WWF

AUSTRALIA

RENEWABLES NATION

RENEWABLE SUPERPOWER SCORECARD #2 2021

AUSTRALIA'S RACE TO A RENEWABLE FUTURE

Acknowledgements

WWF-Australia acknowledges the Traditional Custodians of Country throughout Australia and their continuing connection to land, water and culture. We pay our respects to their Elders - past, present and emerging.

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- A wide number of climate and environment organisations who provided their knowledge and input into the process.

WWF is one of the world's largest and most experienced independent conservation organisations, with over five million supporters and a global network active in more than 100 countries.

WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.

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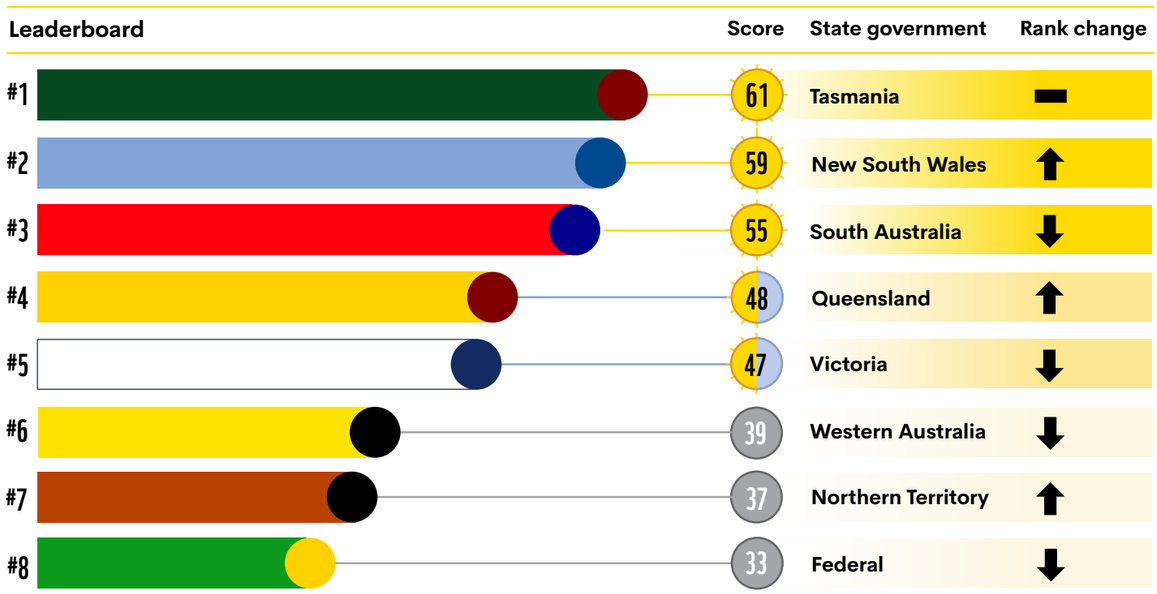
THE SCORES ARE IN

Which Government is leading the way in the renewables race?



SUMMARY

Australia has long been a resource powerhouse. Now we have the potential to become a renewable energy export powerhouse. However, for Australia to realise this potential requires leadership and urgent government action. If we fail to act, other countries will beat us to the opportunity, and our economic future will be tied to industries incompatible with a safe climate.

WWF-Australia is calling on our leaders to make Australia the world's leading exporter of renewable energy by 2030, and to put us on the pathway to 700% renewables by 2050.

The Renewable Superpower Scorecard presents a snapshot of how Australia's states, territories and the federal government are performing in the race to become a renewable superpower.

This second edition provides an update on progress over the past eight months, from March to November 2021.

This is the only evaluation of the progress of Australia's states and territories, which ranks them not just in switching Australia's domestic energy systems to renewables, but also on how quickly our governments are working to establish new renewable export industries for the nation.

INTRODUCTION

In the wake of the recent Glasgow Climate Change Conference[1], more countries are accelerating their shift to renewable energy, opening up huge opportunities for Australia to develop major new renewable export industries.

Australia can prosper by acting on climate change if we use our world-class renewable resources and critical minerals like lithium to make and sell the clean energy solutions Australia and the world needs.

We have the clean energy resources to power our entire nation, and still have plenty left over to sell to our neighbours. A massive expansion of Australia's renewable industry can power a new generation of exports, create vast new onshore manufacturing industries and hundreds of thousands of jobs.

New manufacturing jobs will be created producing renewable-powered commodities such as green steel and aluminium. We can export energy in the form of renewable hydrogen-based fuels and direct solar power via undersea cables. Australia can also export clean-energy expertise and new hardware and software solutions for the energy transition.

In October this year, the Business Council of Australia, the Australian Council of Trade Unions, WWF-Australia and the Australian Conservation Foundation released new research that confirmed just how significant this opportunity is. The SunShot Report by Accenture shows that six clean export opportunities have the potential to generate $89 billion in gross value added (GVA) and 395,000 Australian jobs by 2040[2].

To give some sense of the scale of the opportunity, this is larger than the GVA of our current fossil fuel industry and represents 83,000 more direct jobs. Each of these opportunities represents a substantial new industry, and together they would form a formidable new suite of Australian exports.

These industries would not just bring export revenue they could also produce a range of jobs, many in regional areas. Highly-skilled jobs will account for 65% of the new jobs created and more than half the positions would be in mining, manufacturing and professional services. A high proportion of these new clean export jobs could be in regions with existing high-carbon activities.

But fully realising these opportunities will require concerted effort across the public and private sectors. While governments are taking steps to support the growing renewables industry, especially through Renewable Energy Zones and support for new technology, the current level of effort will not get us close to developing these huge clean export opportunities.

1 The UN Framework Convention on Climate Change 26th Conference of the Parties held in Glasgow, Scotland in November 2021

2 Accenture (2021) SunShot: Australia's $89B clean energy export opportunity – a report commissioned by ACF, BCA, WWF and the ACTU.

ONGOING PROGRESS

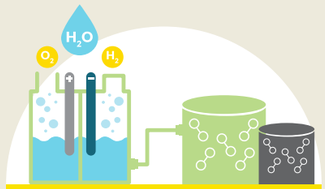
Despite the ongoing economic and social challenges of the coronavirus pandemic, Australia has continued to make progress since the first scorecard was published in March 2021. For example:

- Queensland has established a $2 billion renewable energy and hydrogen jobs fund and is supporting plans to build the world's biggest hydrogen electrolyser manufacturing plant.
- The NSW Net Zero Industry Innovation Program is driving the shift to renewables in the industry sector, backed by $750 million funding.
- South Australia is set to legislate its targets of net 100% renewables by 2030.
- Western Australia and the Northern Territory have both made important progress in adapting their electricity systems for higher levels of renewables, with WA reaching 30% renewables in its main grid.
- The race is on to develop renewable hydrogen exports, and every state and territory, plus the federal government, has adopted hydrogen industry strategies, with most focused purely on renewable hydrogen.

The Second Renewable Superpower Scorecard celebrates this progress. It also sets the agenda for the next major steps that will enable us to decarbonise the electricity sector, electrify transport and industry, and put us on the pathway to 700% renewables by 2050.

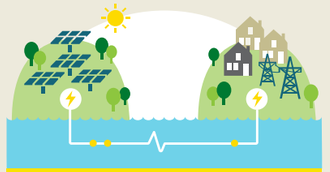
WWF-AUSTRALIA HAS IDENTIFIED 6 TYPES OF RENEWABLES THAT WE WILL BE ABLE TO EXPORT AS WE GET ON THE ROAD TO 700% RENEWABLES

6 TYPES OF RENEWABLE EXPORT



RENEWABLE HYDROGEN

using renewable electricity to electrolyse water. Renewable hydrogen can then be converted into commodities like ammonia and synthetic fuels.



DIRECT ELECTRICITY TRANSFER

via undersea cables (like the Suncable plan to export electricity to Singapore).

SOLAR POWER PRODUCTS

exporting embodied renewable energy in energy-intensive commodities such as green steel, advanced manufacturing, aluminium and more.

AUSTRALIAN EXPERTISE

in legal, financial, business and engineering, particularly in deploying & managing renewable energy systems, including education and training.

COMPONENTS AND RECYCLING

of components for clean energy technologies e.g. wind turbine blades, inverters, batteries and the minerals such as lithium and copper essential to their production.

SOFTWARE AND SERVICES

that support the operation of clean energy systems e.g. the software and smarts needed for demand management, microgrids, and grid integration of renewables.

RENEWABLES NATION

MAKING AUSTRALIA A RENEWABLE EXPORT POWERHOUSE

WWF-Australia and its community and business partners are calling for Australian governments to adopt the vision, policies and investment we need to position ourselves as a world-leading renewable energy exporter.

Australia has the potential to become a renewable energy export powerhouse. However, seizing this potential requires leadership and urgent government action. If we fail to act, other countries will beat us to the opportunity, and our economic future will be tied to industries incompatible with a safe climate.

Sonnen factory visit, Adelaide © WWF-Aus

Specifically, WWF calls on all states and territories, and the federal government to:

1. Develop bold renewable export strategies that put us on a path to 700% renewable energy;
2. Create Renewable Energy Industrial Precincts, to enable clusters of traditionally hard-to-decarbonise industries to be powered by renewables and clean heat; and
3. Deliver a fair transition: ensuring First Nations peoples, low-income households, workers and regional communities all benefit from the renewables race.

WHY 700% RENEWABLES FOR AUSTRALIA?

WWF's analysis shows that to become a real renewable superpower, Australia should look to produce seven times the amount of electricity we currently consume through renewable sources by 2050. Reaching this target would enable us to:

- meet Australia's current electricity demand;
- switch Australia's current transport, industry and building energy needs to renewables (away from gas, coal and oil); and
- produce renewable hydrogen fuels for export, send renewable power to Southeast Asia via sea cables, and manufacture new zero-carbon products like green steel and aluminium.

As a renewable energy superpower, Australia wouldn't have to choose between a healthy environment or a booming economy. We could grow our economy, create hundreds of thousands of new clean energy and manufacturing jobs, and lower our domestic carbon emissions.

GETTING TO 700% RENEWABLE ENERGY

CLEAN OUR ELECTRICITY SYSTEM

Everything we do in Australia is powered by different types of energy. The main one is electricity, but we also use gas or petrol to give us heat and light and move vehicles and machines.

