

Blueprint Institute

Achieving prosperity in a net-zero future

A market-friendly climate and energy blueprint
for the 47th Parliament



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About this paper

This paper recognises that we are at a crossroads. We stand on the cusp of the next energy revolution. To take advantage of this, it is crucial that the right policy settings are in place. This paper provides costed, genuinely implementable policies for parliamentarians to embed in their party platforms—and outlines the need for action, the opportunity available, and offers a policy blueprint that will set Australia on the path to economic growth in a net-zero world.

About Blueprint Institute

Every great achievement starts with a blueprint.

Blueprint Institute is an independent public policy think tank established in the era of COVID-19, in which Australians have witnessed how tired ideologies have been eclipsed by a sense of urgency, pragmatism, and bipartisanship. The challenges our nation faces go beyond partisan politics. We have a once-in-a-generation opportunity to rethink and recast Australia to be more balanced, prosperous, resilient, and sustainable. We design blueprints for practical action to move Australia in the right direction.

For more information on the institute please visit our website: blueprintinstitute.org.au

Acknowledgements

Thank you to the experts who have contributed through consultation and peer review in the development of this work.

Images are courtesy of Unsplash.

Attribution

This report may be cited as: Cross, D., Ouliaris, M., Steinert, J., Williams, L., Barrett, T., Green, K., Poulton, C., Lubberink, J., Akhurst, T. Achieving prosperity in a net-zero future, A market-friendly climate and energy blueprint for the 47th parliament, Blueprint Institute, 2023.

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Executive summary

The economic case for action on climate is clear. Over the past decade, the precipitous decline in the cost of renewable energy has opened a window of opportunity. The race to decarbonise is gathering pace—future growth and prosperity will be determined by our ability to capture green capital and low-carbon industry. Countries that deny or delay this change will be left behind. Australian investors and business leaders know this and are desperate for the Federal Government to meet them on the same page.

The excessive politicisation of climate policy has created avoidable uncertainty and made our economy less robust and agile. We need market-based policies that provide clear signals about the direction of travel—to enable investment to flow and for our economy to transform. We do not want overbearing government policy to get in the way of this transformation—we just need policy that can empower our businesses, our universities, and all Australians to lead.

It is not hard to see why the business community has been ten steps ahead of the government on climate. The vast majority of economic activity across the world occurs in countries that already have made a commitment to net-zero emissions. McKinsey has projected that achieving net-zero emissions worldwide by 2050 will require additional investment of \$13.8 trillion annually in physical assets alone—and global capital markets have responded. This represents a huge opportunity—and with our abundance of resources, our high R&D capability, and our existing infrastructure—it is an opportunity that Australia is well-placed to take advantage of.

Despite this, none of Australia's major political parties went to the 2022 Federal Election with the policy blueprint our nation needs to achieve prosperity in a net-zero future. Both Labor and the Coalition lacked policy commitments that reflected the opportunities available to Australia in a decarbonised economy—while the Greens offered a program of excessive government intervention that is needlessly hostile toward the private sector.

Indeed, those within parliament who understand the importance of decarbonising

our economy seem reluctant to acknowledge that the government should be leveraging—not substituting—private investment to drive efficient decarbonisation and unlock our inherent advantages in a net-zero world.

As a think tank that believes passionately in the core tenets of classical liberalism—social progressivism, market-based economics, individual freedom, and environmental conservation—Blueprint wants to see a national policy framework that empowers individuals and communities to act to renew the health, stability, and prosperity of our nation in the face of climate change.

We must shift the climate and energy debate from mindless discussion about the existence of anthropogenic climate change and arguments over percentage-point changes to our emissions targets, to a contest of ideas over solutions based on science and economics. The question should not be 'if', but 'how' when it comes to climate action. The real debate to be had is over the most efficient means to achieve emissions reductions and realise Australia's opportunities in a net-zero economy.

This paper offers a suite of 'low-hanging fruit' policies for the 47th Parliament to consider and for the government, opposition, and crossbench to embed in their respective policy platforms. These policy recommendations are the result of extensive consultation with experts in the relevant fields and capture valuable lessons learned—from within Australia and abroad—from what has and has not worked in the past. They are actionable and ambitious, they can be implemented immediately, are affordable (in many cases revenue positive), and will have a beneficial impact in delivering emissions reductions.

Australia has committed to net zero by 2050, but under current policy settings we will show up late and underprepared for this new future, if we arrive at all. Unless we start to take more substantial steps toward reaching this target, we risk further harming our international standing and economic competitiveness. The largest economies in the world have committed to net

zero—just like us. But these commitments, unlike ours, have been underpinned by meaningful policy. Our largest coal-export partners are divesting—a clear sign that we can no longer rely on coal as a source of national wealth over the medium term. For a time, we’ve been able to trail behind our peers with little consequence for us or global temperatures—but the tide has turned. Maintaining our current heading will increasingly marginalise us, and harm our prosperity and quality of life. Acting now will ensure that decisions are not forced upon us, and remain an energy superpower. The threat of carbon border tariffs—which could significantly harm our ability to trade—is real.

This new parliament must represent a turning point for climate and energy policy in Australia.

Adopting the policy settings in this Blueprint will allow Australia to seize the swathe of economic opportunities available with both hands. By 2030, the clean energy sector alone is predicted to increase jobs by somewhere between 130,000 and 200,000, with around 75% of opportunities distributed across regional and rural Australia. In comparison, over the next 50 years, unchecked climate change will reduce Australia’s economic growth by three percent per year and cost around 310,000 jobs per year.

This paper offers a clear plan to ensure our prosperity in a decarbonised global economy. We will assess the impact that these policies will have upon the Australian economy, their cost to government balance sheets, and ultimately their effectiveness in reducing emissions.

Summary of our market-friendly climate and energy policy blueprint

Unlocking our economic potential—Cheap and reliable electricity to allow businesses to flourish and keep household prices low

1. Implement Blueprint's Coal-Generation Phasedown Mechanism to produce a coal-free grid by 2035
2. Fund expedited pre-final investment decision 'early works' processes for transmission infrastructure to crowd-in private investment
3. Institute capacity payments for new, low-emissions intensity dispatchable capacity only

Allowing business to lead—ensuring Australia is a hub for green tech

4. Double energy R&D spending to \$900 million a year, investing in the following promising areas:
 - a. Battery and hydrogen technology for use as a diesel alternative in mining and agriculture
 - b. Allocate an additional \$20 million to expand existing agricultural innovation hubs as centres for zero-emissions technology development and implementation
 - c. Increase R&D funding for green hydrogen by \$100 million per year
 - d. Fund pilot studies for green metals manufacturing
 - e. Critical minerals—focusing on refining to capture more of the lithium value chain
5. Implement mandatory reporting on Climate-related Financial Disclosures
6. Invest in the decarbonisation of transport
 - a. Federal investment of \$875 million through 2030 in fast charging infrastructure
 - b. Reforming regulations and tax arrangements
 - i. Updating the luxury car tax to encourage the purchase of low-emissions vehicles
 - ii. Increase heavy vehicle width limit to 2.6 metres and increase weight limit for zero-emissions models
 - iii. Provide a stamp duty waiver for zero-emissions and registered second-hand diesel heavy vehicles

Securing Australia's place in the world

7. Adopt a bipartisan commitment to the 2030 emissions reduction target
8. Bid to host COP29 alongside the Pacific Islands
9. Establish a true Research Institute for Sudden Catastrophes

Enabling regional adaptation to take advantage of new opportunities

10. Support a national coal infrastructure renewal and repurpose strategy
11. Establish Coal adaptation authorities
12. Create start-up incubators in regional communities with favourable seed funding
13. Support regions with short-term labour market support
 - a. Locally staffed employment and information hubs
 - b. Expanded financial incentives for part- and full-time certification and upskilling through existing external providers
 - c. Last-resort early retirement packages for workers aged over 60

Context for action

Australia's economic potential in a green future

We know that climate action is an economic opportunity for Australia. However, we have consistently failed to seize that opportunity. The first-mover advantage is real—countries around the world are already leveraging their competitive advantages to capture key markets in the low-carbon economy. Notably, [Korea](#) is positioning themselves as leaders in the low-carbon economy through their proactive low-carbon investments and innovation. As we look to reshape our economy in the wake of COVID-19, we must seize this window of opportunity to position our society for a sustainable, resilient, and prosperous future.

The costs of inaction are huge. If climate change is not mitigated, Australia's economy could be exposed to losses of [three trillion dollars and 880,000 jobs](#) by 2070. Reducing emissions is in our national interest. If we attempt to shirk our responsibilities on the world stage, retaliation by key trading partners will likely [affect our exports](#)—costing jobs.

Most importantly, new opportunities are abundant. Our access to sun and wind for renewable energy is world-leading. Our land is host to rich supplies of resources, well-suited to an emerging global economy focused on zero emissions. [604,000 new jobs](#) could be created in industries including the electricity sector, carbon farming, and the transport sector by 2030. These could help generate up to [\\$680 billion](#) in additional value to the Australian economy by 2070. The global race has started, and our competitors are already moving fast to attract investment and secure market share—but in acting now, we could still overtake the pack.

The importance of cheap, reliable, and secure energy

A large part of our future prosperity will depend on whether we can secure cheap and reliable

energy from a decarbonised energy grid. The price and supply of electricity heavily impacts the viability of many Australian businesses and the health of household budgets. While the necessary renewable and storage technologies exist, the clean energy shift is still unprecedented and technically challenging. There is a role for the government to play in helping to coordinate this task.

This includes enabling old, tired, and unreliable coal-fired generators to exit the market in an orderly fashion, whilst simultaneously enabling cheaper, cleaner energy alternatives to enter the market. Embracing this transformation will ensure our emissions goals are achieved at lowest cost, and that businesses and consumers can benefit from our entrenched clean energy advantages—using cheap wind and solar energy to power a new boom in our economy.

Coal dominated our energy mix for decades. The share of coal generation peaked at 84% in 2001 before declining to [54%](#) by 2021. In absolute terms, coal generation [peaked](#) in 2008–9, declining thereafter following a series of plant closures. Tasmania, the Northern Territory, and South Australia have [no functioning coal-fired power stations](#). As for New South Wales, Victoria, Queensland, and Western Australia, no new coal-fired power stations have been commissioned in the past decade.

A large proportion of our remaining coal-fired fleet will inevitably retire over the next two decades, due to waning economic viability in the face of competition from renewable energy. In fact, The Queensland government has recently announced plans to [phase out coal-fired power by 2035](#). Furthermore, the past few years alone have seen a rush of early closure announcements. Eraring, one of New South Wales' largest coal power stations, is closing [seven years earlier](#) than initially expected. AGL recently announced that [Long Yang A will close by 2035](#), a full decade earlier than originally proposed. [Bayswater power station](#) in New South Wales is also scheduled for closure between 2030 and 2033. Energy Australia has brought forward the closure of Yallourn power station by [four years to 2028](#) and

Mount Piper by [two years](#) to 2040. And Delta Electricity rejected an [\\$8.7-million](#) federal government grant for a turbine upgrade to Vales Point power station, given uncertainty the plant would stay open to its forecast 2029 closure date. This capacity will need to be replaced as the economy electrifies and demand grows. We must make it easier for new generation capacity to come online. This begins by delivering certainty around the order and timing of coal plant exits, thus enabling private-sector planning and investment.

