; the Heavy Vehicle Manufacturing Industry Roundtable; the Australian Energy Week; and was a major contributor to the SEC's ZCHA Hydrogen Headstart Consultation Submission (*more on page 20*) and the Electrify Bennelong Event.

John Grimes was also a lead presenter at the community-based Electrify Mackellar event with Saul Griffith and Independent MP Dr Sophie Scamps.



sophie
scamps

The Life Electric

Sunday July 30

Avalon Recreation Centre



2:30 - 4pm Free Community Net Zero Expo

Electrify your afternoon with 10+ expert stallholders for advice on solar, EVs and other renewables solutions, plus music, lucky door prizes, food stalls and test rides.

4.00 - 5.30pm The Life Electric Panel

Saul Griffiths, Dr Sophie Scamps and John Grimes discuss the best way to run your home and business, for your wallet and for the climate.

Tickets \$10

www.sophiescamps.com.au/events



BRIDGING THE EMPLOYMENT GAP



THE SMART ENERGY COUNCIL is powering ahead with actions to upskill the renewables sector. Nicolette Boele is leading the charge and is ably assisted by a high-powered GAP Advisory Board of 12 leading Australian business advisers and innovators, former parliamentarians, industry associations, trade union leaders and more.

"We have assembled a group of committed people with diverse and extensive experience to address critical workforce issues, to progress GAP activities and training course material, and play a pivotal role in our initial 'communities of practice' program which kicks off later this year," Nicolette said.

The expert group includes Arti Agrawal of Vividhata, Alex Balsillie of the Lord Mayor's Charitable Foundation, Megan Fisher of Energy Lab, Trevor Gauld of the Electrical Trades Union, Katie Hepworth of the Australian Manufacturers Workers Union, Anne Hellstedt of the College of Leadership and Management and Engineers Australia, Joanna Kay of Zero Carbon Hydrogen Australia and Holly Taylor of the Energy Efficiency Council.

Smart Energy Council chief executive John Grimes along with board members Terri Butler (President), Stephanie Bashir (Nexa Advisory), Samantha Craft (AWISE and Solar Cutters) complete the GAP Advisory Board which held the first of its regular meetings in late July to contemplate the design of the Gender Action Plan survey.

Grassroots input: Key issues facing the industry were spelt out by participants of the SEC's Gender Action Plan Industry Baseline Survey which revealed that the majority (82%) of respondents were excited to work in a meaningful industry.

The survey highlighted the constraints on attracting and retaining workers, namely *availability* of suitably experienced personnel (51%) and *quality* of suitably qualified and experienced personnel (31%).

In other findings, half of all respondents cited a problem with gender diversity in their workplaces, yet just one in five (20%) judged their workplaces 'blokey' and in need of a fix up, and fewer than half felt proud about their industry being inclusive of women (48%).

All male respondents felt they were paid fairly for their work whereas just 30% of women respondents felt the same, 37% of women felt they

weren't paid fairly (and this was a trigger for a quarter of those to seek alternate employment in the foreseeable future). In more upbeat news, 68% of women feel respected, valued and supported at work.

Asked about how they would like to stay engaged in the Gender Action Plan, 26% of men compared to 61% of women respondents were interested in sharing stories and participating.

Interesting opinions were shared, among them:

- "Although our workplaces are still male dominated, the opinions and perceptions of the young males coming through their apprenticeships are changing, most are open to having women walk amongst them..."
- "I have been in the electrical/solar industry for 15 years and the tide is definitely turning but not for the old men, they are the ones whose mindsets we need to shift."
- "There are so many aspects to the renewables industry. Not every task is lifting heavy equipment. There are many meaningful roles,"
- "Support educational programs and initiatives that encourage young girls to pursue careers in STEM. Seek leadership roles, speak at conferences and contribute to industry publications to increase visibility."

How to make the workforce more inclusive?

More interesting comments from survey participants:

- "Older managers, in particular, are the ones that require more anti-discrimination training; under-50s are much more focused and easier to interact with."
- "Promote we are saving the world, one panel, one battery at a time. Not all superheroes wear capes!"
- "More openly celebrate the contributions made by women in this space, visit schools and universities and have inspirational women educate children on how they can create impact and dream big to impact positive change, promote return to work training programs to women to give them a place to learn, grow and contribute, and ultimately lead when they're ready."
- "A famous teacher has said that unless all humans treat all humans as equal, the human race cannot evolve. Women have to be as free as men, never under men's control on a basis of gender."

- “Let’s build a mentoring program for senior women in non-competing industries to become mentors for younger women. Introduce women’s only events, profile women in the industry.”

One participant noted the improvements in inclusiveness and gender issues over the past two decades, and proposed three strategies for enhanced inclusivity for women in the workplace and our industry: regular diversity audits to identify any existing biases or barriers and develop targeted action plans; transparent and equitable promotion processes; and establishing affinity groups or employee resource networks for women to foster a sense of community and provide a platform for their voices to be heard.

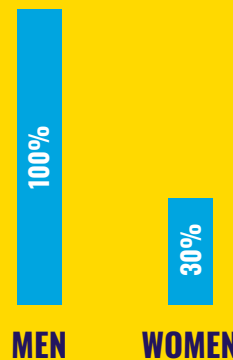
Noted and appreciated!

“We received lots of inspired ideas and observations around inclusivity,” Nicolette Boele said, “the GAP Advisory Board will fully contemplate all findings and examine ways to progress smart suggestions.

“Better still the workable, practical suggestions will be factored into the development of the Foundations module which will be led by industry veteran Geoff Bragg.”

The Foundations module is offered at the Smart Energy Expo Brisbane in September, and the Solar Installers Roadshow in Melbourne in November, earning participants 30 CPD points. The Gender Action Plan communities of practice courses will commence at the start of Q4 2023 and continue throughout 2024.

SMART ENERGY INDUSTRY BASELINE SURVEY



ARE YOU PAID FAIRLY FOR YOUR WORK?



Note: Of the 104 respondents surveyed in May 2023, 60 (59%) identified as men, 40 (39%) as women, and two (2%) as trans or not disclosed.

The Smart Energy Council sincerely thanks all survey participants for their contributions.

A CIRCULAR ECONOMY

SOLAR PANEL RECYCLING PILOT CONSULTATIVE COMMITTEE #4



#SmartEnergy

Wayne Smith chairing the meeting

THE SMART ENERGY COUNCIL'S leading work with the Queensland Government and The Activ Group is fast progressing, with the fourth meeting of the Solar Panel Recycling Pilot consultative committee discussing phase two of what will be Australia's first industry-led Solar Panel Recycling Pilot.

The pilot project will include on-ground collection, recovery and processing of between 12,000 and 24,000 solar panels.

“The actual number of panels recycled and re-used will be assessed and this will help us determine the optimum design of a broader recycling scheme,” said Wayne Smith of the Smart Energy Council who chairs the meetings.

“A solar panel recycling scheme is essential to a renewable energy backed economy, where energy generation is sustainable in itself. Our consultative meetings are key to designing the right recycling scheme for the industry.”

He explained the Queensland Government is considering whether solar panels should be banned from landfill dumps, and the likelihood of a draft e-products strategy resulting in a ban being imposed before the end of the decade.

Meantime the Smart Energy Council welcomes the Federal Government's proposal for solar panel recycling regulation and 'Wired for change' consultation paper, and will provide advice on the learnings from its Solar Panel Recycling Pilot project in the hope it will better inform the Federal Government's national approach.

<https://smartenergy.org.au/solar-panel-recycling-pilot/>

FUEL EFFICIENCY STANDARDS: 'NO MORE TIME TO WAIT'

THE SMART ENERGY COUNCIL is a staunch campaigner for strong fuel efficiency standards which by any measure are a no-brainer: more efficient cars are better for the climate and better for the hip-pocket.

Smart Energy Council modelling suggests strong fuel efficiency standards could save Australian motorists up to \$875 a year in costs, and would increase the uptake and availability of electric vehicles, lower fuel use and carbon emissions and drive efficiency improvements in the vehicle fleet.

What's not to like? Timing is key.

"Any further delays to implementing strong fuel efficiency standards will lock Australians into substantially higher fuel costs and carbon emissions," says Audrey Quicke, Smart Energy Council Smart Transport Lead. "There is no time to waste. Australia needs strong fuel efficiency standards now."

In summary, the SEC is urging the Federal Government to introduce fuel efficiency standards that are:

- Legislated by the end of 2023 and in force by January 1, 2025.
- Strong and ambitious, align with Australia's emissions reductions commitments, and catch Australia up to the standards set in other car markets
- Independent and robust, avoid loopholes, and make emissions data publicly available and robust, and
- Accompanied by a smart transport strategy to encourage a shift to active and public transport, decarbonise freight, heavy vehicles and non-road transport, and accelerate the local electric vehicle, battery charging and component part industry.

