

# RENEWABLE SUPERPOWER SCORECARD 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.

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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# SUMMARY

Australia has long been a resource powerhouse. Now we have the potential to become a zero-carbon energy powerhouse. However, for Australia to seize 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 scorecard is the first such ranking of Australia's states and territories. It evaluates 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.

Information is correct as of February 2021.

## KEY FINDINGS

### THE RESULTS OF THE SUPERPOWER SCORECARD ASSESSMENT SHOW:

-  **#1** The race to become a renewable superpower is close - neck and neck - but there are more opportunities ahead, and real urgency to move fast.

 **#6** Most jurisdictions are taking action to support the renewable hydrogen industry, recognising the huge potential of this versatile renewable fuel and feedstock.
-  **#2** Governments in Australia invested a total of over \$7 billion in clean energy stimulus measures in 2020. Although significant, it's a fraction of what has been spent in other countries.

 **#7** No jurisdiction is doing well when it comes to sharing the benefits of the energy transition. This is one area that needs substantial attention from all governments.
-  **#3** Most jurisdictions are making solid progress on rolling out renewables, and tracking towards state and territory targets for domestic electricity - but exponential growth is needed to reach 700% renewables by 2050.

 **#8** The full range of potential renewable export products are not yet receiving significant government support, apart from renewable hydrogen. There are ample opportunities for governments to think more broadly and get behind a range of renewable products and industries.
-  **#4** In 2020 two jurisdictions achieved 100% status. However, looking forward only two jurisdictions - South Australia and Tasmania - are thinking beyond 100% renewables. In fact, most are still stuck with targets of 50% renewables by 2030, or less.

 **#9** Exciting, nation-leading initiatives are underway across the country, but most are still in their infancy, and need to be adopted more widely and scaled up quickly.
-  **#5** Governments of all political persuasions are embracing renewables and bipartisan support for renewable energy policies is becoming more common.

# INTRODUCTION

Australia has some of the best renewable energy resources in the world, and right now we have our best ever opportunity to harness them for national and global good.

Our nation is famous for its endless sunshine, generous landmass, powerful winds, world-class expertise and strong alliances and trade relationships. Combining these attributes to join the global shift to a low carbon future should be a no-brainer. Australia is perfectly poised to take the lead as a renewable energy export powerhouse.

Australia can produce enough clean and affordable energy to power our entire nation, and have plenty leftover to sell to our neighbours.

Many debates have positioned this as a choice between having a healthy environment and a healthy economy. As a renewable energy export powerhouse, Australia would have both. We could boost our economy, create tens of thousands of new clean energy jobs and lower our domestic carbon pollution, improving the environment for all.

And we've got game in this space. Australians invented wi-fi, and EFTPOS, technology that is now used all over the world. The modern solar cell was invented by an Aussie, and today Australia has one of the highest rates of household solar in the world - with one in five households having solar on their roofs. Aussie companies - large and small, and run by people like you and me - are leading the way in clean energy solutions through the development of grids, batteries and electric vehicles. Australia has the technical expertise and solutions to become a clean energy superpower.

Despite the twin disasters of the coronavirus pandemic and global recession, Australia made **EXCITING PROGRESS** in 2020. For example:

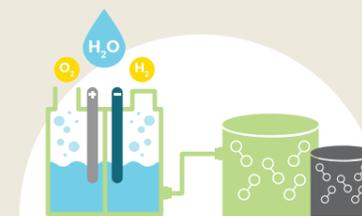
- **NSW** legislated the biggest **renewable energy commitment** by an Australian government in over a decade, pledging to build 12 gigawatts (GW) of renewables and 2 GW of storage by 2030;
- **Tasmania** set its sights on becoming a major renewable energy exporter, by **legislating a target of 200%** renewable energy by 2040;
- **South Australia's Climate Action Plan** put forward a vision to see that state produce 500% renewable energy by 2050;
- **Queensland appointed** the first Minister for Renewables and Hydrogen, and **pledged \$500 million** for state-owned renewables;
- the **federal** government's **Technology Investment Roadmap** identified clean hydrogen, energy storage, and low carbon steel and aluminium as three priority areas that offer huge export opportunities for Australia;
- governments around Australia invested over \$7 billion in clean energy initiatives as part of their COVID-19 recovery stimulus measures, creating vital jobs in regional Australia; and
- the **share of renewables in the National Electricity Market** exceeded 30% for the first time, with a record 7 GW of new renewable capacity installed throughout Australia.

The 2021 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.

<sup>1</sup> Unfortunately, the Technology Investment Roadmap still includes both renewables and fossil-gas within its definition of clean hydrogen and low carbon commodities, an approach that is not supported by WWF.

## 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 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.

Australia has long been a resource powerhouse. Now we have the potential to become a zero-carbon energy 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.



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

1. Develop a costed Renewable Exports Industry Strategy for their jurisdictions.
2. Accelerate the rollout of renewable energy and make it central to economic recovery plans, to create a zero-carbon future and a safer climate for all.
3. Deliver the infrastructure, policies and incentives required to establish new clean manufacturing and renewable export industries.
4. Ensure First Nations rights are respected, and workers, regional communities and low-income earners are supported through the transition to a zero-carbon Australia.

### 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, which equates to approximately 1,100 GW of wind and solar generation and storage capacity. Reaching this target of 700% renewables by 2050 would enable us to:

- meet Australia's current electricity demand;
- switch Australia's current transport, industry and building 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 ammonia.

In 2019, Darren Miller, CEO of the Australian Renewable Energy Agency (ARENA), was the first person to [publicly raise the concept of 700% renewables for Australia](#), saying this achievable goal would deliver a similar amount of energy to what we currently export through Australia's LNG industry. WWF-Australia believes that Australia should be aiming for a renewable industry at least as big as our LNG industry, if not bigger. Indeed, our analysis shows that if we move to 700% renewables and storage, and invest in associated upstream and downstream manufacturing, we can more than replace all the jobs in and the majority of the revenue from from Australia's current fossil fuel export industries.

### 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

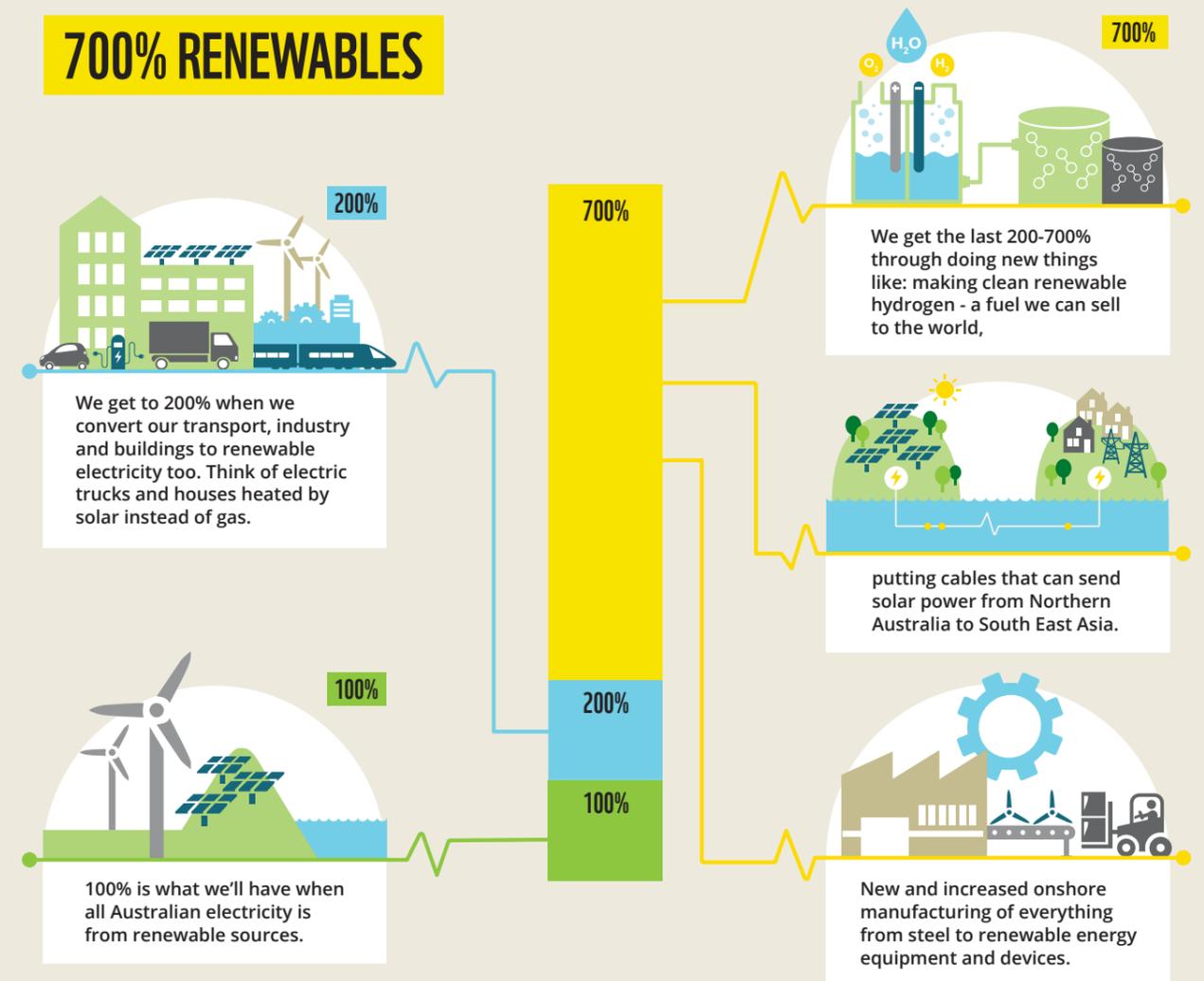
Some of our electricity already comes from renewable sources, but we need to make 100% of our electricity renewable and we need to replace those other types of energy with renewable electricity too.