ELECTRIFY TRANSPORT AND INDUSTRY

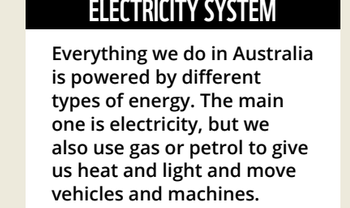
Some of our electricity already comes from renewable sources, but we need to make 100% of our electricity renewable and we need to replace those other types of energy with renewable electricity, too.

EXPORT TO THE WORLD

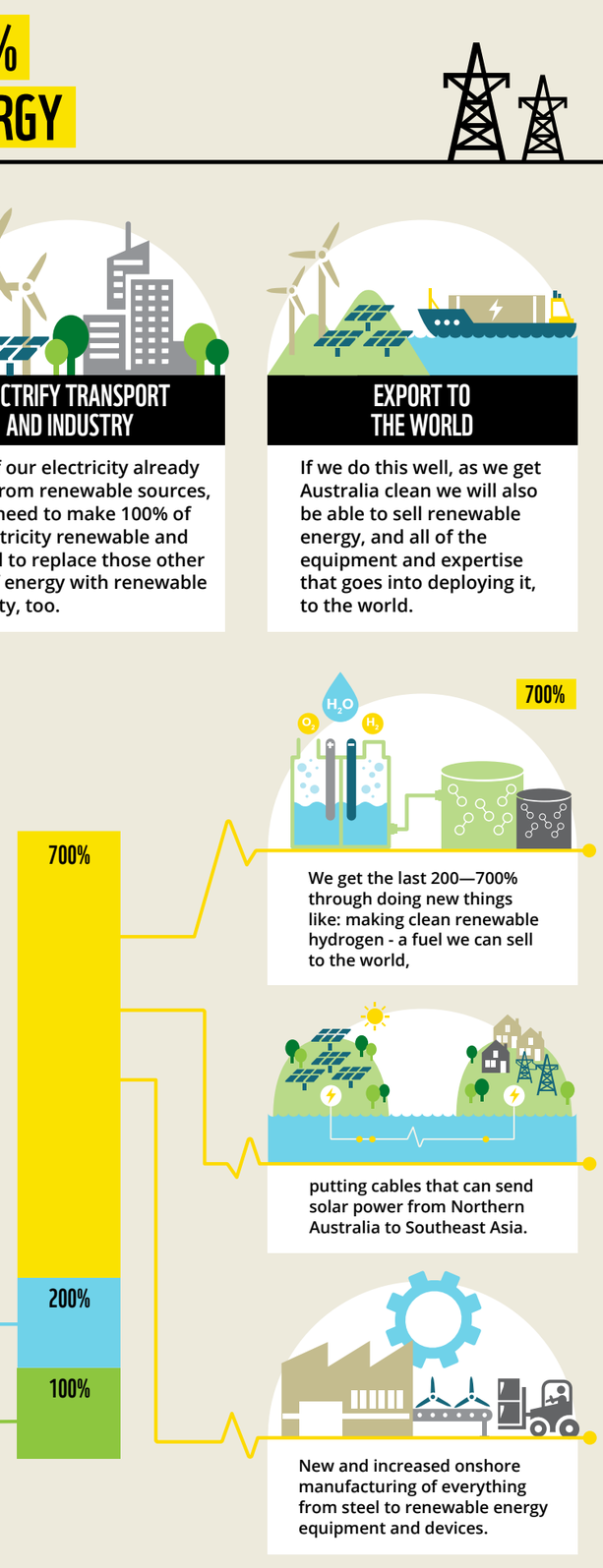
If we do this well, as we get Australia clean we will also be able to sell renewable energy, and all of the equipment and expertise that goes into deploying it, to the world.

700% RENEWABLES

We get to 200% when we convert our transport, industry and buildings to renewable electricity, too. Think of electric trucks and houses heated by solar instead of gas.



100% is what we'll have when all Australian electricity is from renewable sources.



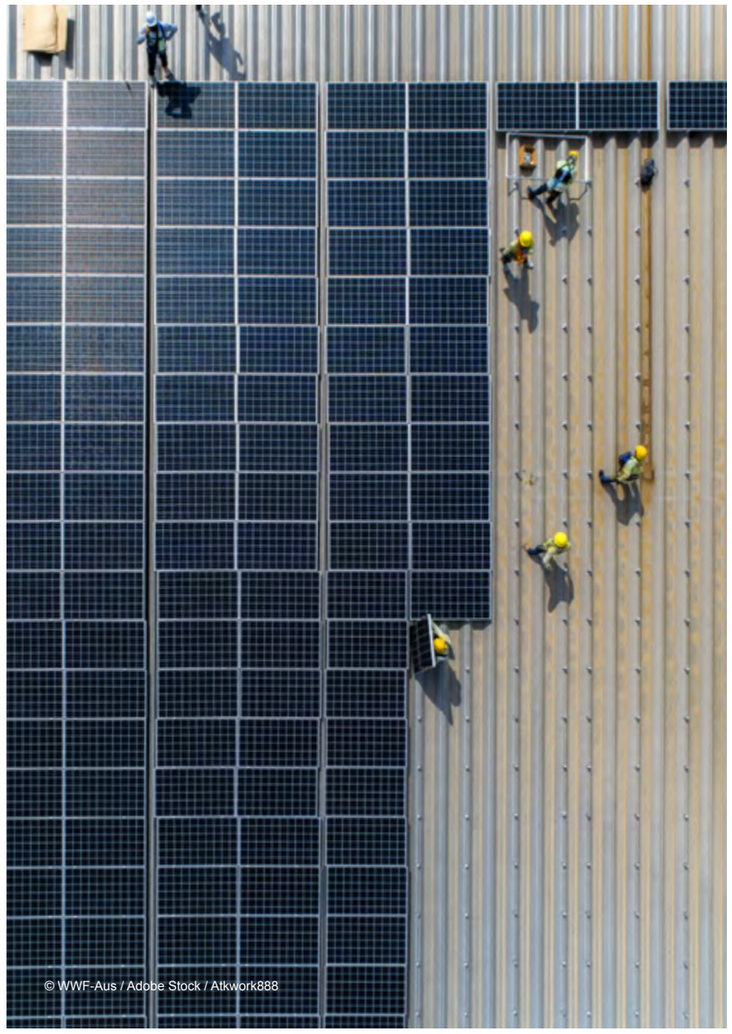
We get the last 200—700% through doing new things like: making clean renewable hydrogen - a fuel we can sell to the world,

putting cables that can send solar power from Northern Australia to Southeast Asia.

New and increased onshore manufacturing of everything from steel to renewable energy equipment and devices.

ABOUT THE RENEWABLE SUPERPOWER SCORECARD

The Renewable Superpower Scorecard presents a snapshot of how Australia's state, territory and federal governments are performing in the race to become a renewable superpower.



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The scorecard ranks Australia's states and territories on their progress, not just in switching Australia's domestic energy system to renewables, but also on how quickly they are working to establish new renewable export industries for the nation.

WWF-Australia intends to publish the superpower scorecards once a year, to track progress on our journey towards becoming a renewable energy powerhouse. The aim of the scorecard is to celebrate success and encourage greater ambition, by producing a rigorous, fair and independent comparison of each jurisdiction's policies, actions and progress.

The scorecard comprises 10 categories, covering the major building blocks needed to make Australia a renewable superpower (see Table 1, page 13). Each category contains one to three indicators (20 in total) against which the governments are scored. Each indicator is worth five points, making the maximum possible score 100 points. The Behind the WWF Renewable Superpower Scorecard technical report details these 20 indicators and the methodology used to assess progress.

Information is correct as of November 2021.

TABLE 1: The 10 categories assessed in *WWF's Renewable Superpower Scorecard*

Category	Why it matters	Points
Strong Renewable Energy Targets & Policies	Governments can position Australia to become a renewable superpower by adopting firm targets, timelines and policies to build sufficient firmed renewables to power our economy and build huge new clean export industries, putting Australia on the path to achieving 700% renewables by 2050.	15
Rolling out Renewable Energy	This is where the rubber hits the road. This category measures how much new renewable capacity was added in the past two years, and the percentage of renewables currently being generated by each state or territory, and nationally.	10
Renewable Energy Zones & Transmission	Renewable Energy Zones (REZ) are the best way to develop a cluster of new clean energy projects in a region. Off-grid mega-projects play a similar role to REZs in remote areas. New or upgraded electricity transmission lines are essential to transport renewable electricity to where it's needed.	10
Renewable Energy Industrial Precincts*	A Renewable Energy Industrial Precinct is a cluster of manufacturers powered by 100% renewable energy. Energy-hungry industries like steel and aluminium production can gain a global competitive advantage from Australia's cheap, clean electricity.	5
Developing a Renewable Hydrogen Industry	Renewable hydrogen has a huge role to play in decarbonising the world's economies. It can be shipped overseas and used to generate electricity, or used here in heavy industry to produce essential products like green steel and aluminium.	10
Ensuring Equitable Benefits	People on low incomes must always be able to access affordable green power. Workers and communities must benefit from the transition. First Nations peoples should play a key role in any renewable energy projects on their Country and share in the benefits they bring.	15
Renewable Export Industry Strategy	Australia needs a comprehensive strategy to develop a range of renewable export industries and position the nation as a major player in international markets. State and federal strategies should include clear goals backed by government investment and effective policy mechanisms.	10
Energy Storage and Balancing the Grid*	To make sure the supply of renewable energy is always balanced with demand, we need a lot more big batteries, pumped-hydro power stations, solar-thermal plants and flexible demand management programs.	10
Growing Demand for Renewable Energy & Exports	Governments can boost the production of renewable export products by developing new markets in Australia and overseas. This might include: government procurement policies; incentivising consumers to switch from gas and oil to electricity in their homes and transport; or establishing relationships with international buyers.	10
2021 Special Category - Renewable Recovery	Governments that place renewable energy and exports at the heart of their strategy for economic recovery from the global COVID-19 pandemic can create many thousands of jobs, especially in regional areas, and also put their economies on a stronger footing for the future.	5
Maximum score	**Points**	**100**

**Please note: the numbering of categories 4 & 8 has been swapped compared to the first Superpower Scorecard.*

The scorecard categories cover the three essential stages of becoming a renewable superpower:

1. cleaning up our electricity system;
2. electrifying transport, buildings and industry; and
3. exporting our renewable energy and renewable-powered products to the world.