"These are among the key measures needed to uplift Australia's smart transport industry," Audrey said. "Strong fuel efficiency standards by the end of 2023 is a high priority for the Smart Energy Council."

Read more at

<https://smartenergy.org.au/articles/strong-fuel-efficiency-standards/>



SMART ENERGY IN ACTION

The Smart Energy Council is supporting the **Australian Manufacturing Workers' Union proposal for a tripartite approach to the transition to zero-emissions heavy vehicles**, through a National Innovation Council involving government, industry, climate and energy policy organisations, and the unions covering workers in electric mobility industry supply chains.

The AMWU cites the "growing consensus among industry representatives, automotive peak bodies, researchers, environmental organisations and unions that Zero Emission Vehicles should be a major industrial component of meeting our climate policy targets", and presents a comprehensive and compelling list supporting the acceleration of ZEVs, noting strong agreement among a wide range of stakeholders for:

- coordinated federal action to develop Australia's capabilities in ZEV industries, jobs, markets, infrastructure and environmental standards
- a rapid transition to ZEVs that maximises Australia's participation in manufacturing industries, and
- close cooperation between industry and unions to develop a ZEV manufacturing industry and related renewables and zero-carbon industrial opportunities.

The Australian Government is currently developing a **Transport and Infrastructure Net Zero Roadmap and Action Plan** to support reducing transport emissions across the whole transport sector

THE RACE IS ON FOR EV INTEGRATION

The Smart Energy Council is also pleased to be part of the Industry Reference Group for the RACE 2030 CRC '**Strategic Electric Vehicle Integration Project**', a three-year, \$3.4 million project investigating early-stage use cases for electric vehicles in business fleets, residential precincts and regional Australia.

Research Program Manager Oliver Hill says "Bidirectional EV charging represents the single biggest flexible (and as yet untapped) resource in Australia's energy transition... As the uptake of EVs accelerates, one particular challenge slowing down the EV uptake in Australia is coordinating a successful integration into society.

"Just like other Distributed Energy Resource (DER) solutions, such as demand flexibility, rooftop solar and battery storage, the integration of EVs into homes, businesses and electricity networks presents a range of opportunities and challenges."

"It is clear that the transition to electrified transport has begun, but these are just early days. With 80,000 EVs on Australian roads at present, growing to a possible 2.5-3.5 million by 2030, the additional





Audrey Quicke with Queensland Transport Minister Mark Bailey

and provide the smart transport industry with future investment certainty. The Smart Energy Council is engaging with the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA) and calling for the Roadmap and Action Plan to align Australia's transport and infrastructure policy and spending with our climate targets, and support Australian jobs and manufacturing.

Smart transport formed a major segment at the **Smart Energy Council's Brisbane Conference** in early September, with Queensland

Transport Minister Mark Bailey spelling out the State's actions and ambitions in electric vehicle uptake. His address was complemented by industry experts on electric ute conversion, electric ferries and smart transport along with key exhibitors Kia and FIMER and as a training course on electric vehicle charging and supply equipment, offering participants 30 CPD points.

South Australia Power Networks' Michelle Howie presented to the **Smart Transport Working Group on SAPN's approach to electric vehicles**, smart charging and V2G. Michelle discussed how SAPN is enabling South Australia's energy transition in a way that is more clean, accessible and affordable for all electricity users.

Reverse gear: In its upcoming Budget the NSW government is considering scrapping its \$3,000 rebate on new electric vehicles up to \$68,750 in the belief the incentive is actually increasing the cost of cars.

Speaking to RenewEconomy's *The Driven* Smart Energy Council's Audrey Quicke said "Now is not the time to pull the rug out from under electric vehicles...Transport emissions are high and rising petrol prices are hitting record highs, and governments should be doing all they can to support the switch to electric cars and other forms of transport.

"Countries with high electric vehicle uptake achieved this through strong targets and goals, as well as aligned funding".

According to the Electric Vehicle Council by the end of July about 130,000 electric cars were on Australian roads, and they comprised 8.4% of new car purchases in the first half of the year, a healthy increase from the 3.8% recorded in 2022.

load EV charging places on the energy system varies depending on when and where it occurs," Oliver wrote.

"Whether EVs cause a slight increase in total demand by 2030, an enormous instantaneous charging load, or are fully integrated into a decentralised energy system is not yet known.

"However, what the SEVI project will discover are the approaches that can be used to supercharge government fleet transitions, electrify regional communities, and future-proof residential precincts," Oliver explained.

Project partners include Ausgrid, Australian Power Institute, Endeavour Energy, Planet Ark Power, Powertech Energy, the New South Wales Government, the South Australian Government, Selectronic, SA Power Networks, SwitchDin, Plico Energy, Western Power and Witchcliffe Ecovillage, and are joined by AEMO, CSIRO, Energy Consumers Australia (ECA), the National Transport Research Organisation and others.

Research partners leading the project include Curtin University and the University of Technology Sydney, with additional research from Griffith University, Monash University, RMIT University, and the University of South Australia.

Complementing the work of RACE's Strategic Electric Vehicle Integration Project is the recently released **ARENA report on the opportunities and challenges for bidirectional charging in Australia**.

The report provides a high-level snapshot of the current state of V2X technologies, and associated opportunities and challenges for the Australian market, with a particular focus on residential and light commercial vehicle-to-grid (V2G) applications.

Although future consumer uptake of bidirectional charging is uncertain, bidirectional EV charging represents one of the largest potential enablers of Australia's energy transition, the report states.



AEMO's 2022 Integrated System Plan reported the NEM will require 640GWh of all forms of storage by 2050 and that usable storage in Australia's EV fleet at that time will be nearly four times total NEM storage requirements. Flexible bidirectional charging from only 10% of this capacity could provide 37% of total NEM storage needs, offsetting around \$94 billion of large-scale battery storage investment (at current prices).

By the early 2030's, EV fleet battery capacity is likely to surpass all other forms of storage in the NEM, including Snowy 2.0 which has recorded another cost blowout to \$12 billion.

These fascinating facts and stats are a teaser of the report prepared by new energy technology, policy and strategy – enx consulting – which emphasises "Australia's EV vehicle fleet will be the largest and lowest cost potential storage resource in our energy transition".

"Clearly what Australia needs is a policy framework to accelerate the supply of bidirectional charging-capable equipment," Audrey Quicke states. www.enxconsulting.au, www.arena.gov.au

IN OTHER NEWS...

CEFC BOOSTS RIDESHARE The Albanese Government is unlocking \$20 million in concessional finance from the Clean Energy Finance Corporation to radically boost the number of EVs used in rideshare fleets like Uber.

According to Minister for Climate Change and Energy Chris Bowen, rideshare vehicles cover five to six times the distance of an average privately owned car and that “By encouraging more EVs in rideshare fleets, we’ll be able to reduce transport emissions in Australia... fleets make up around half of all vehicle sales, so this initiative is a big deal, as well as boosting the market for second-hand EVs.”

CEFC finance will enable Splend, Australia’s biggest rideshare vehicle subscription provider, to double the number of EVs it offers on its flexible vehicle subscription plans, bringing Splend’s EV fleet to 1,000 EVs by the end of 2023.

It means an extra 500 rideshare drivers will be able to save around \$100 every week on vehicle costs, fuel and servicing.

Since starting their EV rollout in late 2022, Splend’s EV fleet has travelled over 6.2 million kilometres and saved 1,000 tonnes of CO₂ emissions.

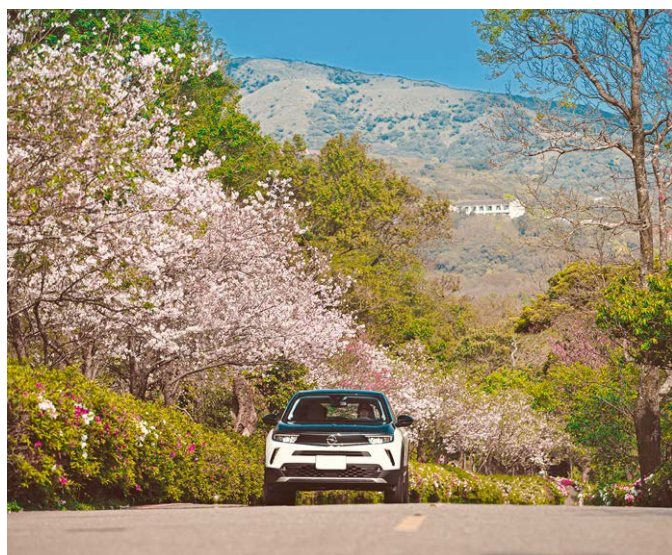
NOT ALL EVS ARE EQUAL! Total Environment Centre has created the Green Electric Car Guide which scores and ranks the environmental impacts of the base models of all electric cars currently for sale in Australia costing under \$100,000.

Cars are scored according to their lifecycle carbon emissions, their use of sustainable technologies, and each carmaker’s record in promoting or discouraging the decarbonisation of the transport sector.