Coal Jobs

Just over 10,000 workers are employed by domestic coal-fired electricity generation, predominantly within generators and the thermal coal mines that feed them. Barring significant investment to build alternative and sustainable industries, the inevitable closure of coal generators over the next 30 years will displace workers and dampen the job market in the regions where they are housed. Some workers may be hired to assist in temporary, post-closure remediation efforts or find similar work at other stations before they, too, shut down. But these band-aid solutions are inadequate. Proper planning is key to ensure that retrenchment does not severely impact the stability and economic viability of regional communities.

Structural decarbonisation around the world also puts all of Australia's remaining thermal coal mining jobs at risk. More than 60% of our thermal coal exports are delivered to South Korea, Chinese Taipei, and Japan (see Figure 1)—each of which now have net-zero pledges in place.

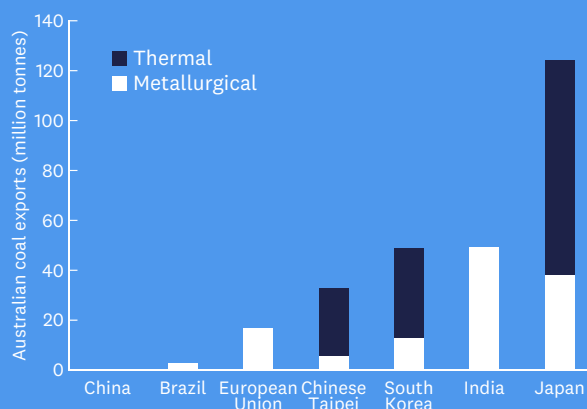


Figure 1 Australian coal exports (FY2021-22)

Source [Office of the Chief Economist](#)

Australian jobs in metallurgical coal mining will remain relatively more secure in the near term—but alternatives are undergoing rapid development. These methods usually replace coking coal with hydrogen as a reducing agent to make green steel. Europe and the US are already offering incentives for the market to expand. While it is unlikely green steel technology will be rolled out at scale before [2030](#), in the long term it will put the security of metallurgical coal mining jobs at risk.

All this means that coal exports are forecast to decline [80% by mid-century](#). Over 45,000 Australian coal mining jobs are exposed to this global trend (see Figure 2). More than just affecting individuals, these job losses will undoubtedly have a ripple effect in the communities and businesses that benefited from the patronage of high-paid coal workers.

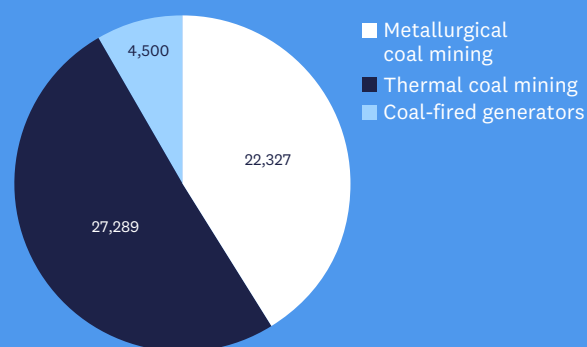


Figure 2 National coal sector employment by type (2021)

Source [ABS](#), Blueprint Institute Analysis

Just over half the reduction in coal's share of energy generation since its 2008–9 peak has been replaced by gas, with the rest from renewables (see Figure 3). But as batteries become cheaper and more efficient, they are quickly [replacing](#) gas plants as the most cost-effective way to maintain supply during demand peaks. The ability to store and rapidly release more power into the grid will be invaluable in a post-coal energy market.

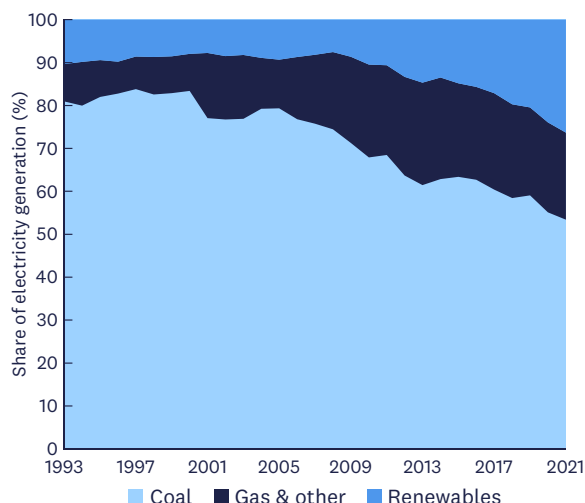


Figure 3 Australia's energy generation by source (1993–2021)

Source [Department of Industry, Science, Energy and Resources](#)

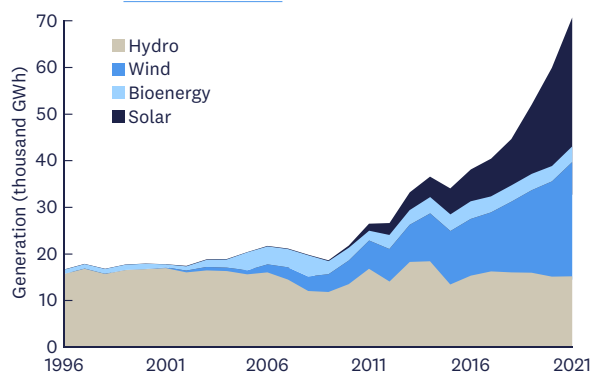


Figure 4 Australian electricity generation from renewable sources, by fuel type (1996–2021)

Source [Department of Industry, Science, Energy and Resources](#)

In 2019, renewables contributed [21%](#) of Australia's total energy generation. Wind provided 7.3% of total generation, solar 6.7%, and hydro 5.4% (see Figure 4). In the same year, a record 2.2GW (or three percent) of installed capacity was added through 34 projects, led by rooftop solar. By 2020–21, the Australian renewable energy industry accounted for [26.7%](#) of Australia's total electricity generation, an increase of almost six percentage points in less than two years.

Wind's percentage of total electricity generation increased from 7.8% in 2019–20 to [9.2% in 2020–21](#), making it our leading source of clean energy generation in 2021. Rooftop solar remains immensely popular, with [over three million households](#) installed. For a little over an hour on 11 October 2020, South Australia became the [first major jurisdiction](#) globally to be powered wholly by solar energy, with 77% from rooftop systems, and 23% from large-scale solar farms.

As significant as this growth is, it is an order of magnitude less than what is required to decarbonise our grid over the coming decades. Swift and reliable decarbonisation of our electricity grid is not only possible, but desirable to ensure that Australian consumers and businesses benefit from the reduction in prices that renewables offer.

Transmission and storage—the key to reliability and security

Customers might be disappointed if a store runs out of a certain product and they have to wait for shelves to be restocked. But electricity is different. No one is willing to accept the lights going out before dinner, or the air conditioner not cooling the living room on a hot summer day. With our electricity system undergoing rapid change, policymakers and energy experts are rightfully concerned about reliability and supply.

Alongside the growth of cheap renewables, our electricity demand is expected to grow considerably. In its most likely scenario, AEMO projects electricity consumption in the National Electricity Market (NEM) to grow 28% by 2040 (see Figure 5). This figure could even be a substantial underestimate if Electric Vehicle (EV) adoption is quicker than expected or if Australia develops a grid-connected green hydrogen export industry. If we're to achieve net-zero emissions, many argue that we need to electrify everything. That's to our benefit given the abundant wind and solar on our doorstep.

Building renewable energy installations will count for nought without the transmission infrastructure essential for the reliability of our future electricity system. Built in an era dominated by centrally located coal-fired generation, our current transmission network must undergo a sweeping overhaul to ensure it is fit for purpose to integrate the new decentralised

generation mix.

High-capacity transmission will become increasingly integral to the grid as the geographic dispersal of renewable resources are leveraged to stabilise NEM-wide generation. Additional transmission capacity is crucial to getting electricity from states with surplus generation or storage to the regions that need it, and to connect areas with high renewable potential to the grid. That Snowy 2.0, a massive hydropower project, may be completed but stranded without a connection to the grid shows the inadequacy of current efforts. Strategic investment in our transmission infrastructure is a prerequisite for grid reliability.

To ensure generators are adequately incentivised to build firmed capacity at the most important locations, scarcity and other network constraints and services must be adequately priced in our electricity market—the NEM. Any changes will need to be effective and timely, otherwise consumers will suffer.

Regulators are increasingly investigating options for unlocking flexible demand. Providing incentives for consumers to reduce their energy use when the network is stressed will help deliver a more efficient sector and a better ability to integrate large amounts of intermittent renewable energy sources.

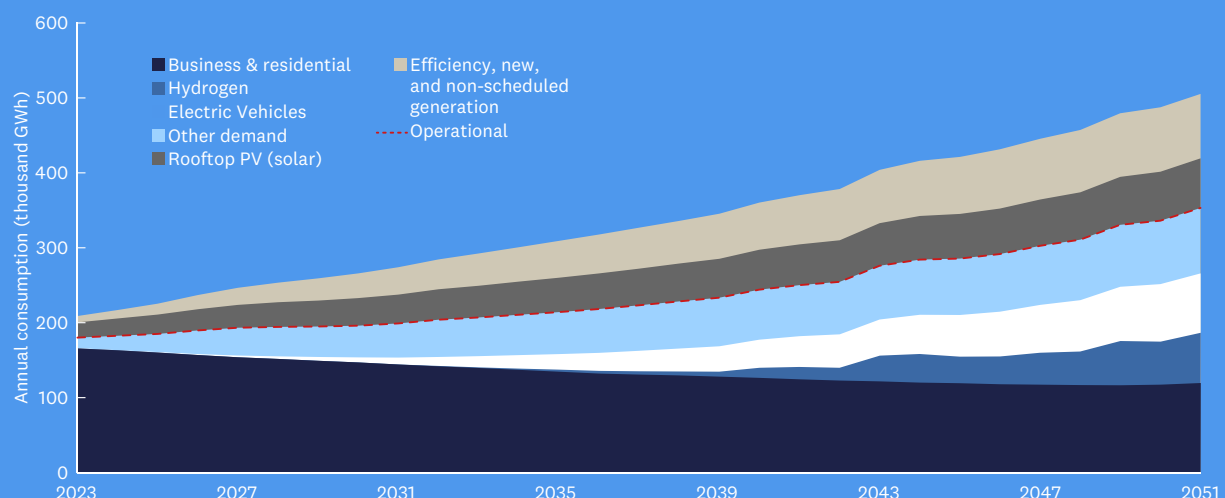


Figure 5 Projected future annual electricity consumption in NEM (2023–51)

Source [AEMO](#)

Australia can be a hub for green tech and investment

As the global economy decarbonises, the industries and resources that have formed the basis of trade between countries in today's carbon-intensive economy will change. Australia's traditional carbon-intensive exports will be less valuable, while other new sectors and commodities will emerge as the key drivers of economic growth. The important role for policymakers is to ensure that we can pivot, embrace, and unlock our nation's abundant opportunities in the emerging clean economy. If we fail to do so, other nations will step into our place.