Many governments are already making good progress in cleaning up their electricity systems, such as setting firm renewable energy targets and supporting the rollout of renewables and storage.

The task of electrifying transport and industry – to move away from oil and gas – is gathering pace, and the lower cost of renewable alternatives is driving competition in this area, so change could happen exponentially.

Many governments have recognised the opportunities and have started to get behind renewable export industries, but so far actions tend to be narrowly focused (e.g. only renewable hydrogen) or not of sufficient scale (e.g. individual project grants).

Important things to note and changes since last scorecard

There have been a few changes to the indicators and scoring system since the first Superpower Scorecard. The *Behind the Renewable Superpower Scorecard* technical report explains these in detail. The most significant change involves how we evaluate jurisdiction targets for renewable energy beyond 2030.

In the first scorecard, all jurisdictions were measured against WWF's trajectory for reaching 700% renewables by 2050, assuming that each jurisdiction should aim for seven times its current level of electricity generation. However, it's clear that some states have much greater technical potential for expanding their renewable energy generation capacity than others, so we have adopted a new methodology that takes this into account.

It's important to note that the scorecard assesses *government* performance, so it gives less weight to private sector initiatives occurring in the state or territory that are not actively supported by government/s.

For many of the scorecard categories, the Australian Capital Territory (ACT) cannot be subject to the same measures as other states and territories due to its unique situation as Australia's smallest, and only landlocked, jurisdiction. For this reason, the ACT has only been assessed on selected categories, and thus is not ranked against other jurisdictions in the national Superpower Scorecard. For other categories, where it is possible to score the ACT in the same way as other governments, these scores are presented in the ACT profile on page 42. See the *Behind the Renewable Superpower Scorecard* technical report, linked below, for further explanation.

We've chosen to limit the scope of the superpower scorecard to the development of renewable energy generation and other renewable industries, as the focus of WWF Australia's Renewables Nation program. This means the scorecard *doesn't* consider government policies or programs to support – or phase out – fossil fuels or other drivers of climate change such as deforestation.

For many categories, to ensure a level playing field, we have compared the jurisdiction's financial investment against its gross state product (GSP) or GDP for the federal government. This means that a state with a big economy, and deeper pockets, is expected to do more than smaller states with fewer resources.

For further information about WWF's research and policies visit the *WWF Renewables Nation Policy Library*

For details on the Superpower Scorecard methodology, see the WWF Technical Report Behind the WWF Renewable Superpower Scorecard

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RENEWABLE SUPERPOWER SCORECARD

Which Government is leading the way in the renewables race?

Leaderboard	Score	State government	Rank change
#1	61	Tasmania	–
#2	59	New South Wales	↑
#3	55	South Australia	↓
#4	48	Queensland	↑
#5	47	Victoria	↓
#6	39	Western Australia	↓
#7	37	Northern Territory	↑
#8	33	Federal	↓

Forecast: Shining Bright ☀ Getting There ◐ Must Shine Brighter ●

#1 Tasmania - remains the overall leader, thanks to its strong renewable energy targets and action across a broad range of policy areas. The island state has set up a new government coordinating agency to capture the full range of opportunities for renewable export industries.

#2 New South Wales - has moved up the scorecard leaderboard thanks to continued progress rolling out substantial new policy programs on renewable hydrogen, and decarbonising the industry and transport sectors.

#3 South Australia - is set to legislate its target of net 100% renewables by 2030. SA continues to be an active backer of renewable exports, but other states are catching up, causing SA to drop one place in the rankings.

#4 Queensland – is moving up the leaderboard by investing $2 billion in a Renewable Energy and Hydrogen Jobs Fund, improving its local benefits policy, and supporting new renewable export industries like the planned Gladstone hydrogen electrolyser manufacturing plant.

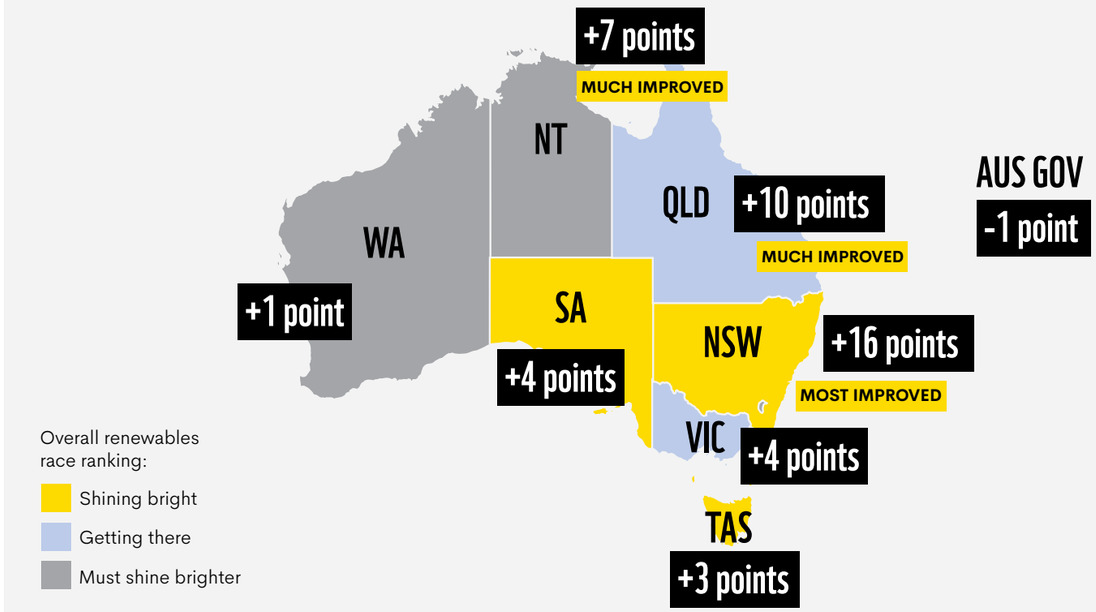
#5 Victoria – has slipped a little in the rankings, as other states forge ahead. Nonetheless Victoria is continuing to make strong progress implementing Renewable Energy Zones and developing gas-switching policies.

#6 Western Australia - has adapted its electricity network ready for a high level of renewables, and is developing hydrogen and battery export industries. WA is far from reaching full potential, however could quickly move ahead by adopting strong renewable energy targets and expanding its export focus to green steel.

#7 The Northern Territory –has improved its ranking after announcing a new Hydrogen Action Plan and releasing a clear plan to reach its target of 50% renewables in the Darwin-Katherine grid, including developing the territory's first Renewable Energy Hub near Darwin.

#8 The Australian Government – despite actively developing international partnership agreements that include potential new markets for renewable exports, the Federal government missed the opportunity of the Glasgow COP to announce an expansion of its support for domestic renewables, electrification and new renewable export industries.

WHICH STATES HAVE MADE PROGRESS SINCE SCORECARD #1?



Category Leaders

Category	Leader	The leading moves …
Strong Renewable Energy Targets & Policies	**ACT***	The ACT's renewable energy target includes a legislated mechanism to increase the supply of renewable electricity as demand grows and more sectors decarbonise. This means their effective target is around 200% renewable energy. Tasmania and South Australia also have strong targets of 200% and 500% to support new renewable export industries.
Rolling out Renewable Energy	**TAS**	New wind farms in Tasmania took the state to net 100% renewable electricity in 2020. The ACT also reached this milestone, but deployed fewer new renewables in the past two years.
Renewable Energy Zones & Transmission	**NSW**	NSW has a clear, legislated, well-funded plan to develop Renewable Energy Zones and improve its transmission system.
Renewable Energy Industrial Precincts	**NSW**	NSW's Clean Manufacturing Precincts program is the closest in nature to supporting the establishment of Renewable Energy Industrial Precincts.
Developing a Renewable Hydrogen Industry	**TAS & NSW**	NSW has joined Tasmania in the lead on supporting the growth of the renewable hydrogen industry.
Ensuring Equitable Benefits	**VIC**	Victoria has good programs to assist low-income earners to cut bills and access solar energy, as well as concrete initiatives to support coal-dependent regions and regional communities.
Renewable Export Industry Strategy	**WA & Federal**	Both these governments have a range of strategies and programs that include supporting new renewable export industries, including batteries, critical minerals and green metals.
Energy Storage and Balancing the Grid	**SA**	South Australia has a multi-pronged approach to energy storage and grid balancing including big-batteries, virtual power plant projects, synchronous condensers and demand management.
Growing Demand for Renewable Energy and Exports	**ACT*& NSW**	ACT is leading when it comes to growing demand for renewable electricity by encouraging fuel switching in buildings, transport. In NSW their programs to support industry and transport electrification are substantial.
Renewable Recovery: 2021 Special Category	**NSW**	The NSW government's promise of up to $3 billion in funding and concessions for the renewable hydrogen industry has put it in the lead.

* The ACT was only scored on six out of the 10 scorecard categories, due to its unique situation as Australia's smallest and only landlocked jurisdiction. Thus, the ACT is included as a category winner where appropriate, but not included in the national Scorecard rankings. For further details see Technical Report.

KEY FINDINGS

THE RESULTS OF THE SUPERPOWER SCORECARD ASSESSMENT SHOW:

#1

The race is on nationwide
Early leaders like Tasmania, South Australia and the ACT are still in strong positions, but other states are starting to catch up. New South Wales has made the greatest gains in the rankings, Queensland has also climbed up the ladder, and the Northern Territory and Western Australia are on the brink of major breakthroughs.

#2

Strong targets deliver results
The four governments with the strongest legislated renewable energy targets, being Tasmania, South Australia, ACT and NSW, are also the states leading renewable energy deployment:

- Tasmania led the world by adopting a legal target of 200% renewables by 2040.
- South Australia has a 500% renewables by 2050 target and is set to legislate net 100% renewables by 2030.
- The ACT has already achieved 100% renewables status through a legislated program.
- NSW has adopted a legally-binding goal of 12GW renewable energy by 2030, which equates to around 67% of the state's electricity supply (see Figure 1).