#### 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



# 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.



For the first time, this 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 will update this scorecard in the lead-up to the UN Framework Convention on Climate Change Conference of the Parties (COP26), scheduled to take place in Glasgow in November and 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 below). Each category contains one to three indicators (20 in total) against which the governments are scored. 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 February 2021.

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

| Category   | Why it matters   | Points            |
|--|--|-------------------|
|  <b>Strong Renewable Energy Targets</b>                     | By setting firm targets and a timeline to reach 100% renewables for domestic electricity - and then go beyond that to 700% renewables by 2050 - governments can position Australia to be a major global user and exporter of renewables.   | 15                |
|  <b>Rolling out Renewable Energy</b>                        | 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.   | 10                |
|  <b>Renewable Energy Zones &amp; Transmission</b>           | Renewable Energy Zones (REZ) are the best way to develop a cluster of new clean energy projects in a region. New or upgraded electricity transmission lines are essential to transport the renewable energy to where it's needed.  | 10                |
|  <b>Energy Storage &amp; Balancing the Grid</b>             | 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                |
|  <b>Developing a Renewable Hydrogen Industry</b>           | 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                |
|  <b>Sharing the Benefits of the Energy Transition</b>     | People on low incomes must always be able to access affordable green power. Workers and communities must benefit from the transition. First Nations should play a key role in any renewable energy projects on their country and share in the benefits they bring.   | 15                |
|  <b>Renewable Export Industry Strategy</b>                | Australia needs a comprehensive strategy to develop a range of renewable export industries and to 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                |
|  <b>Renewable Energy Industrial Precincts</b>             | 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                 |
|  <b>Growing Demand for Renewable Energy &amp; Exports</b> | 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                |
|  <b>2021 Special Category - Renewable Recovery</b>        | 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 the economy on a stronger footing for the future.   | 5                 |
| <b>Maximum score</b>   |  | <b>Points 100</b> |

## 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 renewables and renewable-powered products to the world.

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

The task of electrifying transport and industry - to move away from oil and gas - is still in its infancy, but the lower cost of renewable alternatives is driving competition in this area, so change could happen exponentially.

Many governments have seen the opportunity and started to get behind renewable export industries, but actions tend to be narrowly focussed (e.g. renewable hydrogen) or not of sufficient scale (e.g. individual project grants).

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 example, the [Asian Renewable Energy Hub](#) proposed for north-west WA and the [Australia-ASEAN Power Link](#) planned for the NT are among the largest renewable export projects in the world. However, while the WA and NT governments and the federal government have granted these mega-projects “major projects status”, they have provided no direct government support.

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 38. For further explanation, please refer to the Behind the Renewable Superpower Scorecard technical report, linked below.

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 sources of carbon pollution.

For many categories, to ensure a level playing field we have compared the jurisdiction’s financial investment or total capacity of renewables against its total population or gross state product (GSP), as appropriate. 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 the superpower scorecard and WWF’s renewable export policies see:**

[Behind the WWF Renewable Superpower Scorecard](#) - WWF Technical Report

[Making Australia a Renewable Export Powerhouse](#) - WWF Policy Paper

[Energising the Economy with Renewable Hydrogen](#) - WWF Policy Paper

[Australian Renewable Export COVID-19 Recovery Package](#) - WWF Policy Paper

[Renewable Energy Industrial Precincts](#) - WWF and BZE Policy Paper

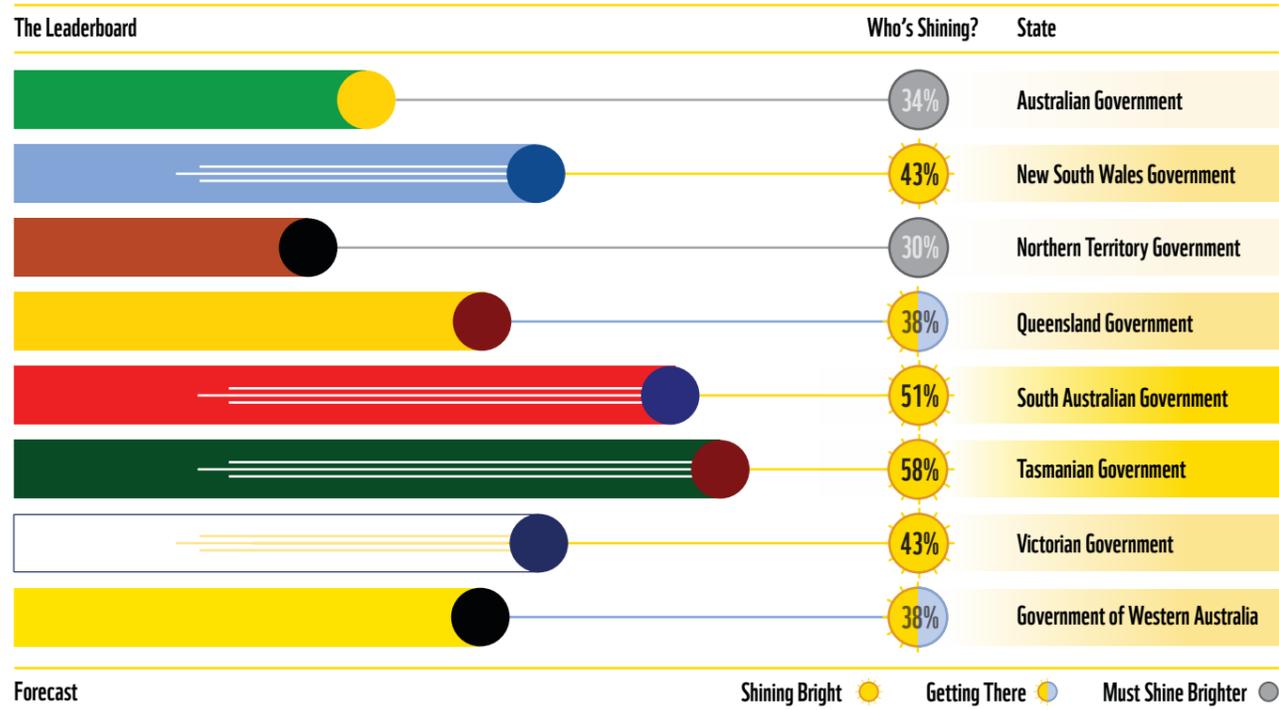


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# RENEWABLE SUPERPOWER SCORECARD



## Which Government is leading the way in the renewables race?



## Category Leaders

| Category  | Leader           | The leading moves ...   |
|---|------------------|---|
| Strong Renewable Energy Targets                 | TAS              | Tasmania has legislated its world-leading renewable energy target of 200% by 2040.  |
| Rolling out Renewable Energy                    | TAS              | New wind farms in Tasmania took the state to 100% renewable electricity in 2020. The ACT also reached this milestone, but deployed fewer new renewables in the past two years per capita.   |
| Renewable Energy Zones & Transmission           | NSW              | New South Wales has a clear, well-funded plan to develop Renewable Energy Zones and improve its transmission system.  |
| Energy Storage & Balancing the Grid             | SA               | South Australia has undertaken a multi-pronged approach to energy storage and grid balancing from home batteries, to Australia's first big battery, demand management and more.   |
| Developing a Renewable Hydrogen Industry        | TAS              | Tasmania's renewable hydrogen strategy is backed by a \$50 million investment, more per capita than any other state or territory.   |
| Sharing the Benefits of the Energy Transition   | VIC              | Victoria has good programs to assist low-income households to cut bills and access solar energy, as well as concrete initiatives to support coal-dependent regions through the energy transition.   |
| Renewable Export Industry Strategy              | WA & NT          | WA and the NT are both starting to grasp the opportunity of their proximity to Southeast Asia. The NT is pursuing renewable export opportunities through its economic recovery plan. WA has plans to export battery minerals, microgrid technology and green ammonia. |
| Renewable Energy Industrial Precincts           | SA, WA & TAS     | SA, WA and Tasmania have all begun developing renewable-powered industrial precincts.   |
| Growing Demand for Renewable Energy and Exports | ACT <sup>2</sup> | The ACT has the country's most advanced strategy to phase out natural gas in buildings and industry and to encourage electric vehicles.   |
| 2021 Special Category - Renewable Recovery      | VIC & ACT        | Victoria and the ACT both made clean energy central to their economic recovery strategies, creating thousands of sustainable new jobs.  |

<sup>2</sup> 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](#).

- #1** **Tasmania** is the overall leader, achieving 100% renewables status, legislating the largest renewables target in the world and punching above its weight to grow a renewable hydrogen industry.
- #2** **South Australia** has been a leader in renewable energy for many years and is starting to build the foundations for renewable export industries.
- #3** **Victoria** is making good progress in rolling out renewables and released an impressive renewable recovery package in response to the impacts of the COVID-19 pandemic, however now needs to set its sights on export opportunities.
- #3** **New South Wales** has made significant policy progress in the past two years, pioneering REZs and legislating a huge 12 GW renewable program by 2030. However, these plans need time to translate into real-world action.