By 2030, the size of the global market for clean tech will surpass the value of the oil market, rising from [\\$122 billion to \\$870 billion](#). Green industries can have a vibrant home in Australia, if we support them. We already have the skills and the infrastructure to make us leaders. If we move early, clean energy, green hydrogen, green steel, critical minerals mining, and more could herald a new era of economic growth across the country—from our capital cities to our regions.

Much stronger incentives and greater support for green R&D are needed to generate improved momentum, to ensure that we capture the potential economic benefits of decarbonisation, and the new technologies and industries that will arise in a low-emissions economy. Government investment in priority technologies, such as green hydrogen, capturing more of the lithium value chain and green aluminium and iron, can help.

If we have the vision to lean into and fully embrace decarbonisation, we have the opportunity to secure Australia's economic future for generations to come. Worldwide demand for clean technology and decarbonised goods is only growing, and global capital is ready today to invest in meeting that demand. Australia is richly endowed with the natural resources needed to be a major player in the space. Realising that potential requires ambitious policy settings to provide certainty and send the appropriate signal to the private sector that Australia is open for green business.

Australia's clean energy research spending is underwhelming (see Figure 6). For example, in the 2020 budget the government allocated [\\$1.62 billion](#) to the Australian Renewable Energy Agency (ARENA) for the 10 years through to 2032, a significant decrease from the [\\$2.5 billion](#) in funding for the preceding 10-year period. Since its founding in 2012, ARENA has made excellent inroads, delivering [625 projects](#) as varied as grid-scale batteries, low-cost solar, and green hydrogen technology worth a total value of \$8.04 billion, and crowding in \$3.32 of private investment for every dollar of public money spent.

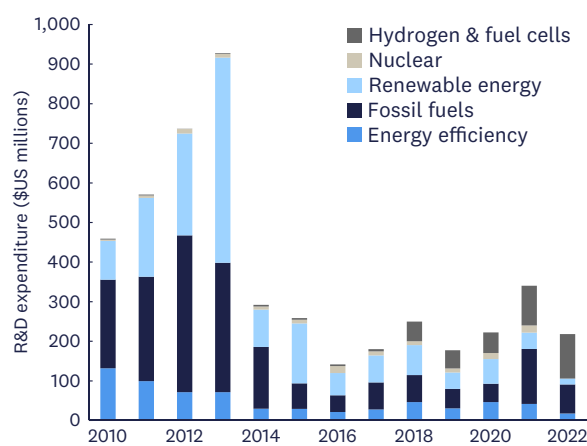


Figure 6 Australian public energy R&D by spend, by energy type (2010–2022)

Source [IEA](#)

We should be doubling down on our past successes. Presently, we are not. Public R&D in energy technology as a share of GDP decreased by almost 90% between 2013 and 2019. Australia spends less than one third that of the UK and US per capita on energy R&D. On this, Australia is an international outlier. We must do better (see Figure 7).

Dragging our heels on R&D not only damages our economic potential, but also harms our international reputation and diminishes our influence among our allies. Australia spends [2.1% of GDP](#) on defence, and while our contribution would be dwarfed by that of our [larger](#) allies in dollar terms, we accept defence spending as 'doing our bit' to protect the security of the liberal world.

If we refused to spend on defence, we could well be left out in the cold. Climate change is no different. Contributing to the global effort buys us a seat at the table.

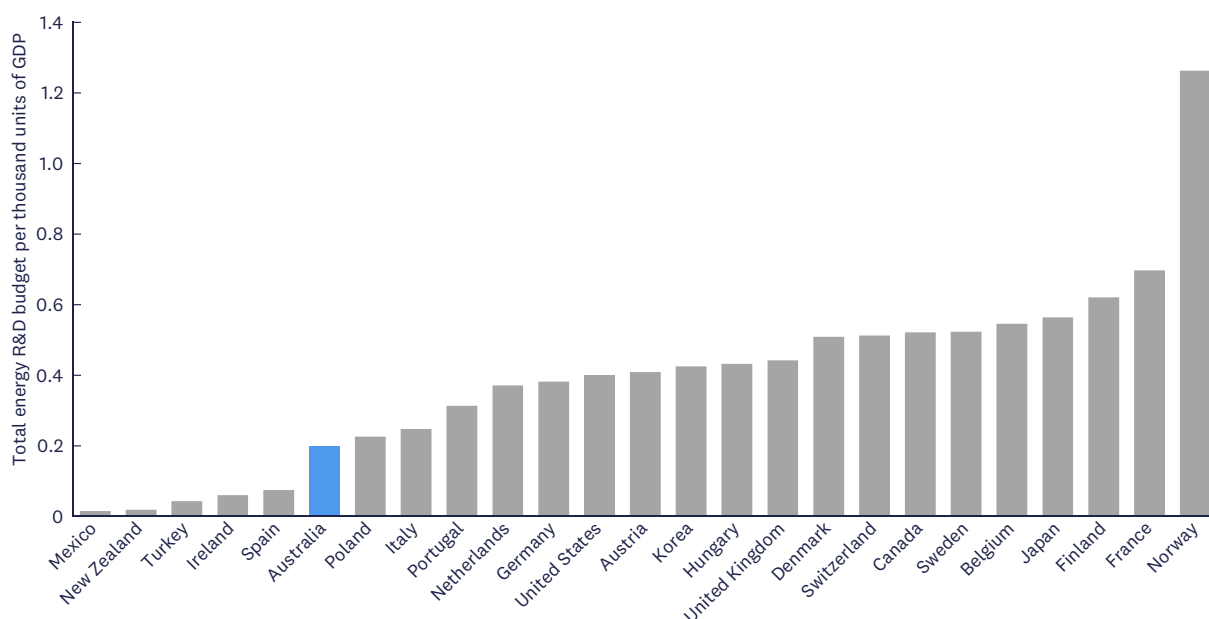


Figure 7 Public energy R&D spend across the OECD (2021)

Source [IEA](#)

Action on climate strengthens our nation

Addressing climate change has to be a global effort. We know that. We're all part of one climate. Australia can no longer be seen as climate laggards. Securing our future in the changing global economy and diplomatic realm requires us to lead. Being late to the party is simply not an option.

We must take into consideration the multifaceted benefits of climate action; from improving our energy security, to avoiding the security risks that climate change heightens, to protecting our sphere of influence, our interests, and ultimately the wellbeing and economic health of all Australians.

Ensuring our place in the global economy is not damaged by a lack of action on climate change

COVID-19 has precipitated a step-change in climate commitments. In addition to the usual leadership from Europe, the US Congress has finally passed a climate bill. The Inflation Reduction Act represents the most significant piece of climate legislation in US history and sets

the country [well on its way](#) to meeting its Paris [emissions reduction target](#). It offers incentives for the uptake of electric vehicles, as well as mechanisms designed to boost US manufacturing and development of clean energy technologies. Not to be outdone, the EU has allocated 30% of its [€1.82-trillion](#) budget to fight climate change. Individual countries in Europe are [investing billions](#) to curb emissions. Even more significantly for some of Australia's key export industries, Chinese President Xi Jinping has announced that China will achieve net zero before 2060.

Carbon abatement is all-encompassing—and game theory will attest that defectors in a public-goods game will be punished accordingly. As our peers intensify their climate action, they have become increasingly intolerant of free riders. On [14 July 2021](#), the EU adopted a proposal for a new Carbon Border Adjustment Mechanism that will put a carbon price on imports. This will ensure ambitious climate action in Europe does not lead to 'carbon leakage'—a scenario where companies transfer production to countries with less-strict emissions reduction policies.

In the US, legislators are [actively considering](#) carbon adjustment fees that would counteract any competitive advantage derived from lax Australian regulation, and the Biden administration has [pledged](#) to utilise trade policy to incentivise climate action. Such policies make sense—ambitious domestic climate policy means little if companies move operations offshore to pollute at will. As these ideas spread, the

decarbonisation of our economy will be important to ensure the competitiveness of Australian exports, manufacturing, and industry.

Australia has secured an impressive suite of [free trade agreements](#) over the past two decades, directly benefiting Australians and advancing our strategic interests. If we are to continue to grow our trade partnerships and exports, we must face up to our international commitments. We cannot afford to be seen as a regional pariah due to a lack of climate action.

Pressure to decarbonise is also increasingly coming from businesses keen to protect their own future profits from climate risk and consumer backlash. Concerns about [climate change and sustainability](#) are growing amongst consumers, whose investment and spending decisions ultimately determine a company's success or failure. Carbon neutrality is now viewed as a selling point and competitive advantage.

[Apple](#) is a prominent mover, committing to be carbon-neutral in both its supply chain and products by 2030. The company already utilises significant recycling, with all of its major devices released in the past year including components made from recycled content. But there is only so much businesses can do independently of government. Without national coordination to reduce the carbon footprint of industry, the competitiveness of Australian businesses will suffer in international markets.

Climate change represents a growing security threat to Australia

While the war in Ukraine has shocked many, the level of global conflict will only [increase](#) with unabated climate change. United Nations Secretary-General António Guterres has outlined that [climate change is one of the biggest dangers to peace](#), and the World Bank has found that climate change could force [216 million people](#) across six world regions to relocate by 2050, 49 million in East Asia and the Pacific.

Climate change is a security threat—and we need to start seeing it that way. Not only could the instability caused by climate change draw us into unnecessary conflict, but it will also likely affect our ability to protect Australian borders. Former Chief of the Defense Force, Admiral Chris Barrie AC, has [outlined](#) that “the failure of leadership and inaction by Australian governments have left our nation ill-prepared for the security implications of devastating climate impacts at home and in the Asia Pacific, the highest-risk region in the world.” It is clear that without adequately addressing climate change, we will imperil our [national security](#).

Action on climate is also needed to reduce the security and safety risk posed by climate change-induced natural disasters. [Tremendous pressure](#) has already been placed on emergency and disaster relief agencies to respond in the face of accelerating climate change impacts. Senior officials within the Australian Defence Force notified the Labor government that they were [in danger of being overwhelmed](#) after being called to respond to “near persistent” natural disasters. The 2019–20 bushfires alone cost Australian agriculture between [four and five billion dollars](#), and the bill for last year’s flooding in Queensland and New South Wales has reached at least [\\$4.8 billion in insured damages](#).

Why we need energy security, and how renewables can ensure it

A secure energy system is fundamental to our economy. Yet we have an energy security problem. The Morrison Government sought to mitigate the issue in 2020 by signing an agreement with the US to [store oil on US soil](#) for access during global emergencies. This seems a somewhat shortsighted approach to secure energy supplies, as it assumes continued access with slow moving oil tankers halfway across the world during an emergency. Compounding the danger, our reserves remain the lowest of any [International Energy Agency \(IEA\) member](#) country. We are throwing more money at the issue—subsidising oil refineries by \$250 million—even though they will not come online for another year.