#3

Increased investment in renewable hydrogen
Since the first scorecard was published in March 2021, there has been a $3.7 billion increase in promised government funding for the renewable hydrogen industry across Australia, as jurisdictions begin implementing their renewable hydrogen industry strategies. NSW and Tasmania are up there with global leaders providing more than 0.1% of GSP (Gross State Product) in funding programs to support renewable hydrogen (see Figure 2).

#4

Lack of Renewable Export Industry Strategies
The next vital step is for governments to think bigger and more broadly, by developing a comprehensive Renewable Export Industry Strategy that covers a range of potential export types, and sets ambitious targets for the next three decades. This would give other growing renewable export industries such as expertise or renewable powered products the kind of boost that's been seen for renewable hydrogen.

#5

Greater focus on delivering equitable benefits is required
Every jurisdiction has much more work to do to ensure Indigenous communities, regional communities, workers, consumers and particularly low-income households benefit from the energy transition and are meaningfully engaged in decision-making.

#6

Need for Renewable Energy Industrial Precincts
Major players in the steel and aluminium industries are starting the switch to renewable energy to produce low-carbon commodities, but government industry policies are lagging behind. By planning and supporting the establishment of Renewable Energy Industrial Precincts, governments could help local industries gain a global competitive advantage and secure local jobs.

#7

Big batteries are stepping up
Six big batteries (over 10MW) have been switched on in 2021 (or are due to be operational by the end of the year) including the largest in the country - Victoria's 350MW big battery near Geelong. This has increased the pace at which essential new energy storage is being added to the grid in Victoria, Queensland and the Northern Territory.

Figure 1: Percentage Generation from Renewables vs. 2030 Targets and Beyond

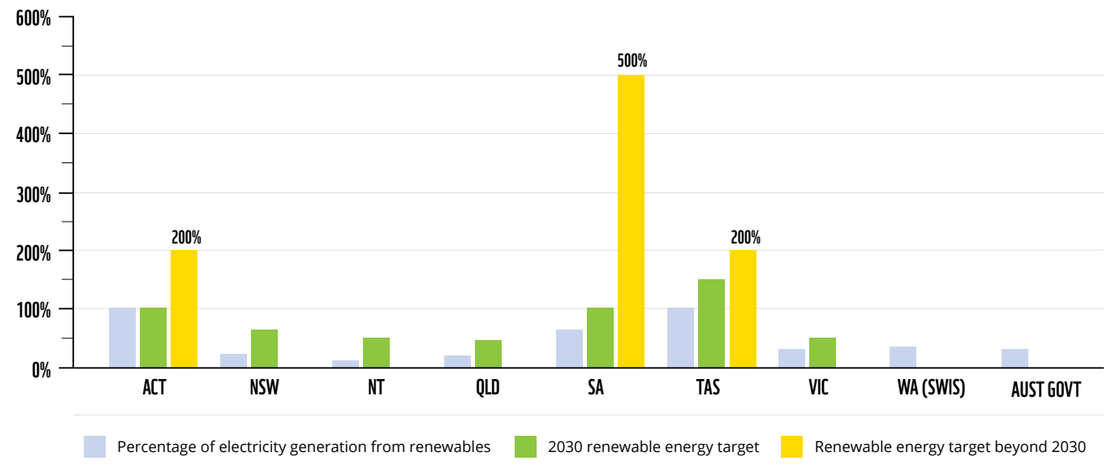


Figure 1. Most governments are making progress in rolling out renewables, but still have a fair way to go to reach their 2030 renewable energy targets. The ACT's target for beyond 2030 has been estimated as 200%, given the government's pledge to replace oil and gas with renewable electricity and zero-emissions fuels.

Figure 2: Investment in Renewable Hydrogen

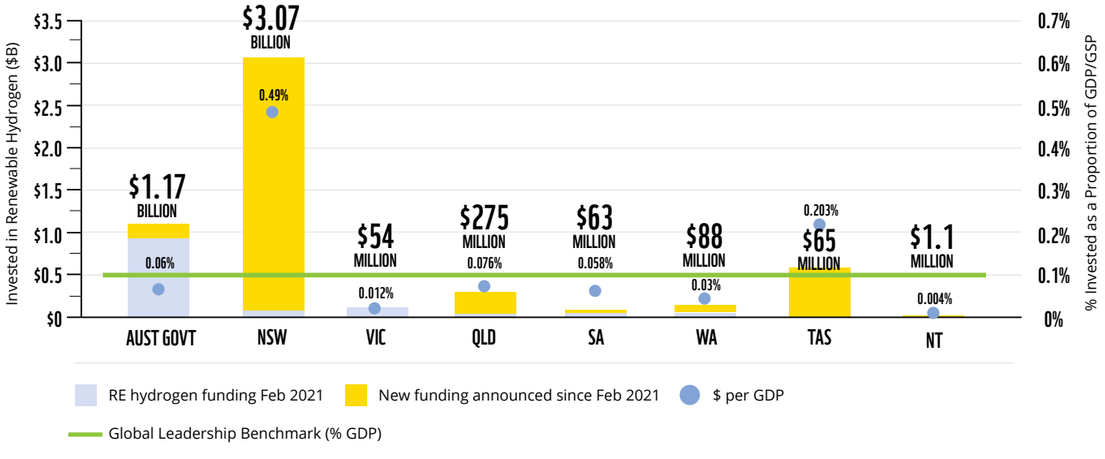
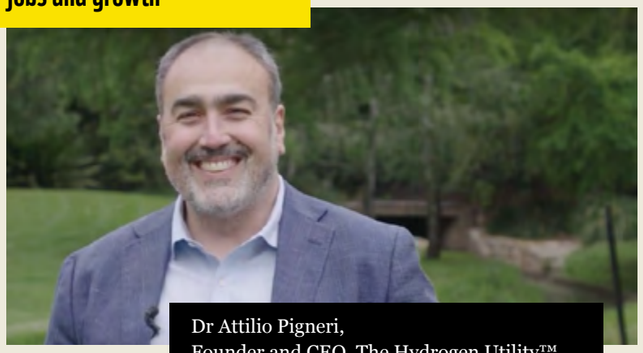


Figure 2. This figure shows each government's promised funding in renewable hydrogen against a global leadership benchmark of 0.1% of GDP/GSP[3].

3 The Global Leadership Benchmark line is based on government funding from renewable hydrogen Germany, France and Spain who have collectively committed over US$20b in support for renewable hydrogen or greater than 0.1% of their respective GDP.

SHINING EXAMPLES FROM AROUND AUSTRALIA

Renewable energy hubs fuel jobs and growth



Dr Attilio Pigneri,
Founder and CEO, The Hydrogen Utility™

The Queensland Government recently announced it would be investing $2 billion in the Queensland Renewable Energy and Hydrogen Jobs Fund to support cleaner and cheaper energy powering jobs and industries.

In October, H2U – The Hydrogen Utility™, Gladstone Ports Corporation and other key stakeholders then signed a Letter of Intention to take the next steps in developing green hydrogen and ammonia export facilities in Gladstone.

“We see great potential in this project driving the global transition to a new, internationally tradable decarbonised energy,” said Dr Attilio Pigneri, Founder and CEO of The Hydrogen Utility™.

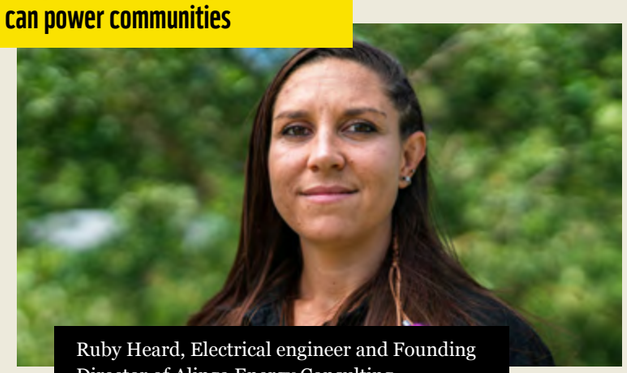
The proposed H2-Hub Gladstone project will be Queensland’s first export-oriented green hydrogen and ammonia manufacturing facility. It will use 100% renewable energy from solar and wind and is expected to be completed in the second half of 2025, generating more than $4 billion in investment and hundreds of jobs.

Gladstone has long been a hub of exporting energy, traditionally coal and liquified natural gas (LNG). With its growing green ammonia export capacity, Gladstone is set to thrive in a decarbonising global market, and will remain an industrial powerhouse.

“The global shift towards green hydrogen and green ammonia as an energy source creates an opportunity for Australia to maintain its status as a major energy resources exporter whilst developing its core manufacturing capability,” Dr Pigneri said.

The creation of Regional Renewable Energy Industrial Precincts in places like Gladstone will boost regional economies, secure and grow existing local manufacturing while supporting and creating hundreds of regional jobs.

Indigenous-led microgrid projects can power communities



Ruby Heard, Electrical engineer and Founding Director of Alinga Energy Consulting

Alinga Energy is a recipient of the Federal Government’s Regional and Remote Communities Reliability Fund - Microgrids grant. Ruby Heard, electrical engineer and Founding Director of Alinga Energy Consulting, has been working on feasibility studies for remote Indigenous communities, including Mowanjum, Bawoorrooga and Myalup, ensuring they can benefit from their abundance of sunshine and today’s technology. Microgrids can improve the reliability and resilience of communities, while also decreasing energy costs.

However, Ruby said much still needs to be done to support Indigenous communities switching to renewable energy. Regulation is complicated, and communication is key - it needs to be easier for communities to understand their options and potential benefits.

Another issue Ruby highlighted which governments should prioritise is enacting the recommendations of existing reports and studies. Many Indigenous communities have been engaged to assist researchers and officials to build an understanding of the key issues and barriers, but tangible actions are lacking. “The recommendations exist,” Ruby said, “they just need to be acted on.” When nothing comes of community consultation or engagement, trust is eroded and this affects the social license, making participation in the expansion of renewable energy feel less meaningful.

When thinking about the future, Ruby said: “I’m excited about the idea of Indigenous-owned energy providers, which don’t exist yet, but I hope to see energy supplied to communities by communities, or by Indigenous-owned enterprises”.

Climate Change Strategy supports industries of the future

Kristy Battista,
Chief Technology Officer, Allume

In May, the Victorian Government unveiled its Climate Change Strategy and interim targets, which aim to seize the opportunities of climate action by advancing technology, new industries and local jobs.