“By buying any electric car, you are helping to decarbonise Australia’s transport sector, which is one-fifth of our total economy-wide emissions”, explained Mark Byrne, TEC’s Energy and Transport Analyst.

Topping the list and scoring 73 out of 100 is the Tesla Model 3 rear wheel drive followed closely by its Model Y rear wheel drive at 68, and the Volvo EX30 Plus pure electric at 67.5. Polestar 2 standard range single motor comes in at 62 out of 100. Those scoring in the 50s include two Volvo models, Hyundai and Fiat, with the Nissan leaf trailing at 48.5. At the bottom of the list sits MG Kia BMW Hyundai and MG ZS.

<https://www.tec.org.au/>



ROBUST EURO 7 WILL SUBSTANTIALLY IMPROVE AIR QUALITY IN EUROPE

New research commissioned by Transport & Environment and carried out by Air Quality Consultants shows that a robust Euro 7 standard delivers substantial improvements in air quality on top of the car and truck CO₂ standards.

Aligning car and truck NO_x pollution limits with robust Euro 7 limits (i.e. 30mg/km for cars, 350 mg/kWh cold limit and 90 mg/kWh hot limit for trucks, which were found to be the optimal policy option by the Euro 7 Impact Assessment) will reduce NO₂ pollution from road transport in Brussels, Madrid, Milan, Paris and Warsaw by around 50% by 2035. This will result in up to 24% lower concentrations of toxic NO₂ in pollution hotspots in those cities in 2035.

Further, greater ambition on brake pollution limits could also rapidly accelerate reductions in particle pollution from brakes. A brake particle limit of 3mg/km in 2025 instead of 7mg/km in 2025 and 3mg/km in 2035 would almost double the reduction in brake particle pollution from 19% to 34% already in 2030.

‘KNOW YOUR EV’ WORKSHOPS The ACT branch of the Australian Electric Vehicle Association (AEVA) is running a series of ‘Know Your EV’ workshops reinforcing the idea that EV ownership requires a shift in mindset, especially when it comes to charging.

The popular workshops discuss home charging options and local commuting, and advise that charging speeds above 7kW are rarely needed. Their portable AC charging station demonstrates ease of use of an AC charging station and the workshop covers the full EV driving experience: how EVs accelerate, brake, how they heat the cabin and more.

“Perhaps the most complex topic is ... long distance driving... how to plan for road trips, how to make use of destination charging at hotels, and how to operate DC fast chargers,” says Ben Elliston, Advocacy working group convenor of the ACT branch of AEVA.



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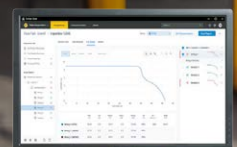


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GLOBAL BOILING, SUMMER SIZZLER...

July might have been the warmest month in 120,000 years.



"I don't know anyone who honestly believes that climate change is not a problem... it's an existential threat."

JOE BIDEN, US President

Moving out of the Goldilocks zone: "There's no air conditioning bubble [for] fields and crops, animals, the entire population. We're moving into a new climate era – the temperatures we grew up with are changing dramatically, the future is one of extremes, we need to prepare for change... from a solutions view it's obvious: we need to get off fossil fuels, stop the burning."

Jeff Goodell, author of *The Heat Will Kill You First: Life and Death on a Scorched Planet*, and contributing editor *Rolling Stone*



"The solutions are twofold, we need to get off fossil fuels and at the more immediate level to adapt; to build resilience is to build solar panels and to transition to batteries on wheels (EVs) to deal better with extremities."

RICHIE MERZIAN, International Director, Smart Energy Council (speaking on the ABC's *The Drum*)



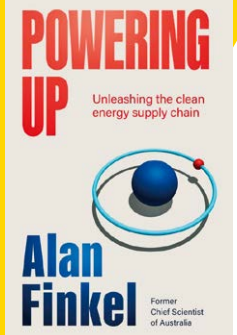
"There's this pathway now via critical minerals and iron ore and hydrogen for Australia to pivot and become a productive force for good in the climate world rather than just a source of emissions."

DAVID ROBERTS, US journalist, Substack, Volts



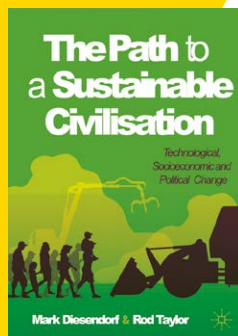
"A book that everyone interested in the energy transition should read. We need to decarbonise our electricity supply, and quickly – former Chief Scientist Alan Finkel shows how green energy can be a reality, and bring economic benefits... Powering Up covers most of the issues relating to the energy, it begins by describing the magnitude of the energy transition we face. The process may be summed up very simply as 'decarbonise electricity and electrify everything'. But that simple statement hides a great many complexities."

JOHN QUIGGIN, Professor, School of Economics, The University of Queensland



"We argue it is not sufficient for citizen organisations and governments to address specific environmental, social justice and peace issues. It's certainly necessary, but we must also struggle for systemic change. This means challenging the covert driving forces of environmental destruction, social injustice and war, namely, "state capture" and the dominant economic system."

MARK DIESENDORF, Honorary Associate Professor, UNSW Sydney



"To halve emissions by 2030 and reach net zero by 2050, we urgently need policies to rapidly replace gas water heaters with 'smart' electric water heaters. Smart heaters can be switched on and off in response to changes in electricity supply and demand across the grid."

BJORN STURMBERG et al, ANU



"If sustained, solar's growth rate of 20% per year is easily fast enough to reach 80 terawatts of installed capacity in 2050 – enough to provide 130,000 terawatt-hours per year and (with help from wind) to entirely decarbonise an affluent world."

ANDREW BLAKERS, ANU





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Installer Roadshows hit the mark

IN LATE JULY eight intrepid technical experts – some of the best in the business – traversed the length and breadth of Australia to deliver training to solar system installers on the latest industry specifications and regulations.

Together they reached more than 200 installers in four states in just four days: Adelaide on Monday July 24, Brisbane Tuesday July 25, Melbourne Wednesday July 26, and finally Perth on Thursday July 27.

The five-hour sessions included advice on new string inverters, hybrid inverters as well as new home ecosystems with sophisticated energy management systems and EV charging.

Completing the sessions was the technical low-down on grid battery design, best practices and batteries.

Participants gained 30 CPD points from the sessions which concluded with a casual dinner and networking drinks at the city venues chosen for their accessibility and centrality.

The Smart Energy Council would like to thank all presenters: Simon Ceglinski from PowerPlus, Rex Wang of Growatt, Peter Swan of Solis,



Dan Su and Angela Wei of Jinko, Colin Wand of ZNShine, Ricky Jian of AlphaESS, Joey Zhang of SolaX and Ivan Zhang of Jolywood.

SEC Sales Manager Alistair McGrath who also attended all sessions commented on what was a rather gruelling schedule, saying "The presenters did an airport busting four-day back-to-back trip, it was a lot of travel!"

But very much worth it in terms of the level of industry updates delivered that in turn help to ensure best practice in installations.

Some of the feedback received from participants: "Joining the Installer Roadshow in Adelaide has been incredibly insightful. I learned a lot from the discussions on inverters, connections and all the configurations."

Hiroe from SA Power Networks commented on the "outstanding professionalism" and "great partnership" of the events and was extremely happy with the engagement of the Smart Energy Council, describing the organisation as the "gateway" to industry.

Installers to help Victorians get off gas

THE SMART ENERGY COUNCIL joined Rewiring Australia, Friends of the Earth, the Energy Efficiency Council and the Energy Savings Industry Association in welcoming Victoria's ban on gas connections for new home builds from 2024.

Victoria is delivering a \$3 million package including free training for 1,000 plumbers and apprentices to design and install energy efficient heat pumps and solar hot water systems, and free training for 400 electricians and fourth-year apprentices to safely design and install rooftop solar and home battery systems.

Eight in 10 Victorian homes are connected to gas – the highest rate in the country – which contributes about 17% of the state's emissions.

The gas ban will lower emissions and reduce household bills, and is a step closer to full domestic electrification.

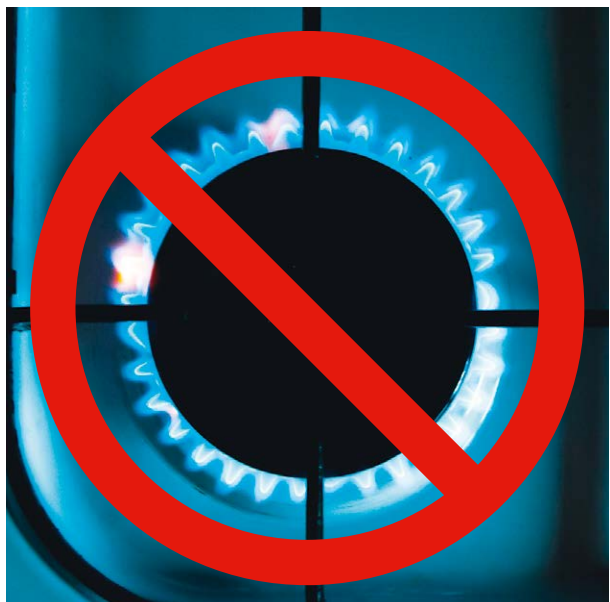
Heating a Victorian home with gas costs an average of \$2.47 per day, but with a solar and battery backed heat pump, the cost halves to \$1.13 says Dr Saul Griffith, co-founder and chief scientist of Rewiring Australia, and "the Victorian gas ban is the first step to ensuring all Victorians get access to the financial benefits of electrification".