- #5** **Queensland** and **Western Australia** are both taking solid action on renewables, but neither of their programs are keeping up with the other states, nor are they commensurate with the scale of both jurisdictions' huge opportunities to become globally significant renewable exporters.
- #7** The **Australian Government** has a breadth of programs that support the growth of renewable energy, a fact that may surprise some. These include the Modern Manufacturing Initiative; ARENA and the Clean Energy Finance Corporation (CEFC); the Hydrogen Strategy and more. However, the focus and scale of action at the national level does not yet reflect the fact that Australia's best chance for economic prosperity in the next 30 years is to embrace a renewable future.
- #8** The **Northern Territory** has started to deliver some significant renewables programs, including supporting the world's largest solar project. However, it is lagging behind the rest of the country in terms of the domestic transition to renewables. The unique challenges faced in the Northern Territory only partly explain its lower score.

## Australia is still at an early stage of the journey to 700% renewables

Given the strong progress many governments have made recently in rolling out new renewable energy, it may seem surprising that no jurisdiction has scored above 58% in this year's superpower scorecard. There's good reason for that:

- the scorecard assesses all three essential stages at once: cleaning up the electricity system; electrifying transport and industry; and exporting renewables to the world; and
- the scorecard deliberately sets the bar high - at a level that reflects what's really required to position Australia as the world's leading renewable energy exporter by 2030.

At current rates of construction, it will be over a decade before Australia reaches 100% renewable electricity and on top of this, we also need to electrify transport and industry and produce enough renewable

power to export to the world. In other words, unless we dramatically speed up the deployment of new renewable energy projects, Australia will be out-competed by other nations that are moving to grab market share in the global trade in renewable energy and renewable-powered commodities.

Currently, Australia is deploying renewables at **10 times the global average** per capita, which is a big achievement. But the [World Resources Institute](#) has found that in order to have any hope of keeping global heating to 1.5 degrees Celsius, the rate of renewables deployment globally needs to increase six times over the next decade. To meet 700% renewables by 2050, WWF-Australia projects that Australia needs to increase its rate of renewables deployment by six times over the next thirty years.

Transforming our energy system and establishing Australia as the world's leading renewable energy exporter is no small task, but the rewards will be great - for our economy, our environment and our children's futures.

# WHAT THE SCORECARD TELLS US

**KEY FINDING #1** The race to become a renewable superpower is close - neck and neck - but there are more opportunities ahead, and real urgency to move fast. If you're not out front, you're being left behind.

**KEY FINDING #2** Governments in Australia invested a total of over \$7 billion in clean energy stimulus measures. Although significant, it's a fraction of what has been spent in other countries. See Figure 1.

**KEY FINDING #3** Most jurisdictions are making solid progress on rolling out renewables, and tracking towards state and territory targets for domestic electricity - but exponential growth is needed to reach 700% renewables by 2050.

**KEY FINDING #4** In 2020 two jurisdictions achieved 100% status. However, looking forward only two jurisdictions - South Australia and Tasmania - are thinking beyond 100% renewables. In fact, most are still stuck with targets of 50% renewables by 2030, or less. See Figure 2.

**KEY FINDING #5** Governments of all political persuasions are embracing renewables and bipartisan support for renewable energy policies is becoming more common.

**KEY FINDING #6** Most jurisdictions are taking action to support the renewable hydrogen industry, recognising the huge potential of this versatile renewable fuel and feedstock.

**KEY FINDING #7** No jurisdiction is doing well when it comes to sharing the benefits of the energy transition. This is one area that needs substantial attention from all governments - see box on right.

**KEY FINDING #8** The full range of potential renewable export products are not yet receiving significant government support, apart from renewable hydrogen. There are ample opportunities for governments to think more broadly and get behind a range of renewable products and industries.

**KEY FINDING #9** Exciting, nation-leading initiatives are underway across the country, but most are still in their infancy, and need to be adopted more widely and scaled up quickly.

## Sharing the benefits of the energy transition

One of the [United Nations' Sustainable Development Goals](#) is to "ensure access to affordable, reliable, sustainable and modern energy for all". In Australia, the economics of our electricity system are changing rapidly now that renewable energy has become the [cheapest source of new electricity](#). As we make this transition we need to ensure that no one is left behind, and the benefits are shared equitably.

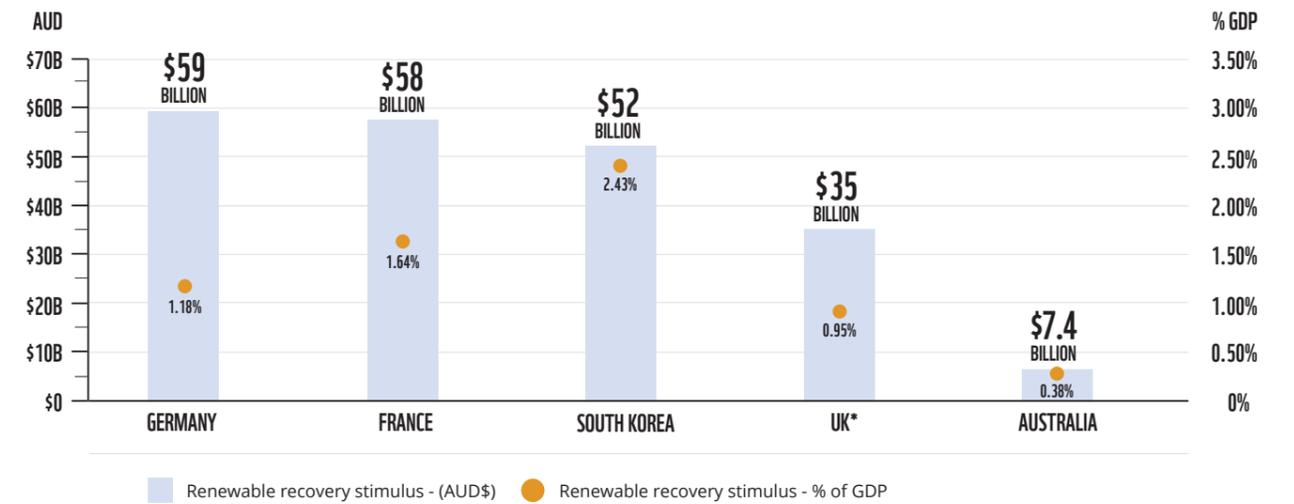
Unfortunately, the results of the Superpower Scorecard show that governments across Australia are not doing nearly enough to ensure the following three target groups are not disadvantaged during the energy transition, and share in the benefits of a clean energy future:

- a) First Nations communities and traditional landowners;
- b) Energy industry workers and regional communities;
- c) Energy consumers, particularly low-income households.



Nonetheless, it's possible to find positive examples of government action to ensure a fairer energy transition, for example: the [Bushlight program](#) in the NT; the [LaTrobe Valley Authority](#) in Victoria and the WA government's [\\$6 million program](#) to install solar on public housing. By adopting more policies like these, governments have a once-in-a-generation opportunity to create an electricity system that is far more fair and affordable than the old polluting system we're leaving behind.

## Renewable recovery spending - international comparison (\$AUD)

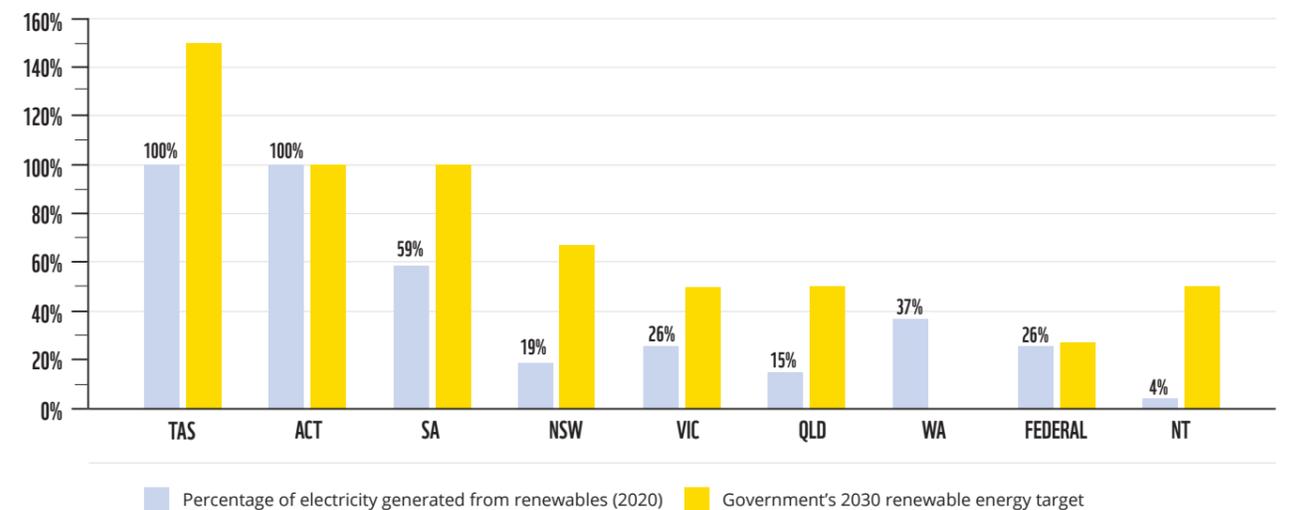


**Figure 1.** The total amount spent by all Australian governments, compared to national government spending in other countries, in Australian dollars. Based on analysis by [Hepburn and O'Callaghan 2020](#) and WWF research.