One Melbourne-based business embodying these objectives is Allume Energy. Allume designed and locally builds SolShare, the world’s only combined hardware and software for sharing rooftop solar in apartment buildings and community housing. “We’re at the forefront of the renewable energy transition, and what greater problem to be working on than getting rooftop solar access to apartment residents across the globe,” said Allume’s Chief Technology Officer Kristy Battista.

Allume was founded with the vision of ensuring everyone has access to clean and affordable energy from the sun. Now, it says SolShare has the potential to unlock solar for millions of people around the world as this Aussie innovation is exported.

“Allume is at an exciting stage of growth, with our international expansion accelerating,” Kristy said. “Currently we’re focused on the US and the UK, where new and existing apartments can benefit from our technology. As we continue to gain traction overseas and our manufacturing volume increases, so will the affordability of the solution, unlocking this technology even further. Programs like the Victorian Government’s Solar Homes have supported community housing providers with the costs of retrofitting solar installation – helping low-income communities to access the benefits of renewable energy and reduce their bills by up to 40%.

AFTER GLASGOW – NEW GLOBAL OPPORTUNITIES

"Glasgow must be the kickoff of a decade of ambition and innovation to preserve our shared future."

US President Joe Biden, COP26 Leaders Statement, November 2021.

During the recent UN Framework Convention on Climate Change 26th Conference of the Parties (COP26) held in Glasgow, a number of new global initiatives were announced and commitments made, that will accelerate the global race to renewables.

While still not enough to avert the climate crisis and limit warming to 1.5 degrees, these initiatives open up even more opportunity for Australia to become a renewable exports superpower, and help the world decarbonise, but only if we back the potential with concrete policy.

Glasgow Breakthroughs

At COP26 over 40 countries, including Australia, signed up to the Glasgow Breakthroughs – a set of global goals that aim to make clean technologies and sustainable solutions the most affordable, accessible and attractive option in major sectors of the economy before 2030. Achieving the Glasgow Breakthroughs on transport, power, steel, hydrogen and agriculture could:

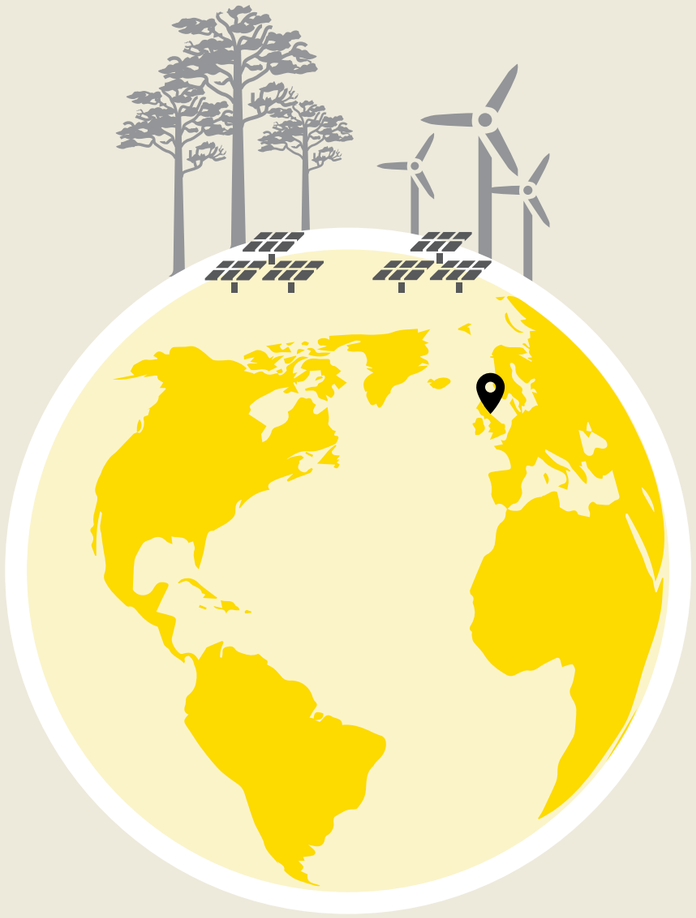
- Support the creation of more than 20 million jobs worldwide by 2030.
- By 2030, increase world GDP by 4% more than it would otherwise have been.
- Save two million lives worldwide every year, by halving premature deaths associated with air pollution by 2050 compared to 2020.

Meeting these goals would also mean new renewable export opportunities for Australia in renewable hydrogen, green steel, critical minerals, batteries and more.

There were hundreds of new initiatives announced during COP26 that will speed up transformation in key industries, for example:

- the European Union and the United States agreed to support trade in low-carbon steel and aluminium.
- The US's First Movers Coalition will work with the business sector to stimulate demand for low-emission commodities.
- The UK, India, Germany, Canada and UAE committed to support new markets for low carbon steel, cement and concrete
- The Declaration on Zero Emissions Shipping, signed by 14 maritime nations, aims to have a 'critical mass' of zero-emission ships on the water by 2030.

These few examples give an indication of the momentum and activity happening globally to open up new markets for climate solutions and clean exports.



Fossil fuels on the way out

Phasing out fossil fuels is critical to accelerating the uptake of renewables and protecting our climate. In the lead up to COP26, the world's largest economies committed to stop financing coal plants abroad. In a global first, this was followed by a coalition of countries committing to assist South Africa to end its high-reliance on coal and transition towards a low-emissions economy through an $8.5 billion package. This deal represents a model of climate action built on enabling developing economies to rapidly transform their domestic energy system and support workers and communities impacted by the transition.

Additionally, the Glasgow Pact - the statement of outcomes from the COP itself - included commitments to accelerate the technologies and policies needed to transition towards low emissions energy systems. Specific priorities include: rapidly scaling up clean energy generation and energy efficiency measures; and a phase down of coal-power production and fossil fuel subsidies.

Methane, a potent greenhouse gas also saw itself squarely in the crosshairs, with more than 90 countries (not including Australia) pledging to reduce methane emissions by 30% by 2030. This will have significant impacts on the gas and shipping industries, which both create significant methane emissions in their day-to-day businesses. It also demonstrates the need to accelerate the deployment of renewable hydrogen and electrification technologies.

The world is moving toward a renewable future, and despite having the highest renewable potential in the world, Australia risks being left behind without immediate and committed action to realise our massive export opportunities.

Australia's role in the global shift to renewables

While Australia committed to reducing greenhouse emissions to net zero by 2050, it did not increase its 2030 ambition. This is unfortunate, since by embracing our potential as a renewable energy export superpower Australia can empower both ourselves and other countries to accelerate the transition to net-zero.

Communities around the world are already experiencing the catastrophic impacts of climate change, yet not every country is able to transition to net-zero at the same rate. Targeted financial support, alongside sharing critical low-emissions technologies such as renewables are essential.

Australia could produce the world's cheapest renewable hydrogen, and can deliver the needed expertise, software and services to punch above our weight as a leader of enabling climate action around the world.

The Glasgow Pact calls on countries like Australia to deliver increased 2030 climate targets by November 2022. South Australia and NSW have recently committed to legislating a 50 per cent emissions reduction by 2030. Now, we need to see the Federal Government at least match these commitments and implement policies to enable Australia to shift from a global climate laggard to climate leader, becoming a renewable superpower in the process.

ENSURING EQUITABLE BENEFITS

Australia is at a crossroads, and we now have a choice to make. It is undeniable that renewable energy is a part of Australia's future – from the unstoppable momentum of everyday Australians putting solar on their rooftops, to major businesses switching to 100% renewables and the development of mega renewable energy projects across the country. The only question that remains is how we transition.

With a committed direction, coordinated planning and adequate funding, renewable energy has the potential to reinvigorate and transform Australian communities, both now and in the longer-term. By using cleaner and more affordable renewable energy sources, local economies can be diversified, energy poverty reduced, and new industries and jobs created while existing existing industries like steel and aluminium are secured to compete in a net-zero global economy.

Without this policy action, renewable energy could exacerbate existing inequality, restricting the benefits of Australian sun and wind to those who can afford it. Such inaction would mean that those who can least afford it would be locked out of the renewable transformation and stuck paying increasing prices for ageing and polluting energy infrastructure. It also risks renewable projects being built on Indigenous land or in communities without adequate consultation or tangible delivered benefits, potentially undermining social licence and leading to job losses because Australia's exports are no longer competitive in a net-zero global market.

Ensuring that the benefits of energy transition are shared equitably is not only the right thing to do; it is critical to ensuring Australia can meet its potential as a renewable energy superpower. Australia has the sun, wind, space, skills, expertise, minerals, metals, trading relationships and history of innovation to excel in a zero-carbon world. Renewable energy exports provide Australia and its people with an opportunity to thrive. However, if the benefits of renewable exports are not shared by all Australians, there's a risk of undermining community support and acceptance, which could prevent progress and hold Australia back.

Within the scorecard, WWF particularly focuses on policy mechanisms that look at how Indigenous communities, regional communities, energy workers, consumers and particularly low-income households are included in and benefit from the energy transition. These communities and groups are those most impacted by the energy transformation, especially if it is implemented without consideration of their specific needs and aspirations. To become a superpower, renewable energy will be expanded on the lands of these communities, or within their communities. It will directly impact their existing and future jobs, and the energy bills they pay.

Every Australian government is scoring low on this category of the scorecard (see Figure 3). As such, all jurisdictions can and should be doing more to ensure that regional communities, workers, consumers and First Nations peoples benefit from Australia becoming a renewable superpower.