Renewable energy and green hydrogen—both rapidly falling in cost—offer strong potential to secure our domestic energy supply. Around [90%](#)

[of Australia's petrol supply](#) is imported. This leaves us in a precarious position and makes us vulnerable to surging prices caused by supply chain disruptions. Sourcing more of our energy from renewables reduces the exposure of the Australian economy to price hikes caused by geopolitical conflicts.

The objective of a shift towards [renewables](#) is not only to reduce emissions, but to tap into the competitive and energy independence advantages that come with using renewable energy resources. We should embrace this change, while establishing a clear plan needed to tackle it, in order to secure low-cost, reliable energy. A secure green energy system is fundamental to our economy, enabling us to trade freely, produce low-emission products and exports, and meet our energy security goals.

Regional Australia can benefit

As the global economy reorients itself toward tackling the challenge of decarbonisation and traditional industries begin to face strong headwinds, the government must enable regional Australia to adapt and prosper. Decarbonisation should not be viewed solely as a cost; it also has the potential to offer abundant opportunities for regional workers, businesses, and communities.

We are calling on the government to invest in the regions to kick-start and accelerate the growth of the low-carbon industries that will be the foundation of future economic prosperity. To be clear, we are not advocating for handouts. It would be the height of condescension to regard regional Australia as a charity case. Just as regional Australians built a thriving economy on the back of mining, resource extraction, and fossil fuels in the past, they are more than capable of competing in the industries of the future if given an opportunity.

The emerging clean energy economy offers a window of opportunity for regional Australia. Many of our competitive advantages—including the combination of rich solar and wind resources, abundant [rare earth elements](#), and critical minerals deposits such as lithium—are concentrated in regions where we already have related infrastructure and skills. Thousands of jobs are available in these industries if we take advantage of the opportunity ahead of us. Our vast iron ore reserves and natural advantages in green hydrogen mean Australia is well-positioned to benefit as international demand for metallurgical coal declines in the long run in favour of green steel.

Labor has committed \$525 million to build [regional hydrogen hubs](#) that will be centres of emissions-free manufacturing and export. Some states have already taken steps to fulfil this vision. Queensland's government, in particular,

has put in place a [Hydrogen Industry Strategy](#) that has fuelled significant investment in green hydrogen facilities in the state's Gladstone region.

Fortescue Future Industries' [Global Green Energy Manufacturing Centre](#) will establish Australia's first multi-gigawatt-scale electrolyser factory. Construction of the factory began in [February 2022](#). H2U's [H2Hub Gladstone](#), a \$1.61-billion industrial complex for the production of green hydrogen and ammonia, is expected to be operational by 2025. Stanwell Corporation also has plans to construct the [Central Queensland Green Hydrogen Project](#). The development, which consists of a three-gigawatt green hydrogen electrolysis facility based just south of Gladstone in Aldoga, expects 5,000 new jobs at its peak, and aims to begin production by the middle of the decade before scaling up to its full capacity in the 2030s.

The Hunter Valley in New South Wales is an ideal home for large-scale clean industry. It is blessed with excellent transport infrastructure, a large and skilled workforce, and is in close proximity to the planned [Hunter-Central Coast Renewable Energy Zone](#).

The Hunter Valley region has received [\\$486 million in federal funding](#) to transform it into an industrial hydrogen hub. The first stage of development in the proposed [Hunter Hydrogen Network \(H2N\)](#) aims to produce green hydrogen; the second stage of the project plans to transport the manufactured hydrogen through a pipeline to end-users, both domestic and overseas. The two-billion-dollar network will transform the nation's capacity to transport, produce, and export hydrogen. According to [latest reports](#), New South Wales' hydrogen hubs have already received

eight times more interest than expected, with over four billion dollars in private investment and up to 5,900MW of electrolyser capacity now on the table.

Australia also has an opening to establish itself as a leading supplier of [critical minerals](#)—a globally underdeveloped resource that serves as a key input for low-carbon technologies and other important growth areas like computer chips. The [IEA predicts](#) that mineral requirements for low-carbon technologies are likely to double by 2040, and could almost quadruple if the world manages to achieve its Paris Agreement goals.

Australia is already the [world's largest lithium exporter](#), accounting for [49%](#) of the world's lithium exports in 2020. Australia's earnings from lithium exports are forecast to reach [\\$3.8 billion](#) by 2022–23. As a key component in increasingly important battery technology, lithium is expected to reach a global market size of [\\$162 billion](#) by 2030, growing at a compound annual growth rate of 12.3%.

We are also the [fourth-largest](#) exporter of rare earth elements, used in wind turbines and motors for electric vehicles. By 2040, between 5,400 and 9,450 (depending on policy action) new jobs in critical minerals mining are [projected](#) in Queensland alone.

As this sampling of industries show, rational and economically sensible policy that embraces decarbonisation as an opportunity can facilitate the transformation of historically coal asset-housing regions into centres for new productive industry. No policy is a silver bullet—structural change will always place strain on communities and have speed bumps. But with the appropriate level of action now, the prospect of a bright future is real.

We need to do more this decade

For the 800,000 years prior to industrialisation, atmospheric carbon dioxide (CO₂) had never risen above [300](#) parts per million. As of November 2022, it has skyrocketed to [422](#) parts per million—the highest level since measurements began. The average global temperature has risen by more than [1.1 degrees](#) since 1880, with [19](#) of the hottest years occurring in the 22 years since 2000.

Further action to reduce carbon emissions is clearly in our interests. If current pledges are adhered to (an uncertain prospect) experts estimate an increase in global temperatures of [two or three degrees](#) above pre-industrial levels by 2100, with corresponding catastrophic effects.

Our current warming trajectory will have severe environmental and social impacts. But the economic consequences will be just as dire. The global cost of damage to coastal infrastructure and agricultural land is estimated to exceed [US\\$9.87 trillion](#) by 2050. Australia will bear a particularly heavy cost. [Extreme weather events](#) will grow in frequency and severity, including droughts, bushfires, and floods, resulting in far more [uninsurable land](#). Sea levels are also expected to rise, putting some of Australia's low-lying South Pacific neighbours [at risk of inundation](#), sparking a refugee crisis in our backyard.

What have we committed to?

In 2015, [196 parties](#)—including Australia—met in Paris and committed to reduce emissions to limit global temperature rise to well below two degrees above industrial levels. Since then, Australia has shown some promise, such as during the recent UN Climate Change Conferences (COP), but not enough tangible action has been taken. With climate a top priority for our low-lying neighbours, Australia's regional credentials will depend on our ability to show leadership on climate policy. Doing so will be vital to our diplomatic future, and that of our region.

At COP26 there was an agreement to [enhance](#)

[transparency frameworks](#) for reporting emissions as well as a commitment from [137 countries](#) (including Australia) to “halt and reverse forest loss and land degradation” by 2030. However, Australia has continued to clear native forests at a rapid rate, despite simultaneously making such commitments and acknowledging the importance of forests in carbon mitigation. It has been repeatedly shown that [protecting forests](#) is a far greater means of climate action than planting new trees. More needs to be done domestically to address such contradictions to prevent Australia being seen as a delinquent in global deforestation.

At the subsequent COP27, Australia pledged to develop a [Loss and Damage Fund](#) to provide financial support to the disproportionately affected Global South, who have hardly emitted any carbon dioxide compared to developed nations. Whilst this is promising, the best action we can take to further our interests is to improve our emissions reduction capacity. Our security and prosperity is contingent on good relations with the rest of an increasingly interconnected world. The currency of diplomacy in the coming century will not be access to our traditional energy exports of coal and natural gas, it will be the capacity to solve and mitigate climate related issues and accelerate decarbonisation.

We need to do more

Under the Paris Agreement, Australia committed to reducing our emissions by 26–28% below 2005 levels by 2030, a target that was among the weakest in the developed world. This has been updated by the Albanese government to a 43% emissions reduction target below 2005 levels, [legislated](#) alongside a commitment to reach net-zero emissions by 2050. Whilst certainly an improvement on the Coalition's emission reduction targets, if Labor's policy was replicated in other countries, global temperatures would rise to [the dreaded two degrees Celsius](#). Furthermore, as seen in Figure 8, recent projections have Australia on track to reduce emissions by just 30% by 2030.

According to modelling by the [University of Melbourne](#), for Australia to remain within its remaining two-degree carbon budget, it must reduce emissions by 50% on 2005 levels by 2030, reaching net-zero emissions by 2045 (See Figure 8). To remain within the remaining 1.5-degree carbon budget, the targets would be 74% below 2005 levels by 2030 and net-zero emissions by 2035.

The [Intergovernmental Panel on Climate Change](#) has highlighted the need to act now to avoid detrimental, irreversible impacts. Global warming reaching 1.5 degrees in the near term (2021–40), would cause unavoidable increases in numerous climate hazards and present multiple risks to ecosystems and humans. The UK Met Office has outlined that there's now around a [50%](#) chance that the world will warm by more than 1.5 degrees over the next five years. The study suggests that temperatures between 2022 and 2026 will be 1.1–1.7 degrees higher than pre-industrial levels. Acting swiftly to limit global warming to 1.5 degrees would significantly reduce the projected economic losses and damages related to climate change. However, the window of opportunity is narrowing and without clear, substantive policies, the likelihood of Australia reducing emissions to the extent that is needed is near impossible.

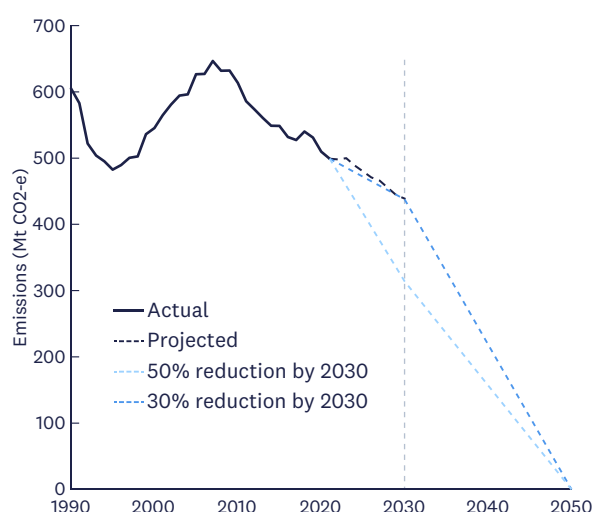


Figure 8 Historical and projected emissions assuming net zero by 2050 (1990–2050)

Source [DISER](#)

Note 2030 targets reflect a reduction in emissions from 2005 levels.



At this stage, we're lagging behind our peers. Most other rich, developed nations achieved much larger reductions in per-capita emissions over the past two decades (see Figure 9a). We began the new millennium as one of the world's highest per-capita emitters, and we ended its first two decades having made among the least progress (see Figure 9b). Over the 2000–19 period, Australia's total per-capita emissions were higher than every other developed nation other than Luxembourg, a country of 600,000. Over that time, our per-capita emissions exceeded even those of Canada and the US, the other two global outliers.