For further details see [Technical Report](#).

\*UK excludes CCS and training

## Percentage of electricity generation from renewables in 2020 vs government targets for 2030



**Figure 2.** This comparison shows that most governments are making progress in rolling out renewables, but still have a way to go to reach their 2030 renewable energy targets. Tasmania is the first government to set a target greater than 100% by 2030 while WA is the only jurisdiction that has no target for 2030.

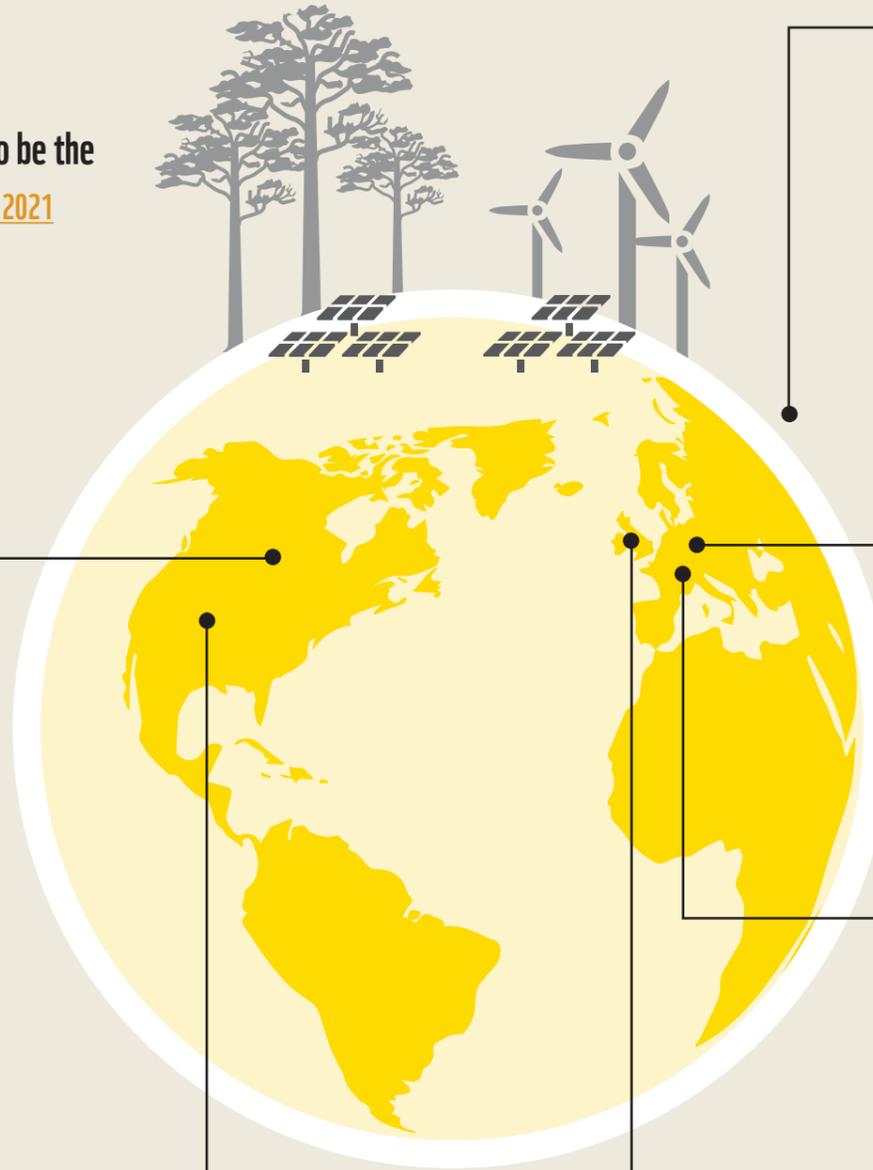
For further details see [Technical Report](#).

# LEADING EXAMPLES FROM AROUND THE WORLD

“Australia, with characteristic luck, is sitting on everything it needs to be the world leader, but only if it acts fast.” [Andrew Forrest, Boyer Lecture, January 2021](#)

Across the globe, nations are jostling to seize the advantage in emerging international markets for renewable energy products and services.

Renewable energy technologies such as solar and wind are critical to decarbonising more than two-thirds of global emissions in the electricity, transport, building and industrial sectors. As the world moves to act on climate change and fulfil the promise of the Paris Climate Agreement, countries like Australia, which has the best renewable resources in the world, have a significant competitive advantage. But, as these examples illustrate, we need to move fast to keep up with other world-leaders.



## Just Transition Task Force



Canada

In response to calls from its [Just Transition Task Force](#) the Canadian Government has invested \$300 million over five years to ensure that rural, remote and Indigenous communities that rely on diesel have the opportunity to be powered by clean energy by 2030. The new Canada Coal Transition Initiative is a \$35 million fund that supports skills development and economic diversification in Canada's coal regions. The Canadian Government has also promised a \$150 million infrastructure fund, to support priority projects and economic diversification in impacted communities.

## Leading the electric vehicle race



United States

The [US auto industry](#) will be positioned to become a world leader across the electric vehicle supply chain under President Joe Biden's US\$2 trillion accelerated investment plan. Biden's plan aims to: create 1 million new jobs in the auto industry; roll out 500,000 electric vehicle charging stations; accelerate battery technology and domestic production capability; improve emissions standards and have all new American-built busses be zero-emission by 2030.

## Green New Deal



South Korea

South Korea's Covid-19 stimulus package includes AU\$48B towards the country's '[Green New Deal](#)' that aims to create 659,000 jobs through a series of initiatives including:

- Turning public facilities into zero-energy buildings;
- Building a smart grid for more efficient energy management;
- Expanding the supply of electric and hydrogen vehicles; and
- Establishing low-carbon and green industrial complexes.

## Windy state heading for 300% renewables



Germany

The German state of Schleswig-Holstein has a population of almost 3 million people and is home to 10 percent of Germany's renewable generation capacity. In 2017 [Schleswig-Holstein](#) reached 156.5 per cent renewables and is now aiming for 300 percent by 2030. The state has some solar power and biomass generation but the majority of its renewable power comes from wind farms in the flat, windy parts of the state. What's more, most of the wind farms are [part-owned by local communities](#).

## Multi-billion euro Hydrogen Strategy



Europe

[The European Union's hydrogen strategy](#) - released as part of its Green Deal - aims to install at least 6 GW of renewable hydrogen electrolyzers by 2024 and at least 40 GW of renewable electrolyzers by 2030 to support industrial and mobility applications. (link) The EU has committed budget funding of €503 billion to support the Green Deal and subsequently the EU hydrogen strategy. This will unlock private and public investment and be supported by the [InvestEU](#) Guarantee and other policy mechanisms.

## United Kingdom: Ten Point Plan to create 250,000 green jobs



United Kingdom

In November 2020 the United Kingdom's Prime Minister Boris Johnson released a [Ten Point Plan for a Green Industrial Revolution](#). The plan aims to create 250,000 green jobs and is backed with a £5 billion investment. The plan includes ending sales of new petrol and diesel cars and vans by 2030; producing enough offshore wind energy to power every home; and research projects to develop zero-emission planes and ships.<sup>3</sup>

<sup>3</sup> Note the UK's Ten Point Plan also includes plans for new nuclear reactors and carbon capture and storage, which WWF does not support for Australia.



# INDIVIDUAL GOVERNMENT RESULTS

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# Tasmanian Government Scorecard

Ranking **1**

Score **58%**

**CATEGORY LEADER** Strong Renewable Energy Targets; Rolling Out Renewable Energy; Developing a Renewable Hydrogen Industry; Renewable Energy Industrial Precincts.

| Category                                      | What's Shining? | The Goal |                  |
|---|-----------------|----------|------------------|
| Strong Renewable Energy Targets               | 11              | 15       | 4 More to Shine  |
| Rolling out Renewable Energy                  | 8               | 10       | 2 More to Shine  |
| Renewable Energy Zones & Transmission         | 8               | 10       | 2 More to Shine  |
| Energy Storage and Balancing the Grid         | 8               | 10       | 2 More to Shine  |
| Developing a Renewable Hydrogen Industry      | 9               | 10       | 1 More to Shine  |
| Sharing the Benefits of the Energy Transition | 3               | 15       | 12 More to Shine |
| Renewable Export Industry Strategy            | 3               | 10       | 7 More to Shine  |
| Renewable Energy Industrial Precincts         | 3               | 5        | 2 More to Shine  |
| Growing Demand for Renewable Energy & Exports | 4               | 10       | 6 More to Shine  |
| 2021 Special Category - Renewable Recovery    | 1               | 5        | 4 More to Shine  |

Forecast      Shining Bright      Getting There      Must Shine Brighter

## Shining Strengths!



The first Australian state to generate 100% of its electricity from renewable energy<sup>4</sup>.

- Late last year Tasmania became the first Australian state to generate 100% of its electricity from renewable energy. For many decades Tasmania has drawn the majority of its power from hydro-electricity, and now, with the addition of several large wind farms, the state can generate more renewable energy than it consumes.
- Tasmania has adopted a world-leading target of 200% renewable energy by 2040. And to prove they mean business, the target is enshrined in **legislation** that requires an annual progress report to Parliament.
- The **Tasmanian Renewable Hydrogen Action Plan** has a vision for the island state to become a world leader in large-scale renewable hydrogen production for domestic use and export. This is backed by a high level of government investment in the industry.

