



Deploy Report explained

Six technologies we have now can cut Australia's emissions by 81% by 2030

There is a common misconception that the clean 'green' technologies we need to reduce Australia's carbon emissions are still in the development stage, or worse, that they do not yet exist. In this report, we outline a five-year plan to roll out clean technologies that both exist and are operating successfully in Australia and around the world.

The challenge is that uptake of these clean technologies hasn't been at the speed or scale that can drive carbon emissions down fast enough to keep Australia on track with our international commitments. This report identifies clean technologies that can make the most immediate impact on emissions, the number of units of each technology that we will need and what it will mean for tech rollout rates over the next five years.

At the same time, we show how rolling out clean technologies is an opportunity for Australia. It creates jobs, can revitalise our manufacturing sector and allow Australia to be competitive in the cleantech export market and in energy exports.

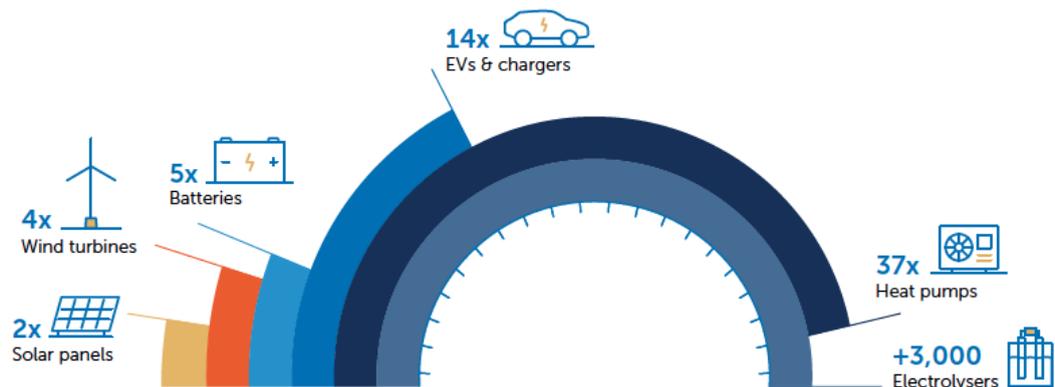
What did the report find?

- **A national clean technology rollout can cut Australia's emissions by 81%** by rolling out market-ready technologies and including carbon drawdown. The Australian Government's legislated target of 43% emissions reduction by 2030 is just the start of what is possible.
- **Rolling out commercially available technologies can reduce emissions and create 195,000 jobs.** The report's focus is on the use of all-electric clean technology across three sectors of the economy; buildings, transport and industry, supported by a transition to a 100% renewable energy supply and supplemented by land use to maximise carbon drawdown.
- **Benefits can be multiplied in regional Australia.** We can leverage traditional manufacturing strengths and create economic opportunities in our regional heartlands. So much of the necessary innovation and manufacturing is already underway in these areas, and they are likely to be most impacted by a drop in demand for fossil fuels.
- **Six existing technologies can cut emissions and create jobs.** Six technologies - all available today - will do the heavy lifting: wind turbines and solar panels, batteries, heat pumps, electrolysers and electric vehicles with chargers.
- **100% renewable generation and storage are the foundation for success.** Australia can reach 84% renewable energy generation within five years by deploying 64 GW of renewable capacity and 13 GW (67 GWh) of energy storage capacity. This equates to about 6,000 wind turbines and 66 million solar panels. With this foundation, a target of 100% renewable energy generation by 2030 is feasible.

- **Deployment benefits business, industry and the regions.** The technology rollout we describe will drive demand at a scale that can revitalise Australian manufacturing. A strong manufacturing sector will reduce our reliance on international supply chains and so strengthen our sovereign security. We highlight lithium-ion batteries, solar pvs, thermal storage and electric vehicles as examples of clean technologies already manufactured onshore today.
- **Co-ordination and community support is essential.** The plan will require coordination and integration, balancing the mass rollout of clean electric technologies with the progressive replacement of the electricity grid. If this is to be a just transition, local communities must be at the forefront. First Nations' participation around environmental, social and economic impacts needs to be integrated throughout.

Figure 1: Increase in rollout rates for six key technologies to achieve the five-year plan

	Deployed in 2021	Annual deployment plan	5-year deployment plan total	5-year technology deployment plan
Solar panels (utility scale)	1.9M	3.5M	17.7M	66.7M Solar panels, inc. utility scale and domestic
Wind turbines (utility scale)	300	1,200	6,000	6,000 Wind turbines
Batteries	270,000	1.3M	6.4M	67 GWh inc. utility scale and domestic batteries
EVs (passenger vehicles)	21,000	281,000	1.4M	3.8M Passenger electric vehicles & chargers
Hot water heat pumps	26,000	950,000	4.8M	9M Hot water and split-system heat pumps
Electrolysers	1	600	3,000	3,000 Electrolysers for green H2 for industry



Deploy – Cut emissions and build a prosperous Australia 1

We can achieve this ambitious plan

Australia has shown it can lead the world in deploying renewable energy technology. We have the highest proportion of solar generation in our energy mix and in the last five years we doubled our rollout of domestic solar panels. More than a quarter of Australian households generate power on their own roofs, and demand is driving costs down. The cost of solar panels in Australia dropped 80% between 2010 and 2020.

Australia's roll-out of residential air-conditioning heat pumps is already faster than the pace needed for this plan, and in 2021, we added 6.2 GW of renewable generation to our power supply. Of course, some technologies need to ramp up significantly because we are starting from a low base; heat pump water heaters and electric vehicles for example.

Because they are one-third of Australia's new car market, fleet sales will do the heavy lifting as we build to 4 million electric vehicles on our roads. Sweden has shown this is possible. They increased new car sales from 10% EVs in December 2019 to 60% within 12 months.

We already know how to make the technologies that are needed for a zero-emissions economy - we just need to make more of them and put them to work.

What do we need to do?

Our five-year plan requires investment and coordination, skilled people and reliable supply chains and immediate and large-scale action by government, industry and households.

- We need to install renewable generation capacity and far more storage than the total of all types of generation capacity and storage in Australia today.
- Each sector needs an ambitious, individualised roadmap to realising their emission reduction contributions, removing inertia and allowing momentum to build.
- We need to install clean technology in our homes, vehicles and industries at a rate of about two units or appliances per household. Over five years, this looks like:
 - 10.6 million units of clean technology in 3 million residential buildings - (such as hot water and air conditioning heat pumps)
 - 2.9 million units of building efficiency technologies (including thermal upgrades and induction cooktops)
 - 7,000 units of technology in industrial settings, (industrial-scale heat pumps and electrolysers)
 - 3.8 million units for transport (electric vehicles and chargers).

As the world shifts to zero emissions, we can capitalise on Australia's abundant and competitive renewable resources, rich mineral wealth and skilled industrial base and workforce. With these ingredients and commitment we can leverage our manufacturing capability and build new export industries worth up to \$333 billion - more than three times our current fossil fuel revenue.

[To download the full report, click here](#)