Failing to act could cost us [\\$129 billion per year](#) by 2100. Reform can unlock the economic potential of our abundant natural resources, create new industries, and propel our economy into the future. And while some may have grand plans—this goal should be achieved at minimum economic cost.

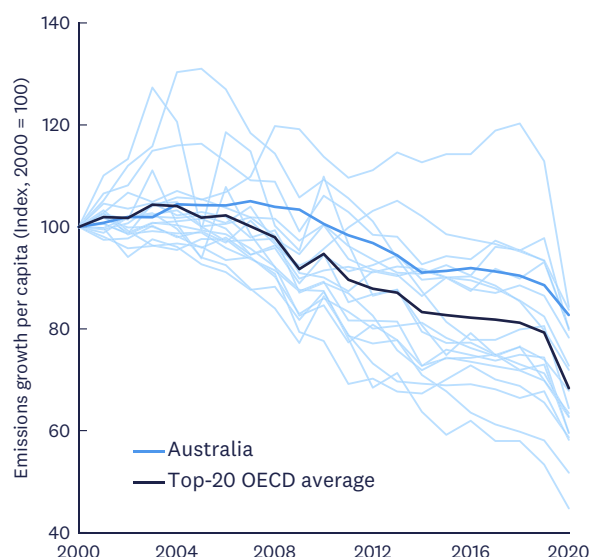


Figure 9a Total emissions per capita (2000–2020)

Source [Eurostat](#), [WorldBank](#)

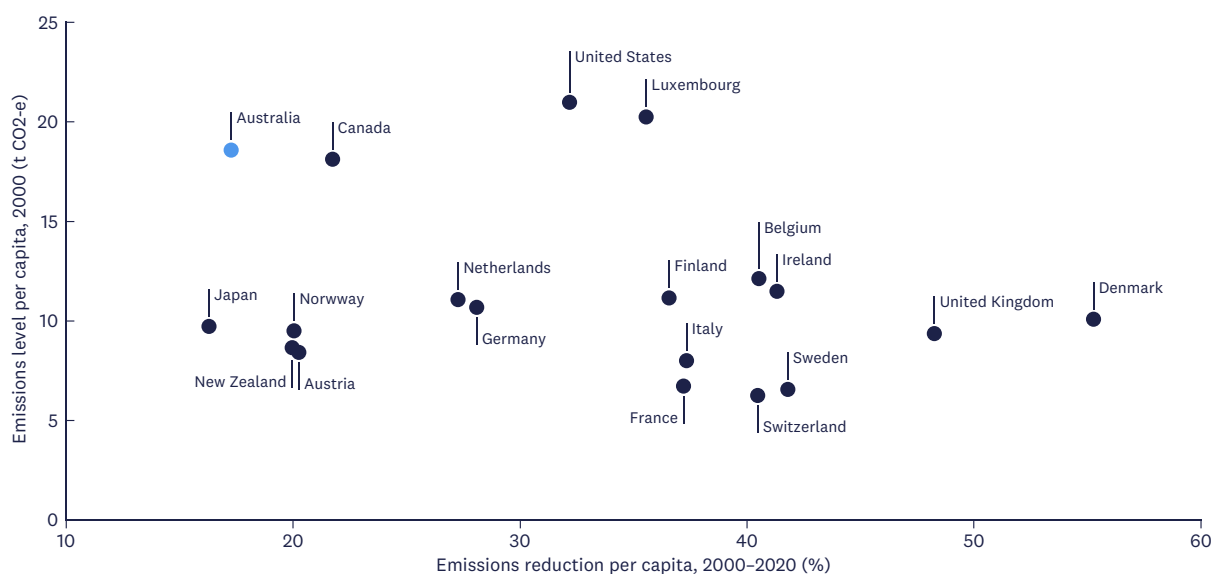


Figure 9b Emissions reduction per capita compared to 2000 levels

Source [Eurostat](#), [WorldBank](#)

Does any party have the blueprint we need?

The 2022 Federal Election was the climate election that few people saw coming. Unlike previous campaigns, where Labor and the Coalition clashed vociferously over the risks and opportunities of climate action, neither party offered Australians a clear vision in 2022 in this policy space.

Albanese sent mixed signals—promising to make Australia a “renewable energy superpower”, while also pledging to exempt coal from emission reductions targets and [support](#) new coal and gas mine openings. Morrison delivered the Coalition’s first commitment to net zero, but offered little in the way of meaningful action—promising to “[\[establish\] Australia as a leader in low emissions technology](#)”, but cutting clean energy R&D and [intervening](#) in the market to prevent coal-fired power generators from closing.

A strong vote for either of the major parties would not have delivered much clarity or insight into the electorate’s expectations on climate.

It is therefore telling that the two major parties returned their worst primary votes on record, while an unprecedented number of Greens and climate-focused independents swept into Parliament. The electorate—who [we know](#) wants to see action on climate change—were unimpressed by both the Coalition and Labor’s respective climate policy platforms. In regional seats, [75%](#) of Nationals MPs suffered negative swings. The only three to achieve gains above 1.5% were those who managed to distance themselves from their party room on climate—Darren Chester in Gippsland, Kevin Hogan in Page, and Anne Webster in Mallee.

However, for those of us interested in outcomes, climate platforms offered by Greens and ‘Teal’ candidates—where they had one—were often impractical. As illustrated below, the Greens’ policy agenda is divorced from the financial realities of government, committing a volume of government spending that is unnecessary and unattainable. The ‘Teals’ have strong targets, but little in the way of actionable policy to

deliver economic growth, adaptation, necessary technology breakthroughs, and emissions reductions.

The Coalition

The 2022 Federal Election was the first to feature a bipartisan [pledge](#) to achieve ‘net-zero emissions by 2050’. However, the Coalition’s ‘[Long Term Emissions Reduction Plan](#)’ (the Plan) contained no new policies—it was more of a centralisation of existing programs run brought together under a single headline. Lacking any new policies, there were serious questions to be raised as to whether the Plan contained the genuine intent and scale of action required to deliver net zero by 2050.

At its essence, the Plan relied on voluntary action by businesses to decarbonise the economy, with uptake incentivised by policies designed to bring low-emissions technologies to cost competitiveness. Although the Coalition is right to emphasise the importance of technology, the Plan lacked the incentives and investment that is necessary to achieve net zero. This is for three primary reasons.

1. The Coalition had previously done little to support innovation in emissions-reducing technologies, gravely underdelivering on R&D funding for renewables. During its time in government, it oversaw the [lowest](#) level of public R&D investment in renewables since 2006, including a [collapse](#) from \$605 million in 2013 to \$41.5 million in 2021. The Coalition allocated just \$1.62 billion when refunding ARENA, an institution that accelerates early innovation in renewables, through 2032—constituting a [\\$900-million](#) cut relative to the preceding 10-year funding cycle.
2. The Plan relied on overly ambitious international and domestic offsets for 10–20% of the emissions reduction task. Some of the Coalition’s expectations around what can be achieved through carbon offsets

were grossly exaggerated. For example, its per-hectare estimate of the amount of carbon abated through changes in land management has been [criticised](#) for being significantly overstated. What's more, the Australian carbon credit market has been exposed for lacking integrity—a former head of the Emissions Reduction Assurance Committee, Andrew Macintosh, has said that as much as 80% of the carbon credits issued by the Australian Clean Energy Regulator were tied to [“flawed”](#) projects. Questions remain as to whether the offsets banked by the Coalition's plan would deliver real emissions reductions.

3. While claiming to represent a pro-market approach to decarbonisation, the Coalition maintained several interventionist policies that undermined the free market—artificially preserving the competitiveness of high-emitting industries. This included [\\$50.3 million](#) in new support for seven gas projects announced in the 2022 Federal Budget and an effort from energy minister Angus Taylor to [force uncompetitive coal-fired power generators to keep running](#) by extending the mandatory closure warning notice period.

The Coalition's other key policy instrument for driving emissions reduction was the Safeguard Mechanism. The Safeguard Mechanism applies to facilities that emit more than 100,000 tonnes of greenhouse gas a year. It requires them to offset any emissions above their set baseline by surrendering carbon credits. However, the Safeguard Mechanism has not delivered emissions reductions under the Coalition. In fact, emissions from the covered facilities have increased by [seven percent](#) since the mechanism was introduced. This is because the Coalition did not enforce [limits](#) that would actually require facilities to reduce their emissions.

The Coalition's [plan](#) to decarbonise transport also failed in ambition due to a mediocre scale of investment in schemes that did indeed represent good policy. For example, just [\\$25 million](#) of the \$250 million earmarked for electric vehicle charging stations had been allocated by the 2022 Federal Election. In comparison, New South Wales and Western Australia state governments have each allocated just as much, if not more. Other countries are investing on a scale that

the Coalition should have. For example, the Conservative Government in the UK committed [\\$2.8 billion](#) in government spending for 300,000 public chargers by 2030 and [\\$1.6 billion](#) for 6,000 superfast chargers by 2035. And while the Coalition invested [\\$20 million](#) in funding to agricultural innovation hubs, this investment is clearly not enough, with the National Farmers Federation [criticising](#) the lack of a “plan for agriculture and climate change”.

Put simply, the Coalition's emissions reduction plan lacks the ambition, policy instruments, and market signals needed to deliver net zero by 2050. While the talking points were convincing to some, the Coalition did not have the policy to back them up.

Labor

The Albanese Government has enacted an increased emissions reduction target of 43% from 2005 levels by 2030, and has legislated the commitment to achieve net zero by 2050. However, some of Labor's flagship policies are ineffectual, and overly reliant on government intervention and public funds.

Labor has pledged to adopt and expand two of the Coalition's established policy instruments to extract deeper emissions cuts. First, this includes delivering three billion dollars in additional spending on new energy industries, including many of those technologies targeted in the Coalition's ‘Investment Roadmap’—namely, green metals, clean energy manufacturing, hydrogen, carbon farming, and waste reduction.

While this increased scale of investment is to be welcomed, especially in R&D, some of the outlined spending does not represent a prudent use of taxpayer funds. For example, Labor's [plan](#) to create a battery manufacturing industry in Australia is a distraction detached from economic reality. China dominates the lithium battery manufacturing industry for a reason. Over the past decade, it has spent somewhere between [\\$82 and \\$137 billion](#), enabling them to build a robust lithium supply chain. When even the US is failing to arrest a small share of China's foothold, the prospect of Australia doing so is fanciful.

Second, Labor will strengthen the Safeguard

Mechanism, in line with the Business Council of Australia's [proposal](#) to reduce emissions baselines predictably and gradually over time. Covered facilities will be required to reduce aggregate emissions by five million tonnes per year to collectively achieve net zero by 2050. Notably, Labor has said that coal mines will be [exempt](#) from the policy, and thereby won't have to buy carbon credits or reduce their emissions in line with other big polluters.

Given the relevant political constraints, this is a viable and pragmatic avenue to match policy settings with the business sector's progress and ambition on emissions reductions. It will guarantee more significant emissions reductions from the big emitters. Nonetheless, the mechanism would probably need to be tightened further and expanded to include more facilities in order to deliver net-zero emissions by 2050.