## How to Shine Brighter?



Tasmania could do even more to capitalise on its 100% renewable energy.

- Tasmania could do even more to capitalise on its 100% renewable energy status by: attracting energy-hungry industries keen to go green; replacing petrol-powered transport with electric vehicles powered by renewables; and reaching out to establish world markets for renewable exports.
- The **Bell Bay Advanced Manufacturing Zone** already runs on 100% renewable electricity, but the state government could do more to support manufacturers in the zone to switch from fossil gas to green electricity for heat and other industrial processes to make Bell Bay a fully-fledged Renewable Energy Industrial Precinct.

<sup>4</sup> 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.

“It is now time to showcase our innovation to the world and stake our claim as a renewables powerhouse.”

Tasmanian Premier Peter Gutwein, March 2020



Supplied: Bell Bay Advanced Manufacturing Zone

Kempe Engineering Branch Manager Roger Aalbrecht sees self-sufficiency as integral to business.

## Bell Bay manufacturers are helping take Tassie to 200% renewables

Tasmania's 100% renewable status gives businesses in the **Bell Bay Advanced Manufacturing Zone** a global advantage since their products have a much lower carbon footprint than most competitors.

On top of this, many businesses in the zone are helping Tasmania move towards its target of 200% renewable energy by installing rooftop solar and making renewable energy central to their plans for growth.

The Kempe Engineering plant has installed a 120 KW solar system, saving the business around \$35,000 a year. Branch Manager Roger Aalbrecht sees their commitment as an important part of the widespread shift towards renewables in the industrial sector.

“Kempe is virtually 100% self-sufficient for its power usage,” he said. “We saw this as an integral part of ... supporting

our business partners with their downstream processing operations for 100% renewable operating targets.”



Supplied: Bell Bay Advanced Manufacturing Zone



# South Australian Government Scorecard

Ranking **2**

Score **51%**

**CATEGORY LEADER** Energy Storage and Balancing the Grid; Renewable Energy Industrial Precincts.

| Category                                      | What's Shining? | The Goal            |
|---|-----------------|---------------------|
| Strong Renewable Energy Targets               | 9               | 15 6 More to Shine  |
| Rolling out Renewable Energy                  | 6               | 10 4 More to Shine  |
| Renewable Energy Zones & Transmission         | 7               | 10 3 More to Shine  |
| Energy Storage and Balancing the Grid         | 9               | 10 1 More to Shine  |
| Developing a Renewable Hydrogen Industry      | 5               | 10 5 More to Shine  |
| Sharing the Benefits of the Energy Transition | 4               | 15 11 More to Shine |
| Renewable Export Industry Strategy            | 3               | 10 7 More to Shine  |
| Renewable Energy Industrial Precincts         | 3               | 5 2 More to Shine   |
| Growing Demand for Renewable Energy & Exports | 4               | 10 6 More to Shine  |
| 2021 Special Category - Renewable Recovery    | 1               | 5 4 More to Shine   |

Forecast      Shining Bright      Getting There      Must Shine Brighter

## Shining Strengths!



### South Australia was the first state to adopt a Hydrogen Action Plan.

- For the first time, South Australia's [Climate Action Plan 2020](#) recognised the potential for the state to do much more than just supply its own electricity needs from renewables. The plan sets its sights on generating 500% of current local grid demand from renewable energy by 2050.
- The [100 MW big battery at Hornsdale](#), built by Tesla and Neoen, showed the way for clean energy storage in Australia. In addition, SA has a ground-breaking [home battery scheme](#) and [virtual power plant](#) that are turning ordinary homes into energy storage systems.
- South Australia was the first state to adopt a [Hydrogen Action Plan](#) and is now developing [three export hydrogen hubs](#) to position the state as a global leader in the industry.

## How to Shine Brighter?



### The 500% target discussed in SA's Climate Action Plan is yet to be formally adopted as a goal for the state.

- The 500% target discussed in SA's Climate Action Plan is yet to be formally adopted as a goal for the state. Showing a solid and legislated commitment to this vision would open new doors for South Australia.
- Despite the state's strong backing of renewable hydrogen, there's no clear strategy to extend this to other potential new renewable exports like electric batteries, specialist expertise, green steel or advanced manufacturing.

“South Australia’s transformation to a net zero emissions economy and a national and international exporter of clean energy could mean achieving a level of renewable energy that is more than 500% of current local grid demand by 2050.” [SA Climate Action Plan 2020](#)



Craig Johnston is proud to be powering a clean energy future for Australian homes.

## Government incentives spark battery manufacturing revolution

Thanks to state government incentive programs, the popularity of household batteries is surging in South Australia. This growing demand has enabled German company Sonnen to establish a domestic battery manufacturing plant in Adelaide, at the old Holden car factory that closed in 2017.

“I’m proud to be working in clean energy as Australia moves towards a future where more renewables power our electricity system,” he said. “I am part of a workforce that is building home batteries that will power a clean energy future for Australians.”

Craig Johnston worked for Holden for 25 years and has returned as the Operations Supervisor for sonnen Australia.



# New South Wales Government Scorecard

Ranking **3**

Score **43%**

## CATEGORY LEADER Renewable Energy Zones and Transmission

| Category                                      | What's Shining? | The Goal |                  |
|---|-----------------|----------|------------------|
| Strong Renewable Energy Targets               | 6               | 15       | 9 More to Shine  |
| Rolling out Renewable Energy                  | 3               | 10       | 7 More to Shine  |
| Renewable Energy Zones & Transmission         | 9               | 10       | 1 More to Shine  |
| Energy Storage and Balancing the Grid         | 4               | 10       | 6 More to Shine  |
| Developing a Renewable Hydrogen Industry      | 4               | 10       | 6 More to Shine  |
| Sharing the Benefits of the Energy Transition | 5               | 15       | 10 More to Shine |
| Renewable Export Industry Strategy            | 4               | 10       | 6 More to Shine  |
| Renewable Energy Industrial Precincts         | 2               | 5        | 3 More to Shine  |
| Growing Demand for Renewable Energy & Exports | 4               | 10       | 6 More to Shine  |
| 2021 Special Category - Renewable Recovery    | 2               | 5        | 3 More to Shine  |

Forecast Shining Bright  Getting There  Must Shine Brighter

### Shining Strengths!



#### The NSW Electricity Infrastructure Roadmap is the most ambitious energy transition plan announced so far.

- The NSW [Electricity Infrastructure Roadmap](#) is the most ambitious and comprehensive energy transition plan announced by any state or territory so far. The 10-year plan is backed by legislation and aims to enable construction of 12 GW of renewable energy generation plus 2 GW of energy storage by 2030.
- The NSW government's [plans to develop](#) Renewable Energy Zones (REZ) are moving ahead much faster than other jurisdictions. The Central West Orana REZ near Dubbo is [likely to be the first](#) in the country to become operational.
- A ground-breaking [study on decarbonising the economy](#) - commissioned by the NSW Government and completed by the state's Chief Scientist - highlights the potential for large-scale hydrogen production to create tens of thousands of new export jobs in places like Newcastle and Port Kembla.

### How to Shine Brighter?



#### NSW is yet to develop a renewables export strategy to capture the opportunities by the Chief Scientist.

- A missing piece in NSW's plans is the lack of Renewable Energy Industry Precincts that could harness the state's growing renewable energy supplies to provide cheaper power for local manufacturing industries.
- NSW has taken only small steps - like the [electrification of Sydney's bus fleet](#) - to grow demand for renewable energy and other potential export products.
- NSW is yet to develop a renewables export strategy to capture the opportunities identified by the Chief Scientist, like exporting green hydrogen, green steel and our renewable-energy expertise.

**“NSW has some of the best natural resources in the world and this roadmap is about acting now to leverage our competitive advantage and to position NSW as an energy superpower.”** [Energy Minister Matt Kean, November 2020](#)



Karin Stark and Jon Elder use solar power to run irrigation pumps on their property

### Renewable Energy Zone offers bright future for Central West NSW

The NSW Government is investing \$40 million to establish the state's first Renewable Energy Zone in the state's Central West.

Local farmers Karin Stark and Jon Elder already use solar power to run irrigation pumps on their property, and in an [interview with ABC News](#) Karin explained that hosting solar panels or wind farms would allow local farmers to diversify their income.

“This region has been through quite severe drought over the past two years, so if a farmer is able to host a

large-scale installation, that will provide a really important secondary income for them out of leasing that land, and local communities will benefit in terms of jobs and skills,” Ms Stark said.

She believes farming and renewables can work side-by-side. “Grazing can successfully happen between solar panels as it already does at many solar farms with benefits for the sheep such as shade in summer and protection from wind in winter.”