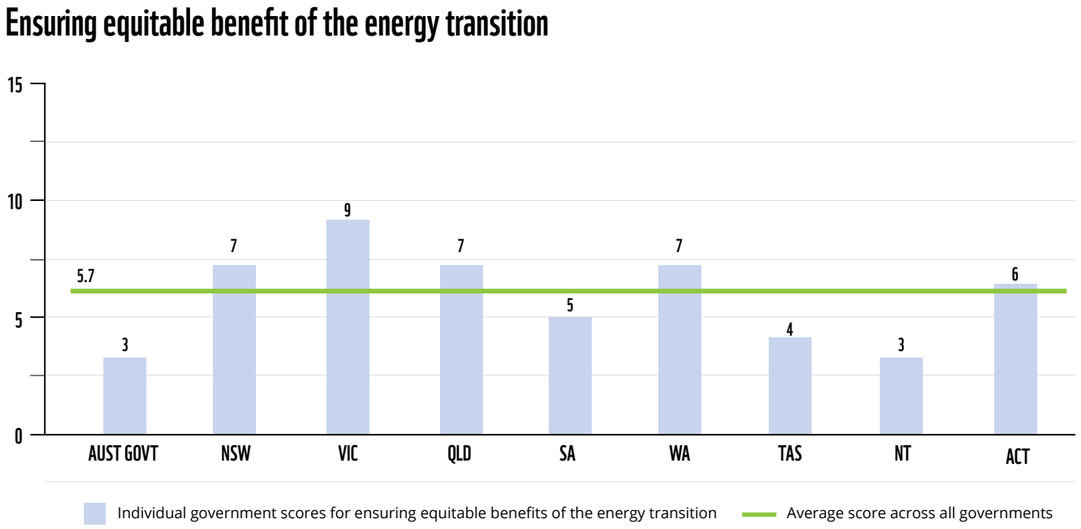


Figure 3. Individual government scores for scorecard category #6 Ensuring equitable benefits of the energy transition. The green line shows the average score across all governments, out of a maximum 15 points.

In order to meet the transformative potential of renewable energy to deliver multi-faceted and long-term social and economic outcomes, policy must be informed by meaningful engagement with communities that starts early, is adequately resourced and characterised by a commitment to genuinely listening to community aspirations and needs, rather than presupposing solutions. Failure to engage or inappropriate engagement could see public concerns regarding energy projects and policies escalate, causing widespread social backlash and delaying progress.

Therefore, we're calling on governments to collaborate with communities and their advocates to design and deliver effective policy mechanisms that ensure First Nations communities, regional communities, energy workers and consumers, particularly low-income consumers, are included in, and benefit from Australia becoming a renewable energy export superpower.

In analysing the indicators in this category, WWF-Australia engaged a range of organisations who specialise in advocacy relating to the social justice dimensions of the energy transition. For details see acknowledgements on page 2.

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INDIVIDUAL GOVERNMENT RESULTS

Tasmanian Government Scorecard

Ranking 1 **Score** 61

CATEGORY LEADER Developing a renewable hydrogen industry

CHANGE SINCE LAST SCORECARD: +3 POINTS

Category	Score	The Goal
Strong Renewable Energy Targets & Policies	11	15
Rolling out Renewable Energy	8	10
Renewable Energy Zones & Transmission	8	10
Renewable Energy Industrial Precincts	3	5
Developing a Renewable Hydrogen Industry	9	10
Ensuring Equitable Benefits	4	15
Renewable Export Industry Strategy	4	10
Energy Storage and Balancing the Grid	8	10
Growing Demand for Renewable Energy & Exports	5	10
2021 Special Category - Renewable Recovery	1	5

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Shining Strengths!

- Tasmania has established a new, whole-of-government coordinating agency to work towards the state's target of 200% renewables by 2040 and capture the full range of industry and decarbonisation opportunities. Renewables, Climate and Future Industries Tasmania (ReCFIT) will report directly to the Premier, Minister for Energy and Emissions Reduction, and the Minister for Climate Change.
- Public consultation has been undertaken to develop a Renewable Energy Coordination Framework for Tasmania that will coordinate the rollout of three Renewable Energy Zones. WWF-Australia is hopeful this will include strong policies on community consultation, Indigenous involvement and local benefit sharing.
- In response to a review of the Tasmanian Climate Change Act, the government has committed to developing sectoral decarbonisation plans for the transport and industrial sectors (among others), which is expected to accelerate the switch to renewable electricity to replace fossil oil and gas.

How to Shine Brighter?

- Tasmania currently lacks a comprehensive Renewable Export Industry Strategy that covers a range of potential export types and sets ambitious targets for the next three decades.
- The Tasmanian Government has been a strong advocate for renewable hydrogen and is promoting Bell Bay as a future hydrogen hub, however the government does not yet have an integrated program to develop Renewable Energy Industrial Precincts around the state, to capitalise on its global competitive advantage as a net-100% renewable state.

[4] The ACT has also reached the 100% milestone, but due to its small size relies on importing renewable electricity it has contracted from developments in other states.

"Tasmania is a world leader in climate action, we have a great story to tell, and we are committed to seizing the numerous opportunities it represents."

Tasmanian Premier Peter Gutwein, August 2021.

Winfd turbines at a wind farm as seen from Green Point beach in Tasmania, Australia © Michael Evans / Adobe / WWF-Australia

New South Wales Government Scorecard

Ranking 2 **Score 59**

CATEGORY LEADER Renewable Energy Zones and transmission; Renewable energy industrial precincts; Developing a renewable hydrogen industry; Growing demand for renewable energy and exports; Renewable recovery.

CHANGE SINCE LAST SCORECARD: +16 POINTS

Category	Score	The Goal
Strong Renewable Energy Targets & Policies	6	15
Rolling out Renewable Energy	5	10
Renewable Energy Zones & Transmission	9	10
Renewable Energy Industrial Precincts	4	5
Developing a Renewable Hydrogen Industry	9	10
Ensuring Equitable Benefits	7	15
Renewable Export Industry Strategy	5	10
Energy Storage and Balancing the Grid	4	10
Growing Demand for Renewable Energy & Exports	6	10
2021 Special Category - Renewable Recovery	4	5

Forecast Shining Bright · Getting There · Must Shine Brighter

Shining Strengths!

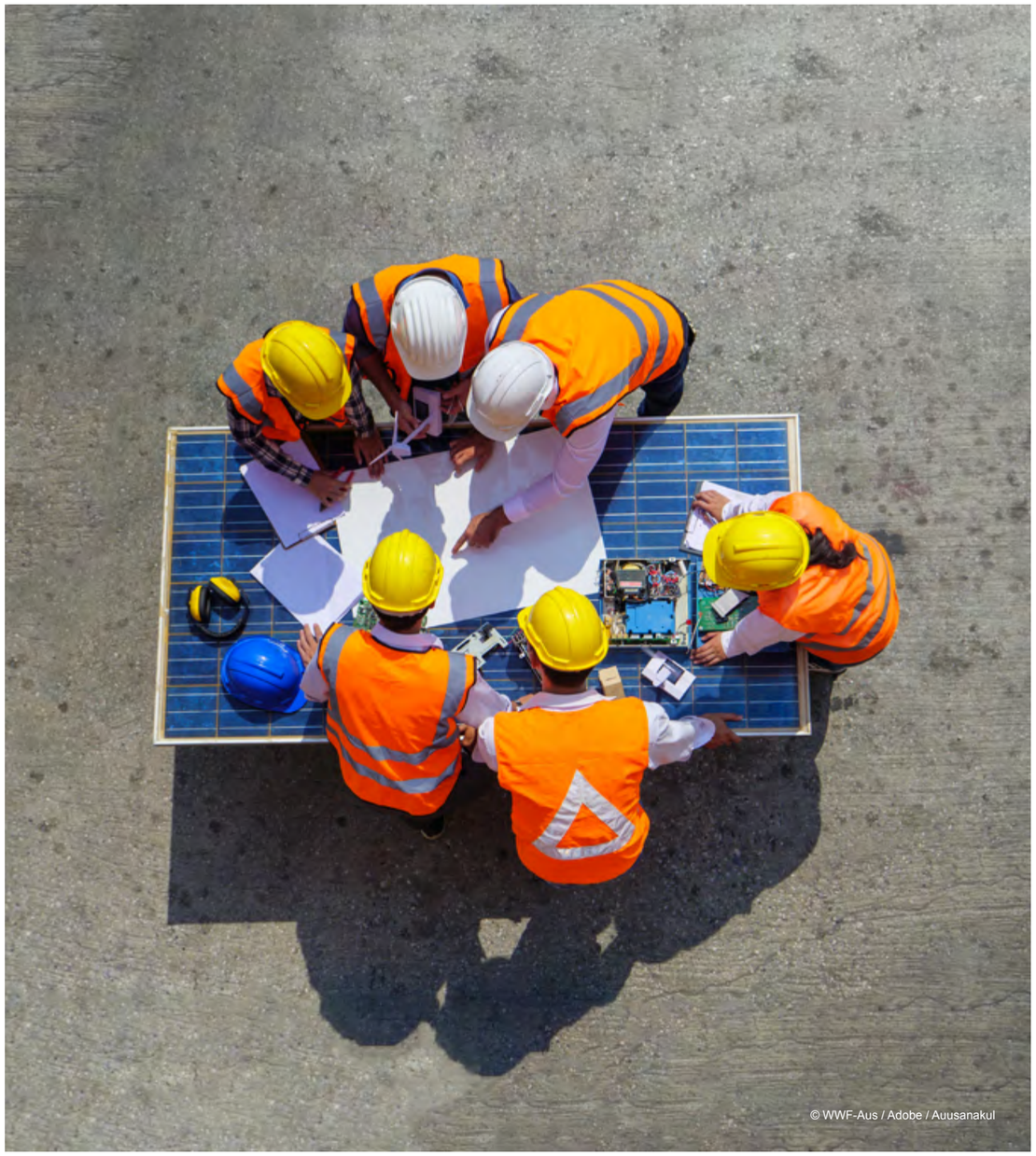
- The NSW Government's Net Zero Industry Innovation Program (NZIIP) is a comprehensive package of initiatives– backed by $750m funding – to support industries to reduce carbon emissions by adopting renewable energy and low-emissions technologies.
- The new NSW Hydrogen Strategy sets ambitious stretch goals to produce 110,000 tonnes of renewable hydrogen per annum by 2030, and sets out a detailed plan to accelerate the industry's growth, with up to $3 billion in funding and concessions.
- NSW is starting to decarbonise its transport systems, with a strong Electric Vehicle Strategy and a Bus Fleet Transition Strategy to switch to all-electric buses by 2030. The NSW Hydrogen Strategy also aims to have 20% of the government's heavy-vehicle fleet run on hydrogen fuel.

How to Shine Brighter?

- NSW has a clear plan for meeting a large part of its current electricity demand from renewables, but is yet to set targets to deploy enough renewable generation to decarbonise transport, buildings and industry or power new renewable export industries.
- A key missing piece in NSW's energy policy is a comprehensive Renewable Export Industry Strategy that covers a range of potential export types and sets ambitious targets for the next three decades.
- There's a clear opportunity for NSW to streamline support for renewable energy export industries by planning and supporting the establishment of Renewable Energy Industrial Precincts to decarbonise existing industry and develop new clean manufacturing opportunities in places like the Hunter and Port Kembla.