At a local level, Labor's plan to construct 400 new community batteries and 85 new solar banks is commendable. It will unlock access to community rooftop solar for renters and households that cannot afford to invest in panels themselves. It will also help decentralise the energy grid and reduce reliance on baseload coal- and gas-fired generation.

To achieve faster emissions reductions than the Coalition in the energy sector, Labor's '[Rewiring the Nation](#)' policy commits a further \$20 billion to transmission infrastructure. New low-cost loans will support the construction of transmission assets recommended by AEMO. Labor predicts that this policy will allow more new renewable capacity to come online sooner and deliver an energy grid that is 82% renewable by 2030. We agree that the transmission network must be improved and expanded to support a cleaner and more efficient energy grid. But Labor's proposal will not address the [true and relevant obstacles](#), despite significant public outlay.

There is ample private capital ready and able to fund transmission infrastructure. The bigger problem is with the existing regulatory settings and large upfront costs with no guarantee of project approval—disincentivising investors. This is the market failure—not the ability to access debt—which is slowing our ability to expand renewables capacity. The government should not waste taxpayer money where private capital is

available, but instead cover the cost of necessary pre-approval tests, allowing private capital to flow.

In addition to the above policy flaws in transmission, Labor has very little to offer by way of enabling regional communities to participate in the emerging clean economy. Like the Coalition, it lacks plans to manage the accelerating closure of the nation's coal-fired generators—and support the communities who rely on this employment.

Labor's decision to cut \$1.4 billion from regional areas in the October Budget, and then to label that spend as a 'rort', evidences an ideologically driven blindspot that has the capacity to severely hinder Australia's efforts to achieve net zero. Labor has never been particularly electorally competitive in regional, rural, and remote Australia. Yet this should not result in neglect for 'the bush' when it comes to investment.

Ultimately, the regions are critical to efforts to decarbonise our economy. Transmission infrastructure will be built in regional areas. Regional centres will be the most affected by the exit of coal from the grid. Large solar and onshore wind farms will predominantly be built outside of our major metropolitan areas. Labor must have the right investment strategies in place to ensure that the transition to a zero-emissions economy creates economic opportunity for regional Australia. The Government's promise to spend three billion dollars from the [National Reconstruction Fund](#) in regional areas to "support renewables manufacturing and the deployment of low-emissions technologies" is a start—but more (prudent) spending is needed.

The Greens

The '[Powering Past Coal And Gas](#)' policy taken by the Greens to the 2022 Federal Election adopted two key targets: a 75% emissions reduction by 2030, and net-zero emissions by 2035. Climate scientists have [noted](#) that this is the most likely of all the party platforms to limit global warming to 1.5 degrees—the target stipulated in the [Paris Agreement](#). However, the Greens' policy calls for a scale of public spending and government intervention that is not fiscally or politically achievable. Altogether, its climate agenda amounts to at least \$169 billion in new spending.

For scale, the new spending commitments identifiable in Labor's climate policy tally to around [\\$25 billion](#).

The Greens only offer a series of thinly substantiated budget line items to recover their exorbitant spending—they suggest cutting coal, oil, and gas subsidies, imposing a new coal exports levy, and imposing new taxes and royalties on gas exporters.

The Greens' careless attitude to fiscal constraints is evident in the party's proposed 10-year, 50% [wage subsidy](#) for companies that employ former coal workers. Regional communities will undoubtedly need support as we lower emissions, but a decade of subsidies for up to 50,000 people currently employed in coal industries would be an extraordinarily expensive and unnecessary state intervention when far more fiscally responsible options exist to deliver similar outcomes.

The regions already have strong opportunities to thrive in a decarbonised economy. It is more efficient and sustainable to create economic growth and employment through private-sector investment and activity, than for the government to inject an artificial, temporary level of economic stability through subsidies. The government is far better placed to provide focused and targeted support to help regional communities to leverage their established infrastructure and workforce advantages for a share in new low-emissions industries.

There are abundant opportunities in the clean economy for traditional coal regions that can provide lasting, sustainable economic growth and reliable employment. The Greens have overcompensated for their detachment from regional communities by promising a scale of support that entirely undervalues the capacity of these communities to adapt. It would be far more efficient and productive for the government to help low-carbon industries set up in regional areas and provide a new source of employment.

In 2009, the Greens—demonstrating their inability to decide whether they are a party of subversive protest, or one fit for government—committed one of Australia's greatest climate betrayals by [voting down](#) the Rudd Government's emissions trading scheme. Had it passed, the scheme would have averted hundreds of millions

of additional tonnes of carbon pollution, and set the nation on a strong emissions reduction trajectory. It also likely would have averted a decade of inaction and climate warring, as an emissions trading scheme was agreed upon in principle by the major parties, with the policy design the key issue of dispute.

The Greens' lack of pragmatism is again evident in their 2022 climate platform. They fail to account for the fact that the world still lacks the technical capability to achieve net zero—and the party doesn't illustrate how it will bridge that gap by 2035. Attempting to force unrealistic emissions reductions outcomes over the shorter timeline will divert resources from technologies with longer lead times that will be essential to achieving 2050 objectives. What's more, an essential aspect of its plan to achieve net zero by 2035—100 million tonnes of 'negative emissions'—lacks any level of detail.

Burdened by their hostility toward the free market and the private sector, the Greens gravely discount the central role markets will play in helping to decarbonise the global economy. Their policy platform wants to [expand and retask](#) the Commonwealth-owned Snowy Hydro as Clean Energy Australia, and make it responsible for building and operating 25GW of renewable energy and storage in eight years. Nationalisation in the energy market is wholly unnecessary. It would simply increase cost and inefficiency in a market where private investors are already eager to support the uptake of renewables, should they be provided the right conditions. The same is the case for their [proposed](#) \$25-billion FutureGrid fund, which would upgrade and build new, publicly owned transmission lines and interconnectors.

At present, no party has the platform required to deliver consistent policy direction for reducing emissions across the entire economy. Governments can't pick and choose areas they want to focus on—we need a complete set of policies encompassing the array of areas needed for Australia to achieve prosperity in a net-zero future.

No one has the policy platform needed to help regional communities thrive

For too long, policymakers have ignored and dismissed the interests and concerns of regional communities most exposed to the economic effects, either beneficial or negative, of decarbonisation and climate change.

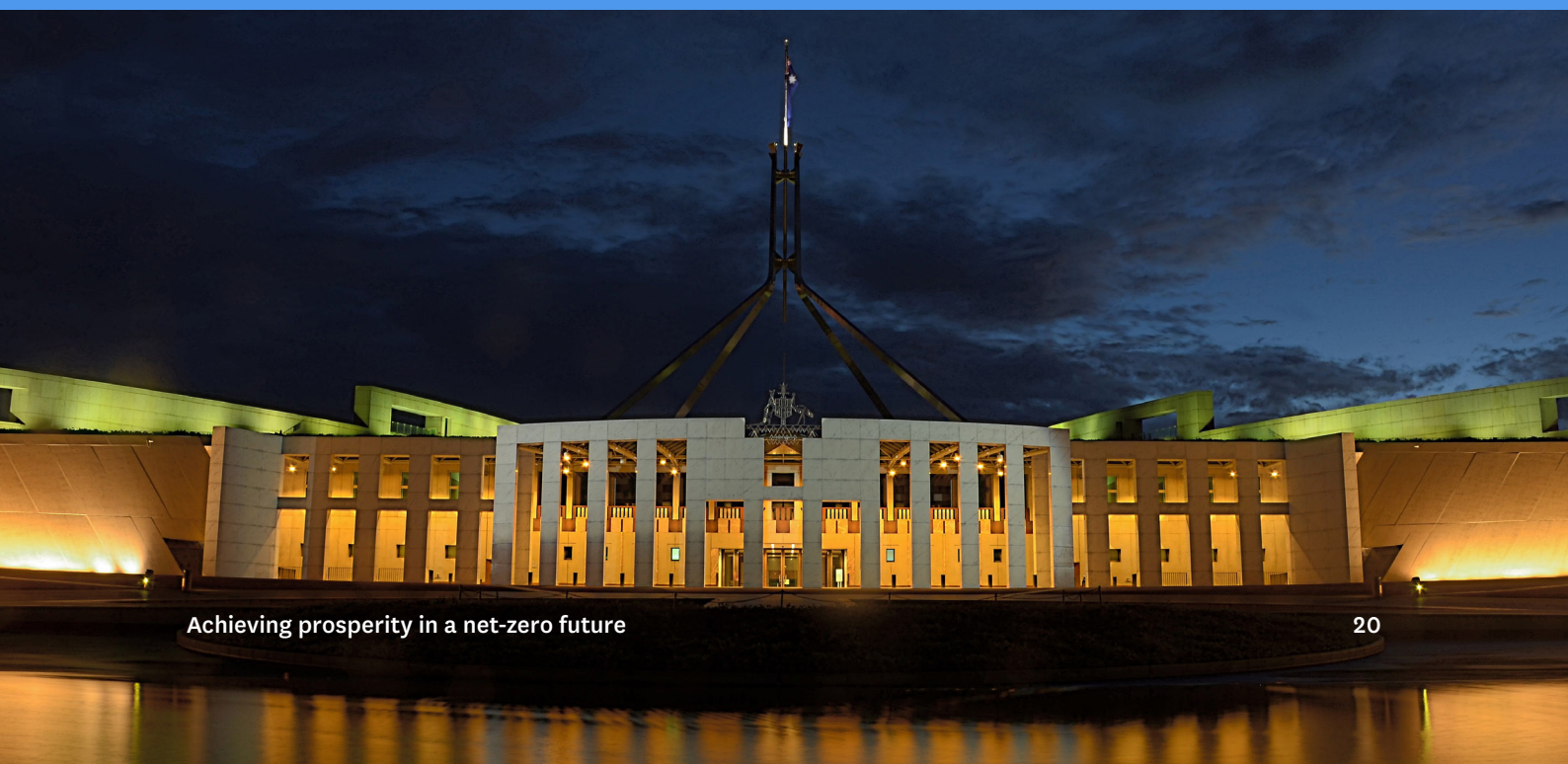
The task for prudent and responsible governments is to enable regional Australia to prepare for and seize new sustainable growth opportunities in the clean economy. Other countries are moving rapidly to help their regions adapt. In 2018, Germany created its Commission on Growth, Structural Change and Employment with a focus on economic diversification in traditional coal regions, while state and federal policymakers have committed a combined \$64 billion to support diversification initiatives. In the US, the Partnerships for Opportunity and Workforce and Economic Revitalisation Initiative has funnelled over \$328 million into almost 300 projects covering more than 350 coal communities across 13 states.