# Victorian Government Scorecard

Ranking **3**

Score **43%**

**CATEGORY LEADER** Sharing the Benefits of the Energy Transition; Renewable Recovery.

| Category                                      | What's Shining? | The Goal           |
|---|-----------------|--------------------|
| Strong Renewable Energy Targets               | 6               | 15 9 More to Shine |
| Rolling out Renewable Energy                  | 5               | 10 5 More to Shine |
| Renewable Energy Zones & Transmission         | 8               | 10 2 More to Shine |
| Energy Storage and Balancing the Grid         | 5               | 10 5 More to Shine |
| Developing a Renewable Hydrogen Industry      | 1               | 10 9 More to Shine |
| Sharing the Benefits of the Energy Transition | 8               | 15 7 More to Shine |
| Renewable Export Industry Strategy            | 3               | 10 7 More to Shine |
| Renewable Energy Industrial Precincts         | 0               | 5 5 More to Shine  |
| Growing Demand for Renewable Energy & Exports | 4               | 10 6 More to Shine |
| 2021 Special Category - Renewable Recovery    | 3               | 5 2 More to Shine  |

Forecast Shining Bright  Getting There  Must Shine Brighter

## Shining Strengths!



### COVID-19 recovery budget pledging \$1.6 billion for clean energy program.

- The Victorian Government put renewable energy and energy efficiency front and centre of the state's **COVID-19 recovery budget** pledging \$1.6 billion to create renewable energy zones across the state, improve crucial grid infrastructure, make Victoria's buildings and homes more energy efficient, drive down emissions and help more homes go solar.
- Victoria's Renewable Energy Target (VRET) is enshrined in legislation and supported by the **Renewable Energy Auction Scheme** for large-scale generation, plus the wildly popular **Solar Homes Program**. The VRET program has also helped grow the manufacture of renewable components, such as wind turbine blades, in Victoria.
- New transmission lines and upgrades that will connect renewable energy power stations to the grid are being accelerated thanks to the Victorian Government's decision to **break away from outdated national energy laws** that were slowing down the energy transition.

## How to Shine Brighter?

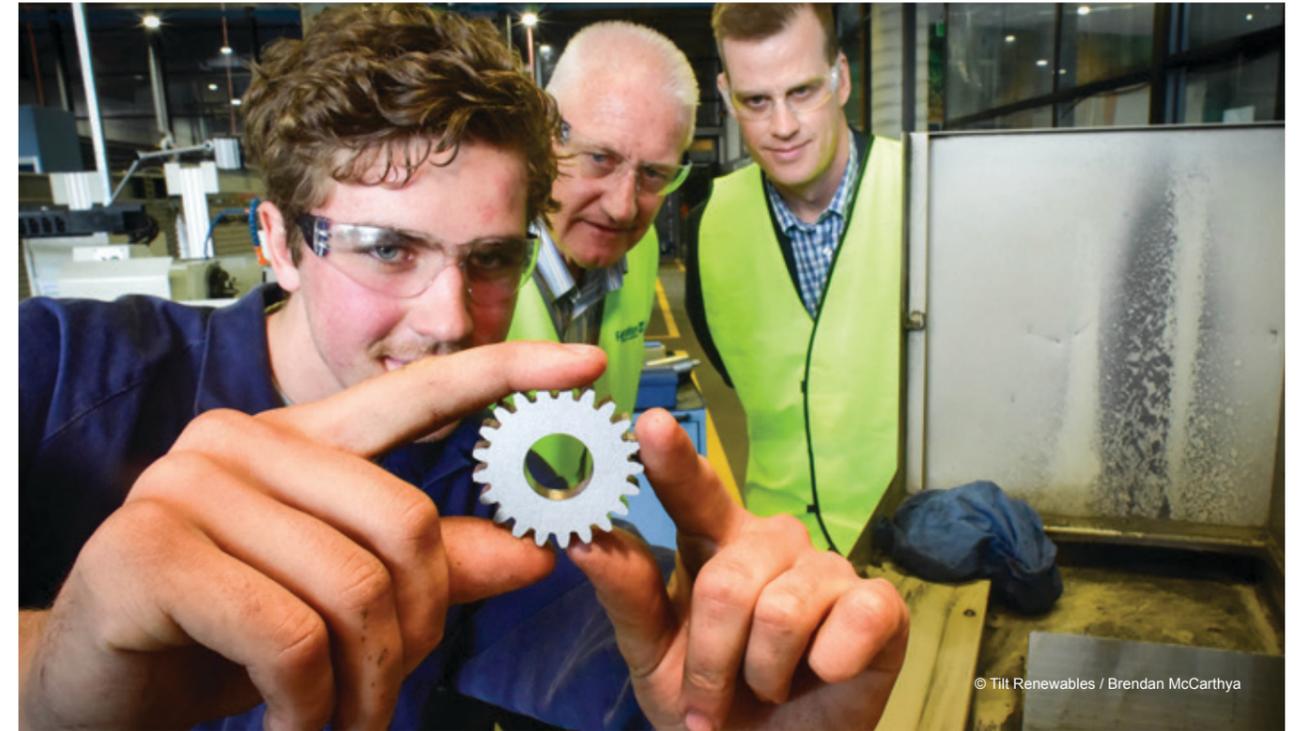


### The Victorian Government has a modest target of 50% renewable energy by 2030.

- The Victorian Government has a modest target of 50% renewable energy by 2030, and hasn't developed a vision or a plan for going beyond 100% to enable the state to establish renewables export industries and shift away from oil and gas for transport, heating and industry.
- Although it has great potential for manufacturing renewable export products, Victoria is missing the boat, since it hasn't begun planning any Renewable Energy Industrial Precincts.
- Victoria's plan to impose a **per-kilometre levy on electric vehicles** disincentivises the move to electric, renewable powered vehicles, at a time **when Australia already lags behind**. Victoria (and other states) should follow the lead of countries around the world and implement regulations and incentives to encourage the deployment of more electric vehicles.

## “Renewables will be at the heart of our COVID recovery.”

Victorian Energy Minister Lily D'Ambrosio, September 2020



© Tilt Renewables / Brendan McCarthy

A **scholarship for apprentices** wishing to enter the wind energy industry is just one of the initiatives supported by the Dundonnell Wind Farm community benefit package.

## Dundonnell Wind Farm shares the benefits with local community

It was local landholders who first had the idea of establishing a wind farm near the tiny town of Dundonnell, in western Victoria, and it's clear the community has been closely involved with the project from start to finish.

The wind farm's developers - Tilt Renewables - won the Clean Energy Council's **Community Engagement Award** in 2020 for an innovative community-benefit package that includes training, social and environmental programs.

Speaking at the **launch of the project**, in 2019, farmer and host landholder Will Lynch explained: “The Dundonnell Wind Farm is really important to all of us landholders as

it presents an opportunity to supplement our incomes for the next 25 years. But it's not just the landowners that are set to benefit. Construction brought jobs to locals and local suppliers as well as flow-on benefits to local businesses – from fencing contractors to the local pub.”

The 336 MW Dundonnell Wind Farm secured vital financial backing when it won a State Government support agreement through the first round of the Victorian Renewable Energy Auction Scheme. The wind farm subsequently secured further offtake agreements with Snowy Hydro and ALDI for the renewable energy from the project.



# Queensland Government Scorecard

Ranking **5**

Score **38%**

| Category                                      | What's Shining? | The Goal            |
|---|-----------------|---------------------|
| Strong Renewable Energy Targets               | 3               | 15 12 More to Shine |
| Rolling out Renewable Energy                  | 4               | 10 6 More to Shine  |
| Renewable Energy Zones & Transmission         | 7               | 10 3 More to Shine  |
| Energy Storage and Balancing the Grid         | 3               | 10 7 More to Shine  |
| Developing a Renewable Hydrogen Industry      | 5               | 10 5 More to Shine  |
| Sharing the Benefits of the Energy Transition | 6               | 15 9 More to Shine  |
| Renewable Export Industry Strategy            | 3               | 10 7 More to Shine  |
| Renewable Energy Industrial Precincts         | 2               | 5 3 More to Shine   |
| Growing Demand for Renewable Energy & Exports | 4               | 10 6 More to Shine  |
| 2021 Special Category - Renewable Recovery    | 1               | 5 4 More to Shine   |

Forecast: Shining Bright Getting There Must Shine Brighter

## Shining Strengths!



### Queensland has appointed the country's first Minister for Energy, Renewables and Hydrogen.

- Queensland has appointed the country's first Minister for Energy, Renewables and Hydrogen. The [Queensland Hydrogen Industry Strategy](#) focuses solely on renewable hydrogen and includes an industry development fund, hydrogen training programs, measures to develop overseas markets, and more.
- The [Queensland Renewable Energy Fund](#) provides \$500 million over three years for the state's three government-owned energy companies to invest in new renewable generation projects.
- The Queensland Government has [allocated \\$145 million](#) to establish three Renewable Energy Zones across the state. In addition, Queensland is supporting a new [Copperstring 2.0](#) high-voltage line in the state's north-west, which will open up opportunities for big new renewable energy projects.

## How to Shine Brighter?



### Could do much more to capitalise on its renewable energy ambitions.

- Unlike NSW, Victoria, Tasmania and the ACT, Queensland has never confirmed its renewable energy target in legislation. The state has no target beyond its current policy goal of 50% renewable energy by 2030, and much more ambition is required to build a strong renewables export industry.
- So far, Queensland has not made the level of investment in renewable energy storage that's needed as we transition away from fossil fuels. A notable exception is the funding contributed to the [Kidston pumped-hydro project](#) in the far-north.
- Queensland has all the ingredients required to produce and export a range of renewable exports, like ammonia, batteries, aluminium and even green steel. Although the state government is getting behind renewable hydrogen, it lacks a clear strategy to develop other new exports.

“In the Sixties it was the Space Race, this century it’s all about energy. Queensland is at the forefront of hydrogen development and we aim to keep it that way.”