The Grattan Institute calculates Victoria needs to take 200 homes off gas every day until 2045 to achieve net zero, and likewise promotes the need for all Australian homes to become all-electric: unless Australia gets off natural gas it will fail to meet its 2050 net-zero emissions target.

Not-for-profit organisation Renew estimates the cost of replacing gas appliances used for home heating, hot water and cooking with smart electrified alternatives starts at \$7,000 and the largest component of

consumption of gas is in space heating (37%), followed by hot water (24%) and cooking (6%).

Are some of the get-off-gas messages finally cutting through? The Commonwealth Bank has confirmed no new gas project lending by 2025; no finance to corporations who refuse to transition from fossil fuels; and no finance for some key gas infrastructure.



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Q&A

with

TERRI BUTLER

Newly elected
President
of the Smart
Energy Council

Terri Butler has taken the reins from Steve Blume and is the new President of the Smart Energy Council. Before joining the SEC Board, Terri had been an MP in the federal parliament for three terms, and was a shadow minister in the then Shorten and Albanese Oppositions, most recently serving as Shadow Minister for Environment and Water. A former law firm partner and long-term community activist, Terri has spent her post-parliamentary life working with individuals and organisations that seek to improve the future for all, with a strong focus on climate action.

"The Smart Energy Council is one of the most effective and influential organisations on the national political scene... [SEC] knows how to be persuasive and is not afraid to speak out and be critical where necessary."



Smart Energy magazine: During the Smart Energy Conference and Expo in early May you were seen 'here, there and everywhere'. What were your impressions?

Terri: The Smart Energy Conference and Exhibition is a landmark event on the annual calendar in climate and energy circles. It's such an important platform from which advocates, politicians and industry can make the case for greater climate action and faster uptake of smart energy. It was a joy to attend and to talk to so many people about their vision for the future and about the need for action now. I particularly enjoyed facilitating a panel at the conference featuring Matt Thistlethwaite, Penny Sharpe, Adam Bandt, Wyatt Roy and Saul Griffiths. The political involvement on that panel and throughout the agenda shows how influential and highly-valued the conference is among decision-makers.

Smart Energy: How vital is the role of individual SEC members, and SEC as a collective in the transition to a carbon free economy?

Terri: I was highly familiar with the Smart Energy Council as a politician because the SEC is one of the most effective and influential organisations on the national political scene, under the leadership of CEO John Grimes, Advocacy Leader Wayne Smith, and former president Steve Blume.

The SEC knows how to be persuasive and is not afraid to speak out and be critical where necessary. It was the strength and consistency of the SEC's political work that attracted me to the idea of joining the Board. John and Wayne worked incredibly hard to advocate consistently for greater uptake of renewables and for policy commitments that supported action on climate.

Smart Energy: What are the main 'threats' to our renewables agenda? Where do the greatest opportunities lie?

Terri: There has been a step change in action since the recent federal election. We can't take that for granted though, there's always another election around the corner and the risk of climate action going backwards if the government changes back to the former regime, albeit with a different leader. I don't want to see complacency – as a nation, we can't afford to backslide.

Smart Energy: As we pose these questions a severe heatwave is gripping parts of the world causing significant wildfires and suffering to humans and wildlife. Elsewhere, widespread flooding. Yet fossil fuel diehards continue to condemn Net Zero and mock "zealot climate activists".

Terri: Every time there is an extreme event – including, recently, our own 2020 fires, the 2022 flood in Queensland being two examples close to my heart – the world is again reminded of the urgency of climate action. People are taking notice. The deniers and sceptics are on the margins. We can't let their disproportionate media coverage or amplified social media presence allow us to think otherwise. A sense of urgency on climate action is mainstream. Denying is not.

Smart Energy: After serving as a federal MP for three terms (under opposition government) what do you regard as the best and worst aspects of being a parliamentarian? Any regrets about leaving law?

Terri: Being the Shadow Minister for the Environment and Water was a great honour. It



gave me the opportunity to make the case for and achieve a strong suite of commitments [see box below for details] to be delivered by a first term Labor government. Very few Australians get to make such a direct contribution to establishing a first term environment and water agenda for a newly elected Labor government. I'm proud of the work that I got to do.

Probably the aspect I found most frustrating was people who wanted to downplay complex problems such as the politics of water in the Murray Darling Basin, or the optimal operation of environment laws within a federation as these tend to inflame passions and involve competing interests. Yet people often find it hard to put themselves in others' shoes. It's easier to be cynical than it is to have empathy, but empathy tends to yield better solutions.

My legacy as a politician was as part of a collective effort to get rid of the Morrison government. My main priority as an MP and shadow cabinet minister was to ensure the nation elected more Labor MPs than Liberal/National MPs at each election. At the 2022 election, that happened. My main legacy is contributing to the first term agenda that helped secure that election, both through the work I did in my own portfolio, and my work as part of the shadow cabinet and caucus.

From a more individual perspective, one of the things I'm most proud of is the integral role that I had in relation to marriage equality. It was a massive and successful campaign with strong and active engagement of our leadership team in both the House and the Senate and I'm proud of my part in it. I don't have any regrets on leaving the law. I loved my firm, Maurice Blackburn, and I was proud of having established and led its Queensland Employment and Industrial Law Section. But as rewarding as it was to work in the law it was an honour to leave the firm in order to join the federal parliament to work on behalf of my constituents and all Australians.

Smart Energy: A few years back you were quoted as saying "People view politicians and politics with suspicion, if not downright hostility." Really?

Terri: *People do view politicians with suspicion and hostility. It's sometimes easier for people to demonise politicians than it is to come to grips with complexity and wicked problems and their impacts on decision-makers. This is part of the challenge for anyone in public life, and it's why populists can win votes.*

Smart Energy: Your book *Labor of Love* – great title and a lot of work for a (then) parliamentarian, champion of a plethora of human rights/dignity related causes, wife and busy mother of two and oboe player...

Terri: *It was a kind of self-help book to encourage women into politics, albeit with anecdotes from my own life. I saw building aspiration in women to get involved in politics as being part of the responsibility of women in public life.*

I had been an advocate for increasing women's participation in politics since the 1990s and I wasn't going to stop just because I had been elected myself. I mostly wrote it on planes and at night when I was away. Federal MPs have to travel a lot!

Smart Energy: And in a snapshot ...

Terri: *First job unlawful: cleaning a music store, underage; first job – lawful: working a checkout.*

Best advice received: fortune favours the brave.

Books that have impressed me most: Loved both 'Capital in the 21st Century' and 'Capital and Ideology' by French economist Thomas Piketty. He's evocative.

Most admired person: My mother who cared for my father through his terminal lung cancer... it took immense strength.

Favourite podcasts and commentators... Having seen him on a Smart Energy Council panel recently I'm now a fan of Dave Roberts' substack, Volts. And I loved the recent Just Another Solar Podcast interview with our excellent chief executive John Grimes.

Some of the extensive agenda Labor committed to under Terri Butler's tenure as the Shadow Environment and Water Minister

Doubling the number of indigenous rangers; increasing funding for Indigenous Protected Areas; providing significant funding for restoring rivers and catchments in urban areas; and establishing a Landcare Rangers program and bringing back the Landcare facilitator.

Also: Renewed funding for the Reef 2050 program and investing in water quality and other measures to protect the Reef – while noting that the best policies for Reef protection are policies promoting action on climate change; responding to the EPBC Act Review; establishing a federal EPA to scale up data collection and biodiversity conservation; devoting significant additional funding to saving native species (the former government had completely gutted the environment department and had done little on recovery plans or key threatening processes); commitment of 30% protected land and sea by 2030 in support of biodiversity; commitment to delivering funding for Kakadu national park. Also renewed the infrastructure for the Murray Darling Basin Plan and left open the issue of buybacks; committed to re-establishing the National Water Commission (probably one of the most important initiatives and one of the least known), and embedding circular economy principles into procurement and supporting recycling efforts of other jurisdictions.

Steve Blume's reflections on a decade as SEC President

"The moving finger writes; and, having writ, moves on..." and so am I. More than a decade ago I became an 'accidental' VP then President of the Australian Solar Energy Society, AuSES, out of ANZSES, and now the Smart Energy Council.