Unlike our peers, Australia has no focused initiatives to support the diversification of traditional coal regions. Protecting traditional carbon-intensive regional industries only kicks the can down the road, and leaves us underprepared to adapt and take advantage of the opportunities available. The Coalition, rather than work proactively to coordinate the inevitable

and accelerating closure of coal-fired power generators, has tried to intervene in the market to keep them running on fumes. Its smaller sibling, The National Party, the only major party devoted to our regions, similarly exhibits a long-standing knack for obfuscating and dodging any ‘real talk’ with its constituents over climate policy, just as they face increasingly severe weather events.

Despite having few seats in the bush or regional areas, Labor must not let this excuse them from their obligation to govern on the behalf of all Australians. Failure to do so would reinforce the trope of Labor as a party for the metropolitan voter. Those most exposed to climate change’s risks and our nation’s decarbonisation effort deserve to be heard, spoken with, and supported in a respectful and appropriate manner.

Regional Australia can benefit enormously from action on climate and our changing economy. Improving the lives of regional Australians over the next decade is necessarily tied to our ability to take advantage of the opportunities presented by new markets and industries. Embracing market-friendly policies, with targeted support, will enable our regions to adapt and flourish in a net-zero economy. It’s time for our regional politicians to embrace these new opportunities like their constituents already do.



A market-friendly climate and energy blueprint for the 47th Parliament

Unlocking our economic potential—Cheap and reliable electricity to allow businesses to flourish and keep household prices low

1. Implement Blueprint's Coal-Generation Phasedown Mechanism to produce a coal-free grid by 2035
2. Fund expedited pre-final investment decision 'early works' processes for transmission infrastructure to crowd-in private investment
3. Institute capacity payments for new, low-emissions intensity dispatchable capacity only

Allowing business to lead—ensuring Australia is a hub for green tech

4. Double energy R&D spending to \$900 million a year, investing in the following promising areas:
 - a. Battery and hydrogen technology for use as a diesel alternative in mining and agriculture
 - b. Allocate an additional \$20 million to expand existing agricultural innovation hubs as centres for zero-emissions technology development and implementation
 - c. Increase R&D funding for green hydrogen by \$100 million per year
 - d. Fund pilot studies for green metals manufacturing
 - e. Critical minerals—focusing on refining to capture more of the lithium value chain
5. Implement mandatory reporting on Climate-related Financial Disclosures
6. Invest in the decarbonisation of transport
 - a. Federal investment of \$875 million through 2030 in fast charging infrastructure
 - b. Reforming regulations and tax arrangements
 - i. Updating the luxury car tax to encourage the purchase of low-emissions vehicles
 - ii. Increase heavy vehicle width limit to 2.6 metres and increase weight limit for zero-emissions models
 - iii. Provide a stamp duty waiver for zero-emissions and registered second-hand diesel heavy vehicles

Securing Australia's place in the world

7. Adopt a bipartisan commitment to the 2030 emissions reduction target
8. Bid to host COP29 alongside the Pacific Islands
9. Establish a true Research Institute for Sudden Catastrophes

Enabling regional adaptation to take advantage of new opportunities

10. Support a national coal infrastructure renewal and repurpose strategy
11. Establish Coal adaptation authorities
12. Create start-up incubators in regional communities with favourable seed funding
13. Support regions with short-term labour market support
 - a. Locally staffed employment and information hubs
 - b. Expanded financial incentives for part- and full-time certification and upskilling through existing external providers
 - c. Last-resort early retirement packages for workers aged over 60

A word on inflation and government spending

Cost-of-living pressures were a key voter concern in the recent federal election, and there certainly is a rational basis for anxiety as inflation—7.3%—outpaces wage growth—3.1%. So why are we calling for additional government spending? Won't that just add to inflationary pressures?

First, it is important to put our proposed spending in context. We are calling for the government to spend over an extended period of time. Inflation may be high now, but that does not necessarily mean it will be high a few years from now, when the bulk of our proposed spending occurs. In the context of Australia's three-trillion-dollar economy, such targeted spending over an extended period of time is unlikely to significantly add to inflation.

More than the quantity of spending, the quality of spending matters. These proposals are not politically motivated, one-time handouts akin to those in the Morrison government's final, pre-election budget. Rather, as we have attempted to show throughout the document, our proposed spending enables opportunity—it increases our productive capacity and supports wealth generation over the medium to long term. The return on investment is significant—while the cost of inaction and climate disaster is huge, the opportunities available if we adopt the policy settings necessary to lean into the change are just as large. These proposals enable Australians to achieve prosperity and security in a net-zero future. That is worth every penny.

Unlocking our economic potential

Cheap and reliable electricity to allow business to flourish and keep household prices low

The electricity sector is undergoing rapid change as cheap renewables outcompete legacy coal-fired generators. Based on economics alone, coal's exit from Australia's grid is inevitable. Achieving an orderly exit, however, is a challenge. With numerous, unexpected announcements of hastened coal generator closures, the precise timing of coal's exit is uncertain. And without certainty, private capital is hesitant to allocate the funds necessary to create the reliable, abundant, and cheap electricity grid that renewable technology has the potential to offer.

Reforming our electricity sector can unlock the economic potential of our abundant natural resources, create new industries, and propel our economy into the future. Appropriate policy settings can break down the barriers holding back our economy—overcoming stagnant investment in transmission, employment risks in regional communities with coal assets, and threats to the reliability of our electricity supply. Our goal should be to reliably achieve a coal-free, low-emissions grid at minimum economic cost.

We cannot afford to re-learn the lessons of the past; the benefits of the NEM are worth preserving

In its first decade, the National Electricity Market (NEM) was a pro-market success. Upon commencement in 1998, the NEM dissolved vertically integrated state-based monopolies into competitive wholesale and retail components, enabling trade across the eastern seaboard. It was established to deliver key objectives which included reliability, security, greater efficiency, and lower costs. Through this coal-dominated period, the NEM delivered reliable supply and reasonable spot prices.

However, the following decade saw the beginnings of a shift toward renewables which, marred by a lack of effective and timely political leadership and regulatory reform, ultimately culminated in turmoil. Now, the NEM is in a crisis—punctuated by AEMO’s unprecedented suspension of the spot market on 16 June 2022. Some states are seemingly deciding to go their own way, ‘giving up’ on the NEM.

Victorian Premier Daniel Andrews has pledged one billion dollars of public funds to deliver 4.5 gigawatts of renewable energy over the next decade—creating close to 60,000 jobs to replace capacity generated from the Loy Yang plant before its 2035 closure. Importantly, \$20 million of this will be allocated to revive the State Electricity Commission (SEC). The SEC will consider becoming a publicly-owned energy retailer, retaining a 51% controlling stake in wind and solar projects—pursuant to Victoria’s ambitious offshore wind generation targets. This follows similarly significant initiatives in New South Wales and Queensland.

Frustration at the state level is justified—in the last decade, inaction and delay at the federal level has forced the hands of some states. But the diagnosis that the NEM’s current failure can be chalked up to an inherent flaw of a market-based electricity system is incorrect. Instead, the current energy crisis is, at its core, a consequence of a decade of political and regulatory inaction, resulting in the failure to reform the NEM into a system fit to facilitate the shift to tomorrow’s renewable-dominated energy system.

We have arrived at a critical juncture. We have seen a recent and growing inclination at a state level to invest heavily in bespoke, state-tailored approaches to decarbonising the energy grid. But Australia will suffer if we abandon the NEM and allow states to forge their own individual routes, marking a return to pre-1990, state-level electricity markets.

The absence of a cohesive national plan will mean each state will spend more—costs that will ultimately be transferred to the consumer and the taxpayer—as they look to build their own electricity system, bespoke to meet their individual storage and generation needs. Much like in the archaic system that preceded the NEM, the initial disregard for the efficiency gains that nation-wide collaboration and compatibility can deliver will become a significant source of regret.

Going down this state-financed path also means that taxpayers—not private investors—are burdened with risk. Vast, geographically concentrated renewables projects are not diversified investments. They add a significant dose of correlated risk to the public balance sheet, which governments are simply not positioned to price or handle. The private sector is more appropriately equipped to take on this type of risk.

Renewable projects often suffer from significant regulatory barriers, long lead times, and unanticipated risk. The private sector is only willing to bear the capital risk for such projects at a reasonable price because of the expectation for stable, and predictable regulations. Heavy-handed, unpredictable, and sudden government intervention—like the proposals in Victoria—undermines that hard-won and easily-lost reputation.

The loss of private capital does not just constitute a financial problem; large infrastructure projects have a tendency to blow past deadlines and cost projections due to their complexity—renewable energy projects being no exception. Without private-sector expertise, energy ministers and

state monopolies alone simply do not have the know-how to manage these intricate projects. It takes a balance of accountability and close collaboration between a diverse range of stakeholders from government, industry, and the local community, and even at the best of times this is no guarantee of smooth sailing.

Rather than repeat the mistakes of the past, we call on regulators, state governments, and the Federal Government to cooperate and expeditiously implement the reforms we outline in the policy prescriptions below. These long-overdue reforms will allow the NEM to achieve a decarbonised grid paired with a market-based system that allows for efficient price discovery, investment, and trade across the eastern seaboard.

Policy Suggestion 1: Implement Blueprint's Coal-Generation Phasedown Mechanism to coordinate coal's orderly exit from the NEM by 2035

Coal-fired electricity generation in Australia has begun its inevitable demise. A flurry of state-led announcements in recent months has seen Australia firm its pathway to renewables. Australia's most coal-dependent state, Queensland, has recently announced that they will be [phasing out coal-fired power by 2035](#). Premier Anastacia Palaszczuk has committed to legislating that 70% of the state's electricity will come from renewables by 2032, rising to 80% by 2035. This follows statements by the [New South Wales](#) and [Victorian governments](#) to also bring a swift end to their reliance on coal-fired generation.

Whilst states should be praised for taking initiative toward climate action, the NEM could descend into chaos without the staggered coordination of coal-fired generator closures. To ensure system-wide reliability, the Federal Government needs to provide coordination to safeguard against disjointed action on behalf of individual states.

Coal-fired generation is the single largest source of Australia's emissions. It accounts for more than [90%](#) of the electricity sector's emissions. Electricity is also the lowest-hanging fruit in Australia's decarbonisation challenge, since its

emissions can be reduced relatively cheaply and on a large scale (indeed, one can often turn a profit doing so). Private companies are building ever-more wind and solar, and the long-run outlook for owners of coal-fired power stations [is grim](#). Before the recent fossil-fuel price shock, rapid uptake of solar and wind had driven power prices to [near-record lows](#), eroding the profits of coal-fired generators that lack the flexibility to remain competitive.

Some private investors are even beginning to conclude that an accelerated coal shutdown would be in their long-term financial interests. For example, Atlassian founder Mike Cannon-Brookes has [bought a substantial stake in AGL](#) and put forth a plan to retire its coal generators by 2035 at the latest. The company recently announced plans to close its largest gas-fired power station in South Australia [as early as 2026](#). While there is real merit to his plan, individual action—even by those of great wealth—is no substitute for the certainty that federal government leadership and policy can provide.