"NSW wants to be at the front of the queue, positioning our state as both a renewable energy superpower and an economic powerhouse for the decades ahead."

Energy Minister Matt Kean, September 2021.



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South Australian Government Scorecard

Ranking 3 **Score 55**

CATEGORY LEADER Energy storage and balancing the grid.

CHANGE SINCE LAST SCORECARD: +4 POINTS

Category	Score	The Goal
Strong Renewable Energy Targets & Policies	10	15
Rolling out Renewable Energy	6	10
Renewable Energy Zones & Transmission	7	10
Renewable Energy Industrial Precincts	3	5
Developing a Renewable Hydrogen Industry	5	10
Ensuring Equitable Benefits	5	15
Renewable Export Industry Strategy	4	10
Energy Storage and Balancing the Grid	9	10
Growing Demand for Renewable Energy & Exports	5	10
2021 Special Category - Renewable Recovery	1	5

Forecast Shining Bright ☀ Getting There ◐ Must Shine Brighter ●

Shining Strengths!

- The South Australian Government has introduced legislation to enshrine its targets of net 100% renewable energy by 2030.
- Construction of the new EnergyConnect high-voltage transmission line between SA and NSW is expected to start this year. The project received financial backing from the federal, SA and NSW governments, and will enable more renewable energy to flow into the National Electricity Market.
- South Australia has led targeted land-use planning and infrastructure work to establish Port Bonython as a Hydrogen Hub and a major exporter of renewable hydrogen and ammonia products. Seven project proposals have been shortlisted to provide hydrogen to this hub.

How to Shine Brighter?

- Despite its ambitious targets for renewable energy exports, the South Australian Government is yet to develop a comprehensive Renewable Export Industry Strategy that covers a range of potential export types to ensure the state fully capitalises on its leadership in this space.
- While the majority of South Australia's hydrogen programs are targeting renewable hydrogen, their Export Prospectus includes promotion of fossil hydrogen.

South Australia's reputation as Australia's leader in renewable energy investment… is helping to attract further investment into our state and creating jobs."

Stephen Patterson, November 2021

Craig Johnston, Operations Supervisor at sonnen batterie factory, Adeliade, SA © WWF-Australia

Queensland Government Scorecard

Ranking 4 **Score 48**

CHANGE SINCE LAST SCORECARD: +10 POINTS

Category	Score	The Goal
Strong Renewable Energy Targets & Policies	4	15
Rolling out Renewable Energy	4	10
Renewable Energy Zones & Transmission	7	10
Renewable Energy Industrial Precincts	3	5
Developing a Renewable Hydrogen Industry	8	10
Ensuring Equitable Benefits	7	15
Renewable Export Industry Strategy	5	10
Energy Storage and Balancing the Grid	4	10
Growing Demand for Renewable Energy & Exports	4	10
2021 Special Category - Renewable Recovery	2	5

Forecast Shining Bright | Getting There | Must Shine Brighter

Shining Strengths!

- The Queensland Government is investing $1 billion in its Renewable Energy and Hydrogen Jobs Fund over five years, and has promised an additional $1 billion in future years. The fund will enable Queensland's three government-owned electricity generators to build or co-invest in new renewable energy and hydrogen projects across the state.
- With state government support, the regional city of Gladstone has become a hive of renewable hydrogen manufacturing, with three large projects in development. These include the world's largest hydrogen electroyser manufacturing facility, plans to supply the town's huge aluminium smelter with renewable energy, and a feasibility study underway to produce and export renewable hydrogen from Gladstone to Japan.
- The draft Queensland State Infrastructure Strategy includes 'Realising our future as a renewable energy superpower' as one of five cross-government focus areas for infrastructure investment over the next 20 years.

How to Shine Brighter?

- Despite its stated ambition to become a renewable energy superpower, Queensland has only committed to a renewable energy target of 50% by 2030, which is not nearly enough to power new renewable export industries or decarbonise the state's economy.
- There are a number of initiatives in Queensland to support renewable-powered manufacturing projects, but these could be far more effective if they were scaled up and coordinated in a program to develop Renewable Energy Industrial Precincts across the state, particularly in Gladstone and Townsville.
- Queensland is well behind other states when it comes to decarbonising transport, industry and buildings. The government could do much more to encourage energy efficiency and accelerate the switch from oil and gas to renewable electricity and green hydrogen.

"We have the skills and workforce to manufacture the components and new technology Queensland needs to meet our renewable energy target. Solar panels, electrolysers, wind turbines and batteries should be manufactured here in Queensland." Queensland Minister for Energy, Renewables and Hydrogen and Minister for Public Works and Procurement Mick de Brenni, June 2021

© Plumbing Industry Climate Action Centre

Victorian Government Scorecard

Ranking **5** Score **47**

CATEGORY LEADER Ensuring equitable benefits.

CHANGE SINCE LAST SCORECARD: +4 POINTS

Category	Score	The Goal
Strong Renewable Energy Targets & Policies	6	15
Rolling out Renewable Energy	4	10
Renewable Energy Zones & Transmission	8	10
Renewable Energy Industrial Precincts	1	5
Developing a Renewable Hydrogen Industry	2	10
Ensuring Equitable Benefits	9	15
Renewable Export Industry Strategy	3	10
Energy Storage and Balancing the Grid	7	10
Growing Demand for Renewable Energy & Exports	4	10
2021 Special Category - Renewable Recovery	3	5

Forecast Shining Bright ☀ Getting There ◐ Must Shine Brighter ●

Shining Strengths!

- The Victorian Government has committed to replacing gas with carbon-free alternatives. Although a final policy is yet to be decided, the consultation paper for Victoria's Gas Substitution Roadmap includes pathways to improve energy efficiency, electrify heating and industry, and use more renewable hydrogen.
- As part of its new Climate Change Strategy, the Victorian Government has pledged to power all government operations with 100% renewable electricity by 2025. The second VRET auction, launched in August, will see the government purchase 600MW of renewable energy to power state-run schools and hospitals, and the metropolitan rail network.
- The Victorian Government fast-tracked the development of a 300MW big battery near Geelong to balance the grid during peak-demand periods in summer. The battery will enable greater use of variable renewable energy from wind and solar, and once fully operational will be Australia's biggest battery system.

How to Shine Brighter?

- The electric vehicle (EV) policy adopted by the Victorian Government has the welcome goal of 50% of new vehicles being zero-emissions by 2030, however the subsidies the government is offering EV buyers will be funded by a new road-user charge that creates more barriers and ignores the many public health and climate benefits of the switch to electric cars.
- Victoria has clear plans for meeting a large part of its domestic electricity demand from renewables, but is yet to set targets to deploy enough renewable generation to power new renewable export industries.
- Victoria could help grow renewable energy export industries by planning and supporting the establishment of Renewable Energy Industrial Precincts that support jobs by providing cheaper renewable energy for manufacturing industries.

"We've created more jobs in renewables than any other state. To continue this jobs boom, we need to continue investing in innovation and pushing the frontiers of this technology." Victorian Energy Minister Lily D'Ambrosio, August 2021

Western Australian Government Scorecard

Ranking 6 **Score 39**

CATEGORY LEADER Renewable Export Industry Strategy.

CHANGE SINCE LAST SCORECARD: +1 POINT

Category	Score	The Goal
Strong Renewable Energy Targets & Policies	1	15
Rolling out Renewable Energy	4	10
Renewable Energy Zones & Transmission	5	10
Renewable Energy Industrial Precincts	3	5
Developing a Renewable Hydrogen Industry	4	10
Ensuring Equitable Benefits	7	15
Renewable Export Industry Strategy	6	10
Energy Storage and Balancing the Grid	4	10
Growing Demand for Renewable Energy & Exports	4	10
2021 Special Category - Renewable Recovery	1	5

Forecast Shining Bright ☀ Getting There ◐ Must Shine Brighter ●

Shining Strengths!

- Western Australia's updated Renewable Hydrogen Strategy sets a goal for WA to have 12% of the global market for green fuel by 2030, and Hydrogen Minister Alannah McTiernan has expressed the state's aspiration to develop 10GW of hydrogen projects by 2030 and up to 200GW by 20404.
- Stage Two of WA's Energy Transformation Strategy commits the government to continue to plan and manage the orderly transition from coal-fired generation and support the state's mining sector to transition to renewables.
- Western Australia's main grid has seen the biggest increase in the proportion of renewable electricity in the system, jumping from 22% in FY 2019-20 to 30% in FY 2020-21, thanks to a string of new solar farms coming online.

How to Shine Brighter?

- Although WA has strong goals for rapidly growing a renewable hydrogen industry, these are not yet backed by clear targets or policies to increase renewable energy generation at the pace required to power the new export industry.
- The WA Government has a number of programs to support renewable energy manufacturing projects, but these could be far more effective if they were scaled up and coordinated in a program to develop Renewable Energy Industrial Precincts across the state.
- Western Australia has undermined its support for the renewable hydrogen industry by backing a new project at Kwinana near Perth that will include producing hydrogen from fossil gas.

"Our State is perfectly positioned to lead the global renewable hydrogen industry, delivering a strong economic future for WA and becoming a major contributor to global decarbonisation."

WA Hydrogen Industry Minister Alannah MacTiernan, July 2021

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Northern Territory Government Scorecard

Ranking 7 **Score 37**

CHANGE SINCE LAST SCORECARD: +7 POINTS

Category	Score	The Goal
Strong Renewable Energy Targets & Policies	4	15
Rolling out Renewable Energy	3	10
Renewable Energy Zones & Transmission	6	10
Renewable Energy Industrial Precincts	2	5
Developing a Renewable Hydrogen Industry	4	10
Ensuring Equitable Benefits	3	15
Renewable Export Industry Strategy	5	10
Energy Storage and Balancing the Grid	5	10
Growing Demand for Renewable Energy & Exports	4	10
2021 Special Category - Renewable Recovery	1	5

Forecast Shining Bright ☀ Getting There ◐ Must Shine Brighter ●

The Northern Territory faces challenges in the transition to renewable energy not faced by other jurisdictions. It has a huge land area, low population and small economy. The NT energy system is made up of a number of small grids and remote area power systems. Even the largest grid (Darwin to Katherine) is small compared to the rest of Australia. In addition, the lack of interconnection and limited opportunities for wind power or pumped hydro in the NT mean the state must rely on battery technology to balance its power supply in a renewable system. Nonetheless, the NT government could do much more to progress the Territory's energy transition.