The giants of solar research and development, described in the ISES publication *The Century of Solar – Stories and Visions of Renewable Energy*, had created an industry when we employed in 2008 our first full-time staffer, our CEO John Grimes. I was elected President in 2010 and joined the 'solarcoaster' of renewables policy.

"It was the best of times..." an optimistic start with support from my then boss and ACT Minister for Energy, Climate Change and Water, Simon Corbell encouraging, cajoling and enabling the ACT to take the lead in decarbonisation with solar PV, wind and other solutions.

"It was the worst of times..." the Abbott government tried to kill off ARENA, the CEFC, the CER, nobbled the Clean Energy Authority and successfully abolished the Climate Council, but committed people resurrected it. We stopped the worst!

The 'climate wars' were unrelenting, but we had succour and support from so many and in the states and territories we won. Globally too the march was on – aided by Australia's formidable research community who stayed at the leading edge, and our Members who kept the fire in our bellies.



We helped the national change in 2022 and are now pushing for increased ambition. Throughout all, John Grimes has remained stalwart, as has Wayne Smith. Our staff are just incredible, so too our Boards who give us the freedom to advocate with strength and resilience.

We have a superb new President, Terri Butler, supported by Vice President, Sam Craft – Directors in our majority female Board of which I am so proud. I've been privileged to lead the Smart Energy Council and see it reach a new level and pleased that I'll continue to contribute as Secretary and general dogsbody.

As John F. Kennedy said "Change is the law of life. And those who look only to the past or present are certain to miss the future."



Some of the many tributes that flowed in for outgoing President Steve Blume

"Steve has been critical to making the SEC of today, there would be no Smart Energy Council without Steve Blume. He has been the heart and soul of the organisation, serving as President for 12 years, and I am so pleased he has agreed to continue as Secretary and as an honorary adviser to the organisation."

John Grimes

"Steve's contribution is immense and immeasurable. We are fortunate to have had the benefit of his stewardship. Thank you, Steve."

Terri Butler

"Your unwavering can-do attitude, positive energy and (terrifying) intellect has inspired me personally. The Smart Energy Council is the powerhouse it is today in no small way thanks to your leadership as President. Thank you for the example you have set."

Barbara Elliston

"Huge wins over the years Steve, and you're a big part of the reason why. Thanks for all your hard work... [and] I can't wait to see what Terri Butler can do. I'm proud to be a member of an organisation with a 66% women board. Be the change we want to see."

George Tulloch

"Steve, you'll absolutely be missed. You're one of the few people I've found in this industry with a genuine, no-nonsense approach and a trail of successes to support it."

Aaron Jenkins

"You are a legend in Australia's solar industry and I would like to thank you for the many great conversations we had over the years. You were always approachable and kind and I loved your determination and energy."

Patrick Matweew

The Smart Energy Council welcomes Sam Craft as Vice-President and new Board member Stephanie Bashir

Sam Craft is the Australian Ambassador for Equality in Energy Transitions and a powerful advocate for increased women's participation in the smart energy workforce. She is a Founding Member of Australian Women in Solar Energy (AWISE). In 2022, Sam Craft received a Global Woman of Distinction Award by the Clean Energy Ministerial (the world's Energy Ministers).



Stephanie Bashir is the CEO and Principal of Nexa Advisory, an advisory firm helping public and private clients navigate the energy transition through trusted, value-added and future proofed advice and solutions.

Stephanie uses her energy expertise and powerful voice in the industry to accelerate the clean energy transition. Nexa Advisory has published several critical papers adding thought leadership into the debate on the important role of transmission build out and the pace of the energy transition in Australia.

She previously led the policy vision and strategy at AGL focusing on the reform of network regulation in new energy technologies and services. Stephanie had key roles in driving the clean energy transformation and establishing the national policy agenda around virtual power plants, and competition reforms in new energy technologies and services.

Stephanie brings her contemporary thought leadership and an extensive network of influencers and leaders across various sectors to further the role and voice of the Smart Energy Council and its members in a whole-of-economy transition towards a Net Zero future where clean energy is foundational.

Completing the Board are **Andrew Dickson, Barbara Elliston, Simon Holmes à Court, Taryn Lane, Ria O'Hehir and Oliver Yates.**



Meet two new team members at the Smart Energy Council

Lisa Francis, Senior Manager – Industry Relations

Lisa is a senior Corporate Affairs professional with over twenty years international experience in government, industry organisations and leading ASX100, New York Stock Exchange and FTSE 100 multi-national organisations, both in the UK and Australia. Lisa's expertise is in complex, regulated industries including renewable energy, banking, financial services, superannuation and telecommunications.



Lisa has previously worked for a global renewable energy company with responsibility for leading the organisation's Federal and State government relations, public policy, stakeholder management and media relations program across Australia.

Lisa enjoys contributing to the growth and development of the smart energy industry, by engaging and building stakeholder relations with companies that form a crucial part of the industry's supply chain.

In her free time, Lisa enjoys keeping active, playing competition waterpolo and open water swimming in the cold water in Victoria!

Zoe Grimes, Event Manager

Zoe Grimes came to the Smart Energy Council in June 2023. She holds a bachelor's degree in Event and Tourism management from the University of Canberra. Zoe is a rising star in event management, possessing ambition, expertise and passion.

Zoe possesses a wealth of knowledge and experience working in a fast-paced, dynamic environment across the large-scale commercial retail and hotel event sectors. In her previous roles, she has honed her problem-solving, customer service and communication skills.

Zoe's commitment to excellence extends beyond her professional achievements to her role as an LGBTQIA+ Diversity and Inclusion Ambassador, aiming to create safe and diverse events and spaces.



PUTTING ENERGY INTO ACTION



The **SMART ENERGY COUNCIL** is the peak body of the smart energy sector in Australia. We are a not-for-profit, membership-based organisation with around 1,000 members nationwide, consisting of companies and individuals operating in this rapidly expanding industry.

We are passionate and independent. Our deep understanding of and connections with our members and industry ensures that we deliver results for the smart energy industry and the community.

“The Smart Energy Council has the key people, experience, demonstrated effectiveness, and industry and government network and relationships, to rate as one of the top industry bodies in Australia and globally.”

– John Hewson, Former Liberal Party leader, financial and economic expert

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We also represent smart energy customers and consumers and provide expert advice to governments and the public.

As the national voice for smart energy, the Council is committed to high-quality, long-term smart energy solutions for all Australians.



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GOOD REEF – A CORAL ARK IN THE FORM OF A BIOBANK



THE GREAT BARRIER REEF is a remarkable piece of work. Created by billions of minuscule coral polyps over millions of years it's the world's largest coral reef system: 2,900 individual reefs and 900 islands stretching for over 2,300 kilometres over an area of 344,400 square kilometres. It's the world's biggest single structure, so magnificent it is visible from space.

The reef is a state icon of Queensland, UNESCO World Heritage Site, and has been labelled by CNN as one of the Seven Natural Wonders of the World.

Despite the reef's extraordinary size and imposing age, it is now under serious threat.

And that is pretty evident to anyone who has snorkelled the reef over successive decades. You cannot help but be alarmed by the change from glorious technicoloured coral to an otherworldly, unwelcoming stark white. Marine heatwaves delivering water that's 3°C warmer than average in central parts of the reef along with pollutants are the culprits of the six mass bleachings over the past few years.

The Great Barrier Reef Marine Park Authority's *The Reef snapshot: summer 2021-22* noted above-average water temperatures in late summer had caused coral bleaching throughout 91% of the lengthy reef.

A cheerless 2020 study revealed half the reef's coral cover was lost between 1995 and 2017.

All that hard work by the coral polyps over millions of years destroyed due to mankind's weighty environmental footprint. What can we do to make amends?

Stepping in to help out

Enter The Forever Reef Project to preserve the reef through the world's First Living Coral Biobank.

The backup facility at the Cairns Aquarium has been labelled a 'coral ark' for reef research and conservation efforts to preserve coral biodiversity threatened by mass bleaching events. Open to tourists, it will educate visitors about climate change, the existential threat facing the reef and the importance of preserving coral species.

Speaking at the facility's opening in mid-June, Dr Dean Miller, Managing Director of Great Barrier Reef Legacy explained The Forever Reef Project will be capable of hosting 12,000 live coral fragments in the state-of-the-art facility; the tissues samples and genetic material will aid in reef research and restoration efforts worldwide.

The Forever Reef Project which currently houses 400 species of Great Barrier Reef coral aims to collect all 800 species of coral found in the world, becoming the most precious collection on Earth.

"With over 50% of corals gone in the last few decades, the most vulnerable corals and coral reefs are in danger, and we don't have a moment to lose to protect and preserve this precious collection," Miller said.

'Godfather of Coral' and former Chief Scientist of the Australian Institute of Marine Science Dr Charlie Veron added coral reefs support almost 50% of all marine life and provide essential goods and services to an estimated one billion people, and "Without question this is the most important project we can be undertaking for corals and coral reefs".