Premier Anastacia Palaszczuk, May 2019



© Plumbing Industry Climate Action Centre

Renewable Hydrogen Industry Apprentice Luke Burn is excited about the prospects for the industry

## Jobs for the future in renewable hydrogen

As part of the state's economic recovery strategy, the Queensland Government [allocated \\$20 million](#) towards a renewable hydrogen apprenticeships centre, to provide young trainees with essential skills to get a foothold in the growing industry.

Apprentice Luke Burn is excited about the prospects. “The future for Queensland when it comes down to this hydrogen training facility is just going to be unreal,” he said. Minister

for Energy, Renewables and Hydrogen, Mick de Brenni, said: “Already, Queensland's renewables industry is worth \$8.5 billion, and with our abundance of solar and wind capacity, Queensland is the ideal candidate to produce hydrogen for domestic and international use”.



# Western Australian Government Scorecard

Ranking **5**

Score **38%**

**CATEGORY LEADER** Renewable Export Industry Strategy; Renewable Energy Industrial Precincts.

| Category                                      | What's Shining? | The Goal            |
|---|-----------------|---------------------|
| Strong Renewable Energy Targets               | 1               | 15 14 More to Shine |
| Rolling out Renewable Energy                  | 4               | 10 6 More to Shine  |
| Renewable Energy Zones & Transmission         | 4               | 10 6 More to Shine  |
| Energy Storage and Balancing the Grid         | 4               | 10 6 More to Shine  |
| Developing a Renewable Hydrogen Industry      | 5               | 10 5 More to Shine  |
| Sharing the Benefits of the Energy Transition | 7               | 15 8 More to Shine  |
| Renewable Export Industry Strategy            | 5               | 10 5 More to Shine  |
| Renewable Energy Industrial Precincts         | 3               | 5 2 More to Shine   |
| Growing Demand for Renewable Energy & Exports | 4               | 10 6 More to Shine  |
| 2021 Special Category - Renewable Recovery    | 1               | 5 4 More to Shine   |

Forecast      Shining Bright      Getting There      Must Shine Brighter

## Shining Strengths!



### The Asian Renewable Energy Hub is the biggest renewable project in the world.

- WA's **Future Battery Industry Strategy** aims to increase the state's role along the supply chain for household, vehicle and large-scale batteries. A key priority is local manufacturing of the materials needed to make batteries.
- The **Asian Renewable Energy Hub** is the biggest renewable project in the world. Once complete, a massive 26 GW of wind and solar power will be used to manufacture renewable hydrogen and ammonia. Both the Commonwealth and WA governments have granted the project "major project status".
- The WA Government is supporting the development of a large solar and wind farm at the proposed **Oakajee Strategic Industrial Area** near Geraldton to power a renewable hydrogen export hub and other ventures, fostering new job-creating industries.

## How to Shine Brighter?



### Western Australia is the only jurisdiction that has no renewable energy target.

- Western Australia is the only jurisdiction that has no renewable energy target, despite its world-leading renewable energy resources. This lack of clear direction from the government creates uncertainty, undermining the growth of the renewable energy sector.
- The WA government has an opportunity to get behind the **vision promoted** by chair of Fortescue Metals, Andrew 'Twiggy' Forrest, to combine WA's abundant iron ore and renewable energy resources to manufacture green steel. The state could play a greater role in coordinating and fostering a new green steel industry for WA.
- WA's COVID-19 economic recovery package invested \$130 million in renewable energy initiatives, that's just 0.04% of the state's gross domestic product. This compares poorly with Victoria and NSW which each invested over \$2 billion or more than 0.6% of their GDP.

“Global economies are hungry for clean, renewable energy, and we have the perfect mix of wind and solar potential that is the envy of the world right here in WA.”

*Alannah MacTiernan, WA Regional Development Minister, January 2021*



Through new investment, old fertiliser factories can be adapted to use renewable hydrogen.

## Fertile markets for renewable hydrogen products

Australia could soon be exporting fertilisers made from renewable hydrogen.

Yara Pilbara's ammonia plant, in north-west WA, currently uses hydrogen from natural gas to produce ammonia fertiliser for export. But the company is planning to build a 10 MW renewable hydrogen electrolyser to feed the plant instead. Thanks to a **grant from ARENA**, they've already done a feasibility study and now the **WA Government** is contributing \$2 million towards the project.

Yara's General Manager in WA, Chris Rijkse, **told the ABC** there's a lot of interest from Asian markets. "They're the frontrunners in trying to develop a hydrogen offtake economy in their countries," he said. "Countries like Korea ... Singapore, Japan; they really want to develop that hydrogen economy."



# Australian Government Scorecard

Ranking **7**

Score **34%**

| Category                                      | What's Shining? | The Goal            |
|---|-----------------|---------------------|
| Strong Renewable Energy Targets               | 4               | 15 11 More to Shine |
| Rolling out Renewable Energy                  | 4               | 10 6 More to Shine  |
| Renewable Energy Zones & Transmission         | 6               | 10 4 More to Shine  |
| Energy Storage and Balancing the Grid         | 5               | 10 5 More to Shine  |
| Developing a Renewable Hydrogen Industry      | 2               | 10 8 More to Shine  |
| Sharing the Benefits of the Energy Transition | 3               | 15 12 More to Shine |
| Renewable Export Industry Strategy            | 4               | 10 6 More to Shine  |
| Renewable Energy Industrial Precincts         | 2               | 5 3 More to Shine   |
| Growing Demand for Renewable Energy & Exports | 3               | 10 7 More to Shine  |
| 2021 Special Category - Renewable Recovery    | 1               | 5 4 More to Shine   |

Forecast Shining Bright  Getting There  Must Shine Brighter

## Shining Strengths!



### In October 2020 the federal government announced the \$1.3 billion Modern Manufacturing Initiative.

- The federal government has prioritised investment in hydrogen, long-term energy storage and green steel and aluminium as part of the [First Low-Emissions Technology Statement](#). (Though ruling out the use of fossil fuels for hydrogen production would make this policy even more effective.)
- In October 2020 the federal government announced the \$1.3 billion [Modern Manufacturing Initiative](#), which includes recycling and clean energy as one of six national priorities for investment.
- The federal government is investing hundreds of millions to upgrade electricity interconnectors between states and supporting the Marinus Link from Tasmania to the mainland.

## How to Shine Brighter?



### The 2021 federal budget provides the next opportunity.

- Like the National Hydrogen Strategy, a national Renewable Export Industry Strategy would signal to the world that Australia means business on clean energy and provide a coordinated framework for renewable export initiatives around the country.
- While the federal budget in 2020 did commit funding to a Renewable Recovery, we are being outspent by our global trading partners. For example, the UK Government is investing more than five times the Australian Government on a per capita basis. The 2021 federal budget provides the next opportunity.
- The federal government could do much more to encourage the electrification of transport and industry. For example, the [Modern Manufacturing Initiative](#) should go further to support energy productivity and fuel switching measures across our manufacturing sector.

“A regional hydrogen export hub will “bring hydrogen users and exporters together in one place. This will help scale up the industry to drive down costs, and create the demand needed to fire-up the industry.”

[Australian Energy Minister Angus Taylor, December 2020](#)



© WWF-Aus / Adobe Stock / Malp

## Renewable hydrogen a top priority for ARENA

Renewable hydrogen is one of the [top three priorities](#) for the Australian Renewable Energy Agency (ARENA). ARENA has shortlisted [seven contenders](#) for \$70 million in funding to build hydrogen electrolyzers for Australia. Four of the shortlisted projects are planned for Western Australia and one each is located in Tasmania, Queensland and Victoria.

[ARENA CEO Darren Miller](#) says there’s strong interest in renewable hydrogen from across a broad cross-section of industry. “Much like our role in making large-scale solar competitive, ARENA aims to help bring down the cost of hydrogen, build Australia’s skills and capacity, create jobs and activity in regional areas, and help Australia achieve our emissions reduction objectives.”



# Northern Territory Government Scorecard

Ranking **8**

Score **30%**

## CATEGORY LEADER Renewable Export Industry Strategy

| Category                                      | What's Shining? | The Goal            |
|---|-----------------|---------------------|
| Strong Renewable Energy Targets               | 3               | 15 12 More to Shine |
| Rolling out Renewable Energy                  | 3               | 10 7 More to Shine  |
| Renewable Energy Zones & Transmission         | 5               | 10 5 More to Shine  |
| Energy Storage and Balancing the Grid         | 3               | 10 7 More to Shine  |
| Developing a Renewable Hydrogen Industry      | 4               | 10 6 More to Shine  |
| Sharing the Benefits of the Energy Transition | 2               | 15 13 More to Shine |
| Renewable Export Industry Strategy            | 5               | 10 5 More to Shine  |
| Renewable Energy Industrial Precincts         | 1               | 5 4 More to Shine   |
| Growing Demand for Renewable Energy & Exports | 3               | 10 7 More to Shine  |
| 2021 Special Category - Renewable Recovery    | 1               | 5 4 More to Shine   |

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 is **getting behind** Suncable's grand plans to develop the **world's largest solar farm** and export clean energy via a new undersea power cable from Darwin to Singapore.
- The NT has committed to building "Big BESS" - a **35 MW battery** that will reduce Darwin's need for electricity from its gas-fired power station. Home and business owners in the NT can apply for a **\$6,000 grant** to install battery systems.
- The **Solar Energy Transformation Program (SETuP)** is run by the not-for-profit, government-owned company **Indigenous Essential Services**. SETuP has seen the rollout of 10 MW of solar to benefit 25 Indigenous communities, enough to power about 1,750 remote houses, reducing reliance on diesel fuel. The \$87 million program is funded jointly by the Australian and NT governments.