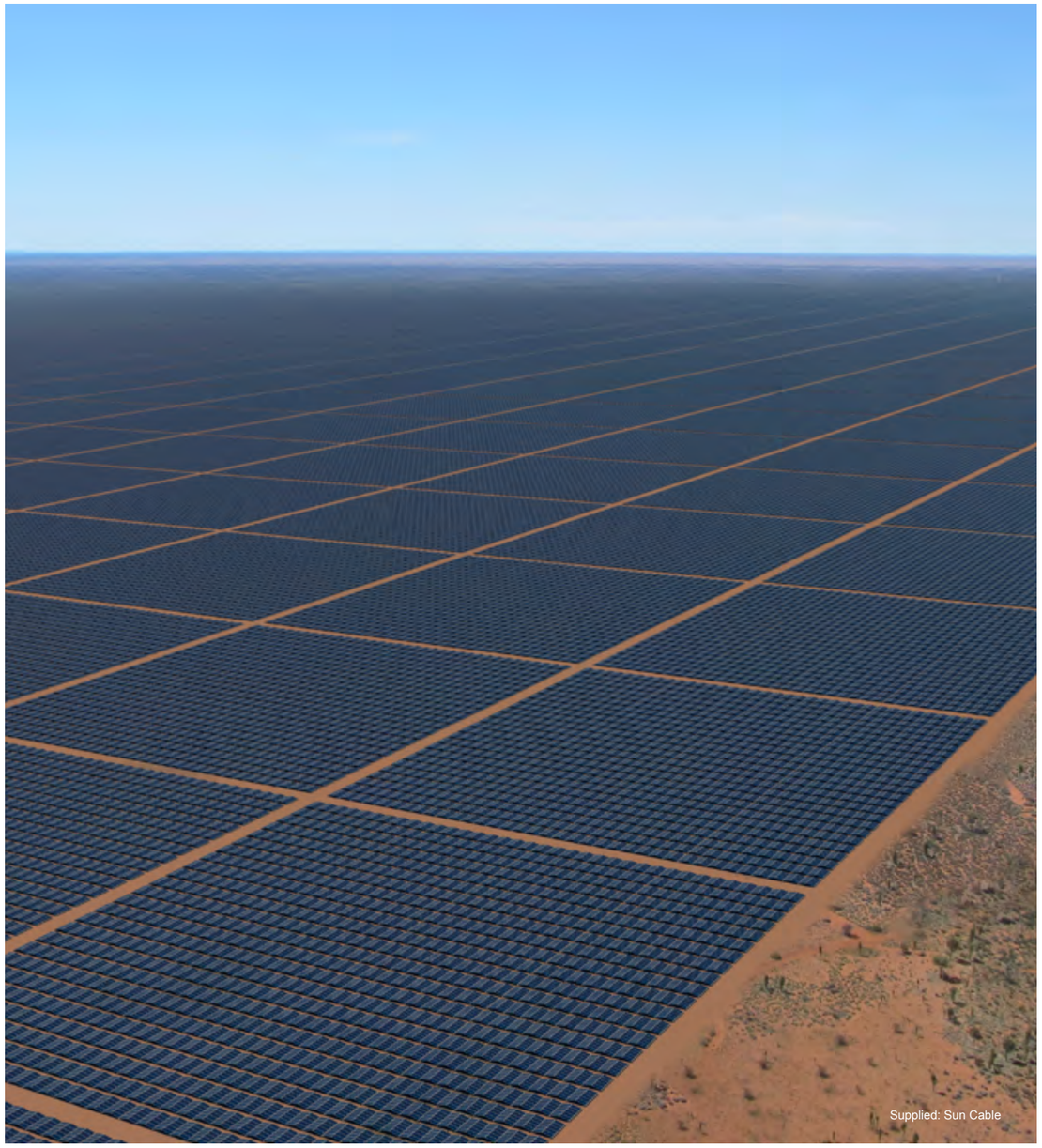
Shining Strengths!

- The Northern Territory Government has released a detailed plan to achieve its target of 50% renewables by 2030 in the territory's main grid. The Darwin-Katherine Electricity System Plan includes plans for a Renewable Energy Hub just outside Darwin, to provide firmed solar power to nearby manufacturing and heavy industry.
- NT's Hydrogen Masterplan includes strategies to stimulate local demand for renewable hydrogen to support the industry in its start-up phase and de-risk the establishment of a renewable hydrogen zone between Tennant Creek and Alice Springs, to bring together hydrogen manufacturers and end-users.
- The Northern Territory Government has signed a Milestone Agreement with Suncable to support the Australia-ASEAN Powerlink project, which has been expanded to include a manufacturing facility in Darwin to assemble solar arrays, and up to 20GW of generation capacity and 42GWh of battery storage.

How to Shine Brighter?

- The NT has been slow to remove the barriers that prevent renters in community housing from installing rooftop solar to slash their electricity bills. Around 10,000 Indigenous customers using pre-paid meters currently can't access rooftop solar.
- The federal and NT governments should work together to deliver the infrastructure that is needed to realise the NT's huge potential for renewable energy exports.

"The Territory is on the cusp of a once in a generation opportunity to transition to a greener, lower cost, power system and we are well placed to realise this vision by 2030." NT Minister for Renewables and Energy, Eva Lawler, October 2021



Supplied: Sun Cable

Australian Government Scorecard

Ranking 8 **Score 33**

CATEGORY LEADER Renewable Export Industry Strategy.

CHANGE SINCE LAST SCORECARD: -1 POINT

Category	Score	The Goal
Strong Renewable Energy Targets & Policies	1	15
Rolling out Renewable Energy	4	10
Renewable Energy Zones & Transmission	5	10
Renewable Energy Industrial Precincts	2	5
Developing a Renewable Hydrogen Industry	3	10
Ensuring Equitable Benefits	3	15
Renewable Export Industry Strategy	6	10
Energy Storage and Balancing the Grid	5	10
Growing Demand for Renewable Energy & Exports	3	10
2021 Special Category - Renewable Recovery	1	5

Forecast Shining Bright ☀ Getting There ◐ Must Shine Brighter ●

Shining Strengths!

- The updated Low-Emissions Technology Roadmap sets an ambitious target to improve solar efficiency to 30% and reduce the cost of solar modules to 30 cents a watt by 2030.
- In September, Australia announced a new $2bn billion loan facility for Australian critical minerals projects, to help expand Australia's exports of minerals essential for renewable energy technologies like batteries for electric vehicles.
- The government has signed international partnership agreements with several of Australia's major trading partners to collaborate on developing low emissions technologies including renewable hydrogen and green steel and aluminium.
- The federal government increased its funding for new hydrogen hubs to $464m, which will support the development of up to seven hydrogen hubs around the country.

How to Shine Brighter?

- The federal governments Renewable Energy Target policy achieved its aim of 33,000GWh of renewable electricity by 2020 and has not been replaced or updated. As a result, the Australian Government currently has no target for the expansion of renewable energy generation by 2030 or beyond.
- Most federal government programs that support renewable energy technologies also include support for carbon capture and storage and hydrogen made from fossil fuels. Changing the mandates for ARENA and the CEFC to include financial assistance for CCS comes at the expense of funding for genuine renewable export industries, and extends the life of fossil fuel industries.
- The Australian Government, unlike many other countries, did not announce an expansion of its support for domestic renewables, electrification and new renewable export industries during the Climate Change Conference of the Parties in Glasgow.

"Australia will be a world leader - mining and processing rare earths and minerals such as nickel and copper, it'll boom in order to supply clean energy and new technologies the world over."

Prime Minister Scott Morrison, October 2021

Custom Denning have kickstarted the production of four electric buses © WWF-Aus

Australian Capital Territory Government Profile

CATEGORY LEADER Strong renewable energy targets and policies; Rolling out renewable energy; Growing demand for renewable energy and exports.

Category	Score	The Goal
Strong Renewable Energy Targets & Policies	13	15
Rolling out Renewable Energy	7	10
Ensuring Equitable Benefits	6	15
Energy Storage and Balancing the Grid	4	10
Growing Demand for Renewable Energy & Exports	6	10
2021 Special Category - Renewable Recovery	3	5

Forecast Shining Bright ☀ Getting There ◐ Must Shine Brighter ●

The ACT has some of the country's most ambitious and successful renewable energy policies. However for many of the scorecard categories, the ACT cannot be subject to the same measures as other states and territories due to its unique situation as Australia's smallest, and only landlocked, jurisdiction. For this reason, the ACT has only been assessed on selected categories, and thus is not ranked against other jurisdictions in the national Superpower Scorecard.

For other categories, where it is possible to score the ACT in the same way as other governments, these scores are presented below. For further explanation, please refer to the *Behind the Renewable Superpower Scorecard technical report*.

Shining Strengths!

- The ACT Government is leading the way in accelerating the switch from oil and gas to renewable electricity and zero-emissions fuels for transport, buildings and industry. For example, the ACT recently announced new incentives for the purchase of zero-emissions vehicles without introducing a road-user charge.
- The ACT's renewable energy target of 100% includes a mechanism to increase the supply of renewable electricity as demand grows and more sectors decarbonise. This means their effective target is around 200% renewable energy.
- The Canberra Big Battery, being developed by the ACT government, is one of the first 'big battery' projects in Australia that will consist of a distributed network of smaller battery systems installed throughout the city. The project aims to establish a coordinated network of 250MW of battery storage.

How to Shine Brighter?

- The ACT prides itself on being a knowledge economy and the government is encouraging innovation and entrepreneurship in the renewable energy sector through grants to projects like the ACT Renewables Hub. However, there is an opportunity to scale up this vision by developing a strategy to export the ACT's clean energy technology and expertise to the world.

"The global battery storage market is predicted to be worth $400 billion by 2030, and the high interest in the ACT's proposed battery system will ensure that the nation's capital remains at the forefront of a booming industry – supporting new jobs in emerging industries."

ACT Chief Minister and Minister for Climate Action Andrew Barr, June 2021

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