Solar angels

The Smart Energy Council is proud to report that three prominent members – **Risen Energy, GoodWe and One Stop Warehouse** – are playing a critical role in The Forever Reef Project.

The generous trio joined forces to donate a 22.5kW PV system together with a 15kW battery storage system to the World's First Living Coral Biobank.

The donated system comprises Risen's high-performance 415W Titan S solar panels, GoodWe's ET 3-phase high voltage inverter, and Lynx F Series high voltage battery, made possible through the facilitation and installation expertise of OSW and Solenergy.

The components work together seamlessly to provide the Biobank with efficient energy independence, enhanced self-consumption and comprehensive storage options. The system achieves carbon positivity by generating more energy than the facility consumes, and the significance of the synergy is not lost on Dean Miller

Last year's Climate Council report *In hot water: Climate change, marine heatwaves and coral bleaching* concluded Australia's reefs and marine ecosystems are at grave risk of mass bleachings and extinction.

The update was explicit: excess heat absorbed by the ocean in 2021 equalled the energy of seven Hiroshima atomic bombs detonating every second; surface waters off southeastern Australia are warming nearly four times the global average; the Reef could face bleaching every year by 2044, effectively facing extinction along with other shallow reefs worldwide.



"The support of Risen, GoodWe, OSW and Solenergy is invaluable in enabling us to run this facility effectively and sustainably while minimising our impact on climate change which is the major cause of coral bleaching events," he said.

Lorraine Khng of Risen Energy Australia told *Smart Energy* she was "Honoured to contribute our high-performance solar panels towards the conservation efforts to preserve the corals of the Great Barrier Reef" adding "With an impressive 21.6% panel efficiency, they enable the Biobank to be carbon neutral."

Dean Williamson explained the advanced nature of GoodWe's energy storage solutions saying "The ET Series three-phase inverter and Lynx F Series Battery will increase energy independence and provide the ability to increase storage options for the Biobank in the future as they continue their amazing work."

For his part, OSW Head of Procurement, Product, and Marketing Andy Cheng said "At OSW, we are dedicated to providing sustainable energy solutions and driving positive changes. We are excited to be a part of The Forever Reef Project, where we can join forces with other industry leaders to contribute our expertise to protect the precious coral reefs and combat climate change. By working together, we can make a meaningful impact on the planet and create a brighter future for all."

The SEC congratulates Risen Energy, OSW and GoodWe for their valiant contributions in preserving valuable coral species and with it, life on Earth – or underwater in this case.

To find out more about the project or to support the legacy of the reef, visit www.foreverreef.org, www.goodwe.com.au, www.risenenergy.com.au, www.osw.energy/au



Dean Miller (second from the left), Managing Director of the GBR Legacy and Project Leader of the Living Coral Biobank, joined by John Wright from GoodWe, Lorraine Khng from Risen and Linh Pham of OSW, celebrating the completion of the solar system installation

BRIGHTHE – UP AGAINST BARBIEHEIMER!

In July movie goers were spoilt for choice with big ticket shows Barbie, Oppenheimer and Mission Impossible drawing big crowds.

The timing coincided with a private screening of Brighte's Founders Film in Sydney CBD, not quite on the scale of Barbie, but just as much fun with celebratory bubbles served to wash down the canapes awaiting viewers.

Founders Film is a new docu-series delving into the lives of some of Australia's most successful start-up founders including Mel from Canva, Luke from SafetyCulture and Fred from Finder Canva and well-known Brighte founder and CEO Katherine McConnell.

In the film Katherine describes how she is on a mission "to make every home sustainable" by offering customers payment plans for the installation of solar and battery home improvements.

It's an uplifting tale. McConnell, who ground her teeth for 16 years on banking and investment, spoke about the stress of taking on \$100 million in 2015 when founding Brighte. Massive success followed, spurring enormous interest in and access to home solar and storage solutions. By 2021 Brighte was recognised as the 4th fastest growing company in the Asia Pacific, with a growth rate of 8881% over the previous three years.

Brighte has to date financed 100,000 solar installations and prevented 1,000,000 metric tonnes of carbon dioxide emissions annually. Between them customers generate 1.650GWh of renewable energy each year.

The Founders Film series is available to stream on Amazon Video, Apple TV and Google Play.

www.brighte.com.au



Prominent energy storage developer **GMR ENERGY** has appointed Oliver Yates (pictured) as Chair. The former high-profile chief of the Clean Energy Financial Corporation will be overseeing GMR Energy's six big batteries projects in New South Wales, Victoria and South Australia while identifying opportunities for large scale battery solutions elsewhere.

Oliver said "There could not be a more timely moment to invest in large scale batteries amid the rollout of substantive government policy support to ... facilitate the growing penetration of renewable energy generation."

Smart Energy Council welcomes GMR Energy to the fold as a top tier Titanium member.



ITS TIME POWERS AHEAD IN THE PACIFIC

Rob Edwards of Its Time Foundation is understandably thrilled to report on the installation of eight new solar systems at schools in Fiji in just a few short months.

Importantly, several diesel-powered generators have been replaced with 53kW of Jinko solar and 177 kilowatt hours of batteries in the schools serving 890 students.

Developments include the wiring of six boarding hostels and 41 teachers' homes.

Older technology lead acid battery systems have been replaced with lithium batteries in six of the earlier installations courtesy of SimpliPhi, and Clenergy kindly provided its series of energy mounting systems for maximum cyclone rating as typically used in tropical zones.

"Yes a lot of preparation has gone into this, but not bad considering it took us 10 years to do 23 projects!" Rob chimed.

Installation and maintenance is carried out by professional Fijian firms, and the recipient communities are informed about the use and monitoring of systems as well as reporting. Happily, savings from the cost of diesel fuel are diverted to educational resources.

"We are building a sustainable legacy for Fijians one school at a time," said Rob Edwards, thanking all supporters including Solar Cutters which is very generously donating a portion of all memberships to Its Time.

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PLENTI OF GOOD NEWS

Launched by finance provider Plenti in March this year, GreenConnect is the all-in-one renewable energy solution that combines discounted solar and battery systems, energy plans, Virtual Power Plants (VPPs), battery optimisation technology and affordable finance at point-of-sale.

It's a neat proposition wrapped up in a comprehensive and compelling package that is successfully driving the uptake of more affordable solar and battery systems and advancing the case for VPPs. There are now 120 accredited installers involved in GreenConnect and the number continues to rise.

Simplicity is key to the success of GreenConnect accelerating sales of solar systems with batteries and the emerging VPP market, says Louis Edwards who is Head of Renewable Energy Finance at Plenti.

"The simplicity of the GreenConnect application process means that for the first time, installers can offer an all-in-one energy solution to their consumers without having to use multiple application processes... it's been a game-changer, completing one application gets their customer two results: finance approval and VPP approval.

"The holy grail for us is to make renewable energy as simple as buying a mobile phone."

In the five months since launching, GreenConnect has received over 100 applications, representing 1MWh of orchestrated battery capacity in less than 100 business days since launching the platform.

It's a milestone Louis anticipates becoming the monthly run rate in the coming months during which time Plenti will be adding new partner offers to GreenConnect and broadening the range of attractive VPP offers.

"Several new energy retailing and VPP offers will be joining GreenConnect in the coming months, expanding the range of battery brands supported as well as geographical areas not currently serviced by Plenti's existing partners," Louis explained.

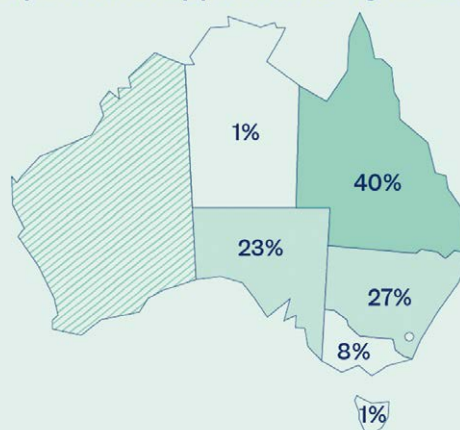
"GreenConnect is also expanding into electrification assets, allowing installers to bundle together energy efficiency assets such as heat pumps, EV chargers and air-conditioning systems to solar and battery sales.

"We believe the installer network to be best placed to take on the residential electrification challenge and as such, we want to equip installers with access to the best offers in the Australian market and be able to present these 'bundled' solutions to their customers.

"The holy grail for us is to make renewable energy as simple as buying a mobile phone."



Proportion of applications* by location†



GreenConnect provides energy retailers and VPP providers live and dynamic feedback from the installer and consumer market to their 'offers'. If an energy retailer isn't receiving as much flow towards their VPP offers as they would like, GreenConnect allows them to update their offer to create more appeal to installers and consumers.

"Allowing existing energy retailers and VPP providers to amend or create additional offers to respond to installer and customer feedback is a major advantage for energy retailers and VPP providers."