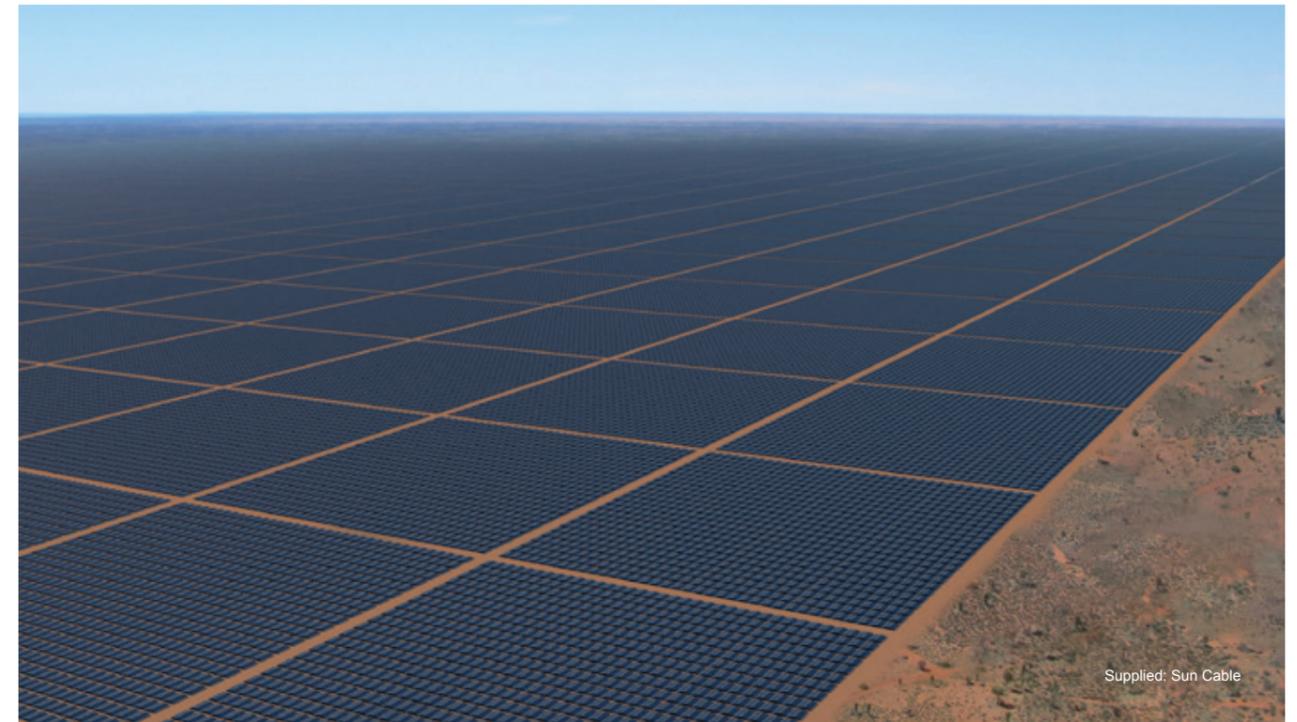
### How to Shine Brighter?



- The NT has a target of 50% renewables by 2030 but has been **slow to implement** the recommendations of the 2017 **Roadmap to Renewables** expert report.
- The NT produces the lowest percentage of electricity from renewables of any state or territory. Only 80 MW of large-scale and 26 MW of small-scale renewables were deployed in the past two years - a fraction of what's happening in the rest of the country.
- The NT has a plan to establish a **renewable hydrogen industry** but has not developed a vision or strategy to grasp the opportunity to export a range of renewable energy products and services.
- There's an opportunity for the NT to lead the world in designing best-practice frameworks for Indigenous consultation and involvement in the renewable energy industry. Laying this groundwork now will have long-term benefits for both Traditional Owners and industry.

## "The Northern Territory has an incredible opportunity to lead the world as a renewable energy hub - and seizing this opportunity will deliver thousands of local jobs."

*NT Chief Minister Michael Gunner, July 2019*



Supplied: Sun Cable

Sun Cable will help sell energy to the world.

### Plans for Singapore to plug-in to Australia's sunshine

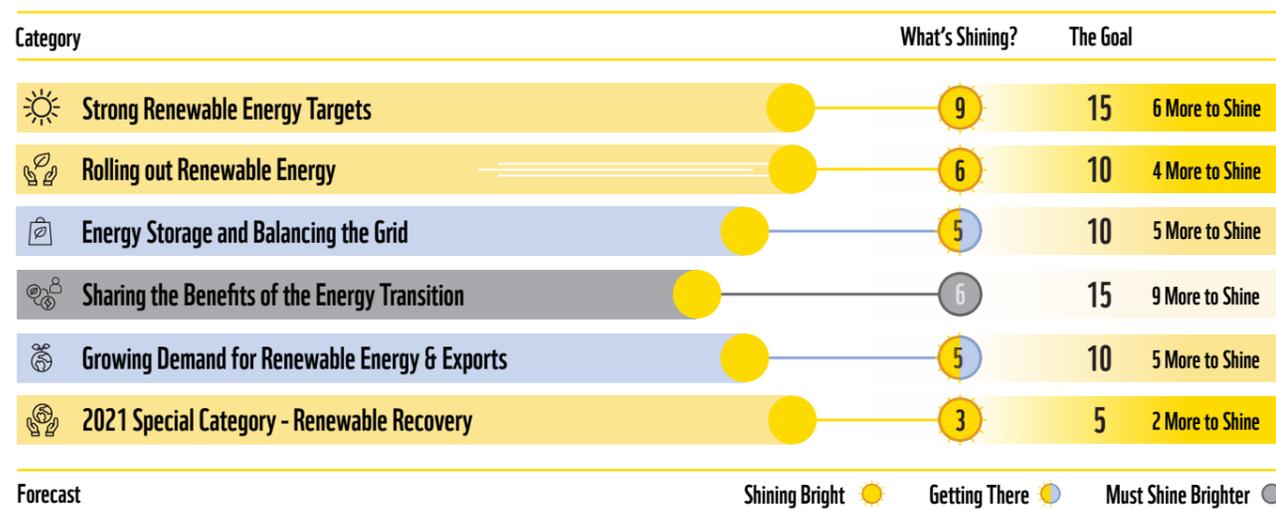
Sun Cable plans to transform the renewable energy landscape in Northern Australia and the Indo-Pacific region with its Australia-ASEAN Power Link (AAPL) project.

Sun Cable's renewable energy transmission system incorporates the world's largest solar farm and battery storage facility in the Barkly region of the Northern Territory and a 4500-kilometre transmission system to supply Darwin and Singapore.

The AAPL has **Major Project Status** with the Australian and Northern Territory Governments. Sun Cable, CEO **David Griffin points out** that the project will help the Northern Territory decouple economic growth from carbon pollution. "This will provide affordable, reliable energy to support industrial growth in Darwin, as well as supplying up to 20% of Singapore's electricity needs," he said. Construction is expected to start in 2023.

# Australian Capital Territory Government Profile

**CATEGORY LEADER** Growing Demand for Renewable Energy & Exports; Renewable Recovery.



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 became the first jurisdiction to meet its goal of 100% renewable energy.

- The ACT has started to phase out fossil-gas by [switching home heating to renewable electricity](#). It is also replacing diesel buses with electric. These policies will increase demand for renewable energy.
- In late 2019 the ACT became the first jurisdiction in Australia to [meet its goal of 100% renewable energy](#). This was achieved through rooftop solar, and five renewable energy auctions to purchase electricity from wind and solar generators (located mainly interstate).
- The ACT Government's 2021 COVID-19 recovery budget includes [over \\$300 million for renewable energy initiatives](#), including a 250MW 'big battery' and no-interest loans for household solar, batteries and electric vehicles.
- As the ACT's electricity consumption increases due to the switch from gas to electricity, and the uptake of electric vehicles, the [government has committed](#) to purchase more renewable energy, taking the ACT beyond 100% of current consumption levels.

## How to Shine Brighter?

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 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.

“Through our fifth Renewables Auction, we secured renewable electricity systems to support our growing population and replace fossil fuel gas and transport fuel with zero emissions electricity from wind and solar farms.”

[Shane Rattenbury, ACT Minister for Energy and Emissions Reduction, December 2020](#)



Electric bus manufacturing provides huge jobs potential.

## Electric buses put the pedal to the metal in Canberra

As part of the [ACT's Climate Strategy](#), it has set a goal of transitioning its urban bus fleet to zero emissions by 2040. Local, Australian-owned company [Electromotiv](#) built the buses for Canberra's first trial of zero-emissions public transport.

According to Managing Director Toby Roxborough: “The demand for electric buses is exponential. Last year we did one

bus, then the first quarter of this year we did nine buses for Auckland. We're now working on our next 50, our next 100, and the next 200”.

Toby said Australia's fantastic renewable energy resources makes it ideal for this technology. “The potential for this industry is huge. We're looking at 10,000 jobs-plus for manufacturing vehicles in Australia.”



**THE CRITICAL DECISIONS  
WE MAKE TODAY WILL  
HELP SHAPE AUSTRALIA'S  
TOMORROW.**



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