GreenConnect has contributed to the 11,357 renewable energy systems funded by Plenti during y/e 2023, of which 12% included batteries. Go Plenti!

www.plenti.com.au

S-5! maker of innovative solar attachment solutions for metal roofs, has launched a new online educational training program, S-5-University, to educate industry professionals on all things metal roofing.

Participants can login to S-5-University via the company website, select a variety of courses, take brief quizzes at the end of each unit, and earn certificates upon completion.

"Our goal is to provide our customers and the greater solar industry with all the necessary information and tools – a one-stop-shop to understand all the 'whys' gaining insight to make their jobs easier," said Jessica Haddock, S-5! Marketing Manager.

www.S-5.com





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PRODUCTS AND SERVICES

RECLAIM ENERGY is at the forefront in development of innovative, environmentally friendly hot water systems. The next generation CO₂ Heat Pump design is described as offering ultimate and seamless flexibility to cater for busy lifestyles. It is fully interactive, enabling homeowners to determine their energy draw and in the process reduce up to 80% of hot water energy costs.

Combining the system with PV enhances the reduction in energy consumption and costs, consuming excess PV during peak sun hours to maximise savings and take advantage of the energy already created rather than exporting it back to the grid.

"Reclaims' Heat Pump plays an integral part on the electrification journey, providing households with a smart, highly efficient, flexible hot water solution, that significantly reduces a households' reliance on the grid," said Brand Manager Rosealind West.

The system uses a natural CO₂ refrigerant, thereby reducing carbon emissions, and boasts excellent cold weather performance characteristics, with no reliance on any artificial boosting to deliver hot water. The system has been designed to support load shifting which can reduce the pressure on the grid, while also facilitating a better return on investment for additional renewable energy solutions such as battery storage.

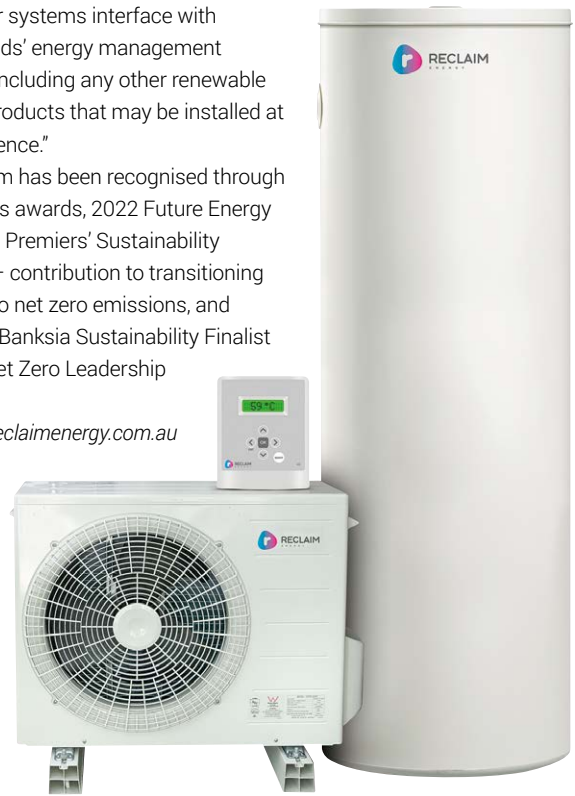
It will offer the ability to start manipulating the network, support a platform that can be used with advanced technologies to manage your household energy mix over time, reducing costs and carbon footprint.

"Reclaim Energy realised the greatest impact we can have on achieving net zero emissions is by making it easier for others," Rosealind said.

"The core focus of our business is to drive innovation in terms of hot water design, to enhance the way hot water systems interface with households' energy management profiles, including any other renewable energy products that may be installed at the residence."

Reclaim has been recognised through numerous awards, 2022 Future Energy Winner – Premiers' Sustainability Awards – contribution to transitioning Victoria to net zero emissions, and National Banksia Sustainability Finalist for the Net Zero Leadership Award.

www.reclaimenergy.com.au



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GOODWE AUSTRALIA has launched an 'EcoSmart Kids' roadshow education program, promoting positive messages about climate change and renewable energy.

EcoSmart Kids features interactive animated workshops written and created by GoodWe Australia, approved by education professionals and targeting primary school children.

The EcoSmart Kids roadshow events are being delivered across Victoria to inform and inspire children about climate change, renewable energy and positive environmental messages.

Content features the low-down on climate change, ways of helping the environment, and the work of solar energy and other renewable energy sources.

The interactive program is delivered straight from GoodWe's smart tailor-made roadshow truck.

Participating children were invited to participate in a competition to create something that promotes a positive environmental message using their chosen medium whether it be art, creative writing or music.



The GoodWe Australia team, equipped with Working With Children permits, will be visiting schools across Victoria to deliver the EcoSmart Kids program inside the GoodWe's smart custom-made roadshow truck launched in 2022.



Winners and prizes have been awarded to each school, with the 1st placed winner from each school moving on to the 'championship' awards event held at the Melbourne Home Show in late August.

Dean Williamson, GoodWe Country Manager commented: "We take pride in thinking outside the box and trying to be a pioneer in the renewables industry. Following the launch of our Smart Innovation Vehicle in 2022, we have been able to complete dozens of industry and Home Show consumer events across Australia in a very short space of time.

"We saw a unique opportunity with the roadshow vehicle to use it to reach a new audience in a fun and informative way," he said, thanking the team at Exhibitions and Events Australia who run the Home Show events around Australia.

"Through our EcoSmart Kids program visits, we were amazed by the knowledge and insight the children had, and their energy and enthusiasm certainly has us excited! The hope is that long term, we can deliver EcoSmart Kids across Australia and even tailored to other regions around the world for GoodWe teams overseas."

www.ecosmartkids.com.au

IN RELATED NEWS GoodWe Australia has expanded its local Sales, Marketing, Technical Support team and established a dedicated product division focusing on GoodWe's Building-Integrated Photovoltaics (BIPV) products.

The expanded team will better support the industry and its new product divisions and strengthen the company's market presence, building on its 50% year-on-year growth.

Innovation is at the forefront: GoodWe recently introduced a solar tile product called the Sunshine Series, with a focus on its 84W power output, to the Australian market.

This solar tile is touted as offering an optimal solution for homeowners looking to incorporate solar energy into their homes for an aesthetically pleasing rooftop; and "seamlessly integrates with the building's architecture, generating electricity while maintaining aesthetic appeal".

Unlike traditional tiles, the products eliminate the need for drilling holes, mitigating the risk of water leakage and enhancing overall safety.

GoodWe has partnered with renowned installer UV Power to demonstrate the successful installation of the Sunshine Series.



Note: On Day 3 of the Smart Energy Council Delegation to China – Tuesday 31 October – GoodWe is hosting a visit to its factory in Suzhou.

www.goodwe.com.au

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* Based on claiming the STC's, Victorian energy efficiency certificates (VEECs) and Solar Vic Hot Water rebate. Eligibility criteria applies, all rebates are paid subject to the terms and conditions of the agency managing those programmes.
** Australian Made Technology. * Warranty Controller 5 years, Compressor 6 years & Tanks up to 15 years.

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PRODUCTS AND SERVICES

ATTESTING TO ATESS PRODUCTS AND SERVICES

Founded in 2017, Shenzhen ATESS Power Technology is a global supplier of solar energy storage and EV charging solutions. With its sophisticated and automated manufacturing plant and international service network with offices and warehouses on five continents to ensure fast shipping and after-sale service, Shenzhen-based ATESS has helped hundreds of thousands of users and companies produce and consume green energy independently according to their individual needs, and in the process saved millions of tonnes of CO₂ emissions.

Solutions include all-in-one hybrid inverters, battery inverters and lithium battery solutions. Inverters range from 5kW up to 1MW, covering both residential, commercial and utility application scenarios. The EV charger portfolio is composed of 7kW to 360kW AC and DC electric vehicle chargers for home and public charging stations, compatible with all



mainstream EVs in the market, so far as to e-buses and e-ferries.

ATESS products can now be found in over 85 countries. "Our strongest markets are in Africa and we are the leader in South Africa. The second market we focus on is Europe, followed by Southeast Asia," Brand Marketing Specialist Kevin Ma told *Smart Energy*.

"We always pay attention to the Australian market and have business and offices in

Australia that provide highly integrated industry-compliant energy storage and EV charging solutions."

EVs in China and Australia

ATESS is also very much focused on the Australian market and has opened offices to facilitate marketing and distribution of its integrated energy storage and EV charging solutions that are IEC/SAA compliant. To date

Jamaica's Caymanas Park off-grid solar plant: The 1.7MW, 5MWh off-grid power plant which features an ATESS containerised energy storage system is predicted to save Caymanas Park over \$100m annually in electricity bills and provide the company opportunities for other development plans. The system was constructed by a Jamaican company.

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108 cell
N-Type Module

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Module Power

1722x1134x30mm
Module Size

22.5%
Maximum Efficiency

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Module Weight



RISENENERGY.COM.AU



How solar energy storage systems change people's lives: an ATESS HPS + lithium battery system has brought an end to the darkness for five underdeveloped villages in Om Goi, Chiang Mai, Thailand, where there was previously no electricity and residents had to build fires for cooking and lighting. In all, five sets of ATESS HPS30/50 all-in-one hybrid inverters and 200kWh battery were installed to power each village, with a total capacity of 1MWh. Problems of domestic and agricultural irrigation water were solved by powering water pumps; children can study at night and enjoy the fun of multimedia teaching.

70 sets of 40kW ATESS DC EV chargers have been installed around Sydney and another 10 sets of 40kW ATESS DC EV chargers and 10 sets of 20 ATESS kW DC EV chargers have been shipped and will be installed in Melbourne. All the ATESS DC EV chargers have gained IEC and SAA certifications.

"From our perspective Australia's new energy vehicle market is still in its infancy. But Australia has introduced many policies

and measures and committed to improving charging infrastructure.

"Environmentally conscious Australians are choosing to buy electric vehicles as awareness grows, and we believe energy vehicles will have a booming future in Australia."

He finished by stating "ATESS continually strives to create and innovate on the universal carbon neutralisation goal and deliver a greener future with energy that is

energised by renewables technology. "To achieve this around 15% of revenue is put into R&D each year, with a team of more than 100 experienced engineers dedicated to improvements. The laboratory is fully equipped with testing instruments, and while product performance and quality are ensured, different customised needs of clients can be fulfilled."

For more information visit <https://atesspower.com>

Brisbane-based zinc-bromine flow battery maker **REDFLOW** is a top Aussie success story, having secured an \$18 million deal with the California Energy Commission to build one of the world's largest zinc-based battery and storage projects.

Redflow will supply 2,000 ZBM3 batteries in its 200kWh modular energy pods, for delivery in 2023 and 2024.

The 20MWh system which represents Redflow's largest single sale and deployment of batteries globally to date will provide power for the Paskenta Band of Nomlaki Indians who reside in a federally recognised sovereign nation located in Northern California and carry a deep tradition of resiliency and culture. The sustainable solution is a perfect fit.

The significant project is touted as a key step to help address an estimated 45-55GW of long-duration energy storage required in California by 2045 to support grid reliability and the state's clean energy transition targets.

Redflow Chief Executive Officer and Managing Director Tim Harris said "This 20MWh project is one of several large-scale opportunities in our pipeline, and represents the next phase of our growth strategy, validating our focus on large-scale systems in the US and Australia."

The project will further build on Redflow's portfolio of 250 active deployments and over 3GWh of energy delivered, and follows hot on the heels of the 2MWh system in California

installed by Redflow for Anaergia in 2022.

"The market for long-duration energy storage is accelerating. This approval firmly establishes our presence in California, which is leading the development and support of non-lithium technologies to achieve its net-zero goals," Tim said. "It's a great example of US-Australian collaboration in renewable energy and supports the aims of the recent Climate, Critical Minerals and Clean Energy Transformation Compact, which cites clean energy as the third pillar of the alliance."

"It's nice to see the growing public and industry recognition that the future of the energy storage landscape will require multiple solutions, combining power and energy orientated technologies. Exciting times ahead," Tim Harris said.

In other developments, Redflow has been selected for a 4MWh Energy Queensland battery project, with the preferred site identified at Ipswich. The battery represents the next stage of the partnership between Redflow and Energy Queensland and forms part of a \$12 million network battery project.

The 4MWh project is expected to be delivered in the second quarter of 2024 and is estimated to be worth approximately \$3.5m revenue for Redflow.

Tim Harris maintains that Redflow batteries are a pillar in Queensland's energy transition, citing the Queensland Government's Battery Industry Opportunities discussion paper which



Graphic impression of the solar and storage microgrid that will enable the Paskenta Tribe to power operations of the Paskenta Rancheria. The project is part of the Tribe's efforts to achieve greater energy sovereignty through control over their own energy resources, reduce fossil fuel consumption and assert responsible land stewardship

highlights the state's energy storage demand could potentially reach 14GWh by 2030.

"Our technology is proudly developed in Queensland, where we have invested for over 15 years in delivering our world-leading zinc-bromine flow battery solution. Significant amounts of stationary energy storage will be required to meet the Queensland Government's strategic plan and deliver the Queensland Energy and Jobs plan, which targets 70% renewable energy penetration by 2032," he said. "The momentum towards a decarbonised grid and the energy storage market continue to rapidly accelerate."

www.redflow.com.au

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Alistair and Marianne are committed to helping companies increase their exposure through the magazine as well as at Smart Energy webinars and conferences.

Despite the challenges of the past two years, Australia's renewable industry sector continues to thrive so it has never been a better time to showcase your products and services to the widest possible targeted audience.

MAGAZINE REACH: *Smart Energy* magazine is read by more than 20,000 industry professionals, spanning solar PV designers and installers, large-scale solar project contractors, industry consultants and trainers, manufacturers, suppliers and wholesalers, energy retailers, and thought-leaders.

So, if you want to reach thousands of people involved in all sectors of the smart energy industry, call Alistair or Marianne.



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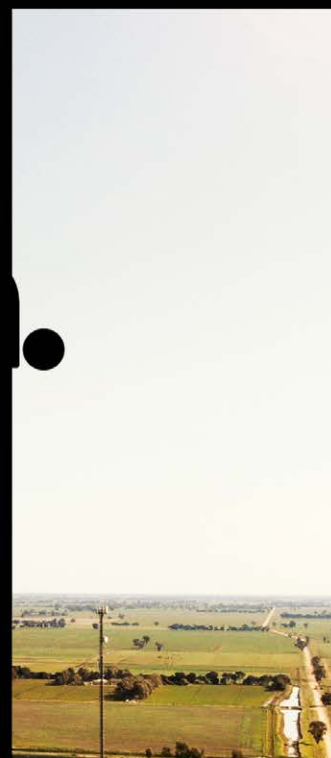
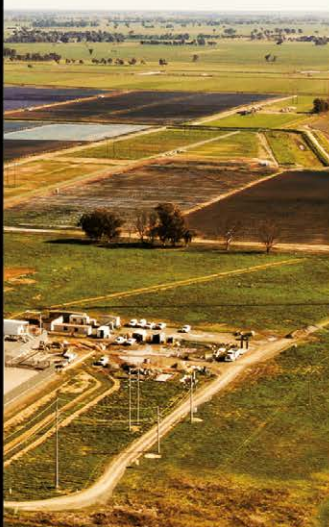


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Participating manufacturers are fully recognised, consumers enjoy peace of mind and the industry's reputation is strengthened, delivering **Positive Quality™** for all. Australian consumers and businesses can have confidence in the quality of the solar panels they are installing by looking out for the **Positive Quality™** logo.

The Smart Energy Council developed the program because the generic appearance of panels makes it difficult to determine good from bad, unless an identification mark denotes otherwise.

The **Positive Quality™** program admits and endorses manufacturers that are independently tested and verified through plant visits. The initial assessment consists of a company's entire manufacturing processes undergoing independent and intensive inspection and testing.

This is carried out by the Smart Energy Council's specially appointed **Positive Quality™** specialists in a three step process: Certification check and compliance with IEC and Australian standards; Factory inspection with a 60-point check; and a Product quality check: appearance, IV, EL, Hi-Pot, and leakage current.



Positive Quality™ participants' premises are then inspected at random every 12 weeks to ensure the continuity of those high standards. All solar PV manufacturers of high quality can participate.

****JinkoSolar was awarded the 'Top Brand PV Australia 2021' by specialised European research firm EuPD Research.****



POSITIVE QUALITY™
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By displaying the Positive Quality™ logo solar companies convey high standards in panel manufacturing to industry and consumers

JinkoSolar

Contact Positive Quality™ Manager Alistair McGrath-Kerr on 0499 345 013, email alistair@smartenergy.org.au or visit www.smartenergy.org.au

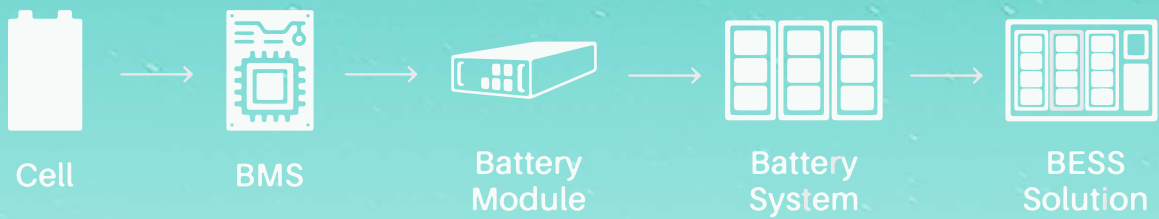
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