Spiking electricity prices—caused by unreliable fossil fuel generation and leaping gas costs—have magnified Australia's need to accelerate the shift to renewables. While wholesale electricity costs have increased substantially NEM-wide ([three times higher](#) than the third quarter of 2021), it is a state dependent on black coal—Queensland—that has seen the worst rise, an astonishing [five-fold jump](#) in less than 18 months. Meanwhile, residents of the Australian Capital Territory, which is wholly powered by renewables, are

actually seeing their [electricity bills fall](#) just as the rest of the country experiences sticker-shock.

AEMO has pointed to [breakdowns at black coal-fired generators](#) in New South Wales and Queensland as a significant factor leading to [higher electricity prices](#) in those states over others in the NEM. The frequency and impact of these unexpected outages have risen over the years (see Figure 10) and we should only expect them to increase as our coal generators age.

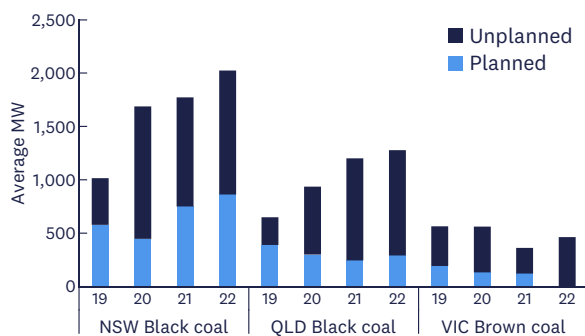


Figure 10 Coal generator outages in the NEM (First quarters of 2019–2022)

Source [AEMO](#)

The fate of coal-fired generation is already sealed. The only questions are when and how generator closures will occur. Uncertainty over the answers impedes the investments required for the grid to maintain reliability. But careful policy design could allow coal plant operators to bow out of the market gracefully. And doing so goes hand-in-hand with emissions reductions.

The federal government should coordinate an orderly phasedown of coal-fired generation. Blueprint's [previous work](#) outlines a Coal-Generation Phasedown Mechanism (CPM) to achieve just that. The mechanism incorporates elements of the Emissions Reduction Fund and Safeguard Mechanism, and would be managed by the Clean Energy Regulator. The Institute for Energy Economics and Financial Analysis [has outlined](#) the feasibility of this plan.

The CPM would establish emissions targets—dated 2027, 2029, and every two years to 2035—for the coal-fired electricity sector. They would be used to phase down coal-fired generation to achieve a coal-free grid by 2035. This would be accomplished through the allocation of emissions contracts via auction, equal in volume and expiration to each of the emissions targets. While the contracts would be for emissions, this maps to a known quantity of electricity supply for each generator, based on their emissions intensity. This would both guarantee a minimum supply of electricity up to a given point in time, as well as a certain emissions reduction beyond it. The targets could easily be adjusted if needed. A worked example of the impact of the CPM is outlined in Figure 11.

This worked example achieves a coal-free NEM by 2035. The estimated emissions reduction under this scenario amounts to approximately 306 million tonnes of carbon dioxide equivalent.

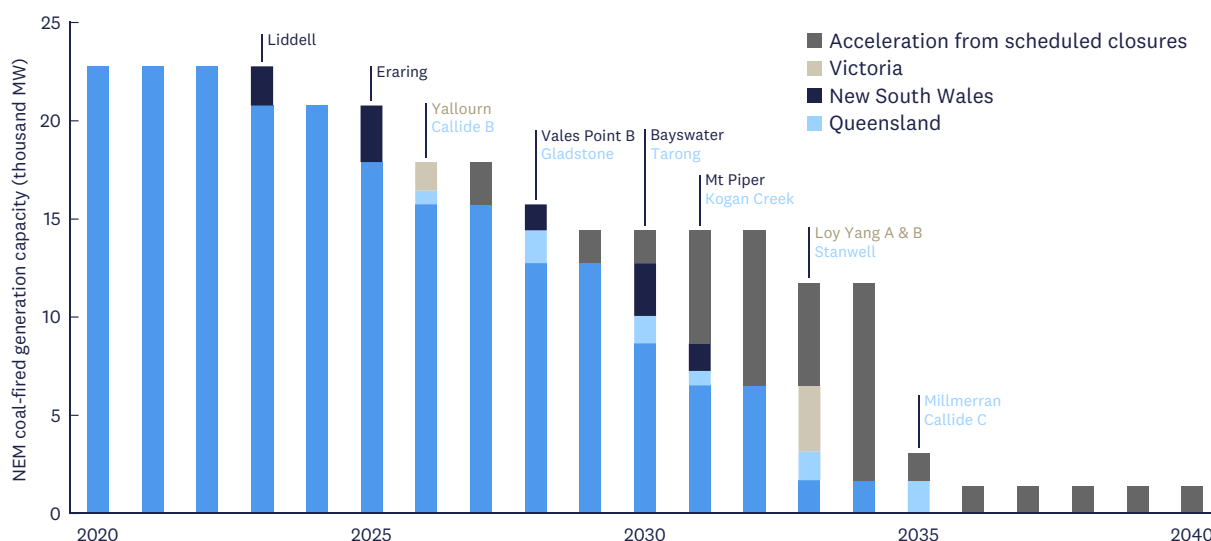


Figure 11 A worked example of the CPM and associated capacity reduction in coal-fired generation

Source [AEMO](#), Blueprint Institute Analysis

Note Example generators have been chosen based on their short-run marginal cost and their approximate remaining life. Those with a lower short-run marginal cost and a longer remaining life have greater incentives to take part in the auction mechanism.

The CPM would require coal-fired generators to produce the designated level of emissions up to contract expiration. With the swathe of expedited closure dates announced across the NEM, including Queensland's commitment to be coal-free by 2035, the CPM would leverage market forces to organise closures in order to ensure an orderly withdrawal of supply. This would mitigate the risk of supply shortages across the NEM, protecting the security and reliability of the system.

State-tailored closure schedules without coordination threaten the security and reliability of supply. Figure 11 demonstrates the perils of an uncoordinated phasedown of coal-fired generators, with a sudden 10,000MW reduction in capacity in 2035. An important feature of the CPM is that it delivers an implicit gradual phasedown period for generators via the established biannual emissions targets. This will ensure that the phasedown does not compromise generation capacity and reliable supply.

The CPM would be designed to elicit information about the generators that only they know. If the government knew this information, then this whole process would be unnecessary—they would

know which plants were the least economically viable, and could set about picking generators to close. The CPM recognises that the government is not well placed to pick losers. It harnesses market forces to induce the least-viable plants to pick themselves.

At a given marginal cost of generation, the scheme would automatically favour the withdrawal of more emissions-intensive coal from the grid. This is relevant due to the presence of both black and brown coal in our energy mix—the latter concentrated in Victoria's Latrobe Valley.

Although brown coal-fired generators enjoy lower costs and higher margins in the absence of a cost of carbon, their emissions intensity is significantly higher. By focusing on emissions rather than capacity, the scheme would impose an implicit cost on the carbon of coal-fired electricity generation. This would disfavour coal relative to all other forms of generation. And amongst coal-fired generators, it would disfavour the most emissions-intensive plants. As shown in Figure 12, even a modest implicit cost of carbon of \$25 per tonne would eliminate the cost differential between black and brown coal.

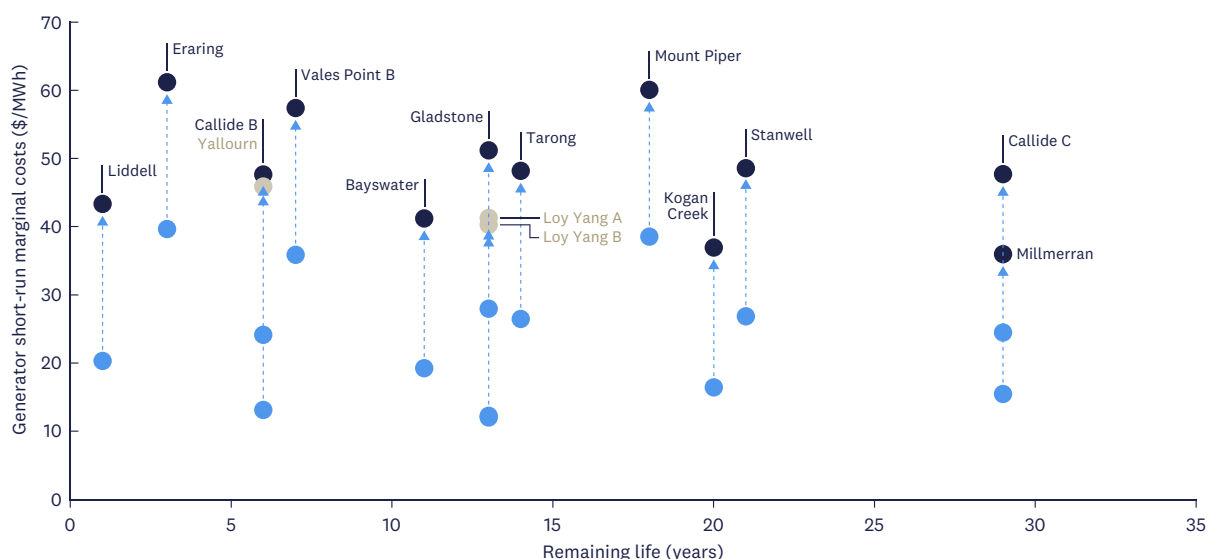


Figure 12 Australian coal generators remaining life, short-run marginal costs & emissions intensity

Source [AEMO](#), Blueprint Institute Analysis

Note Remaining life is calculated according to generators' expected closure year published by AEMO. Brown dots represent brown coal-fired generators & dark blue dots represent black coal-fired generators. Upper dots include the additional marginal cost of an implicit \$25/t CO₂-e carbon price, calculated as \$25/t CO₂-e multiplied by emissions intensity (t CO₂-e/MWh). Figure 12 assumes constant marginal cost.

The CPM can ensure that costs imposed on the workers directly affected by coal-fired generator closures are kept to a minimum. The government should tie to each emissions contract a set of obligations to workers upon the expiry of the contract. Workers should be given the option of being redeployed at an alternative site if feasible, and provided with generous retraining and remuneration arrangements if separation is necessary. Queensland have already announced a [\\$150-million job security guarantee](#) to workers at the state's eight publicly owned coal-fired power plants. Whilst Queensland's commitment to workers is commendable, federal coordination would provide a much-needed sense of clarity and fairness across jurisdictions.

Companies that operate coal-fired generators have a commercial interest in operating responsibly. They also have substantial expertise and knowledge in negotiating with workers and building community support for complex infrastructure projects. These two factors mean companies are well positioned to manage the closure of coal-fired generators, including the impact on workers and communities. Companies have shown a willingness to coordinate with workers—AGL, for instance, has pledged [job security](#) for all 300 workers on its Liddell site. This, along with our additional policies outlined later in this Blueprint, will enable regions to successfully diversify.

Who would pay for the CPM? A phasedown of coal-fired generation will impose costs on someone. The government could fully compensate auction participants for the loss of their expected future profits. Such a model has been adopted in Germany. At the other extreme, the government could charge operators for the right to emit. The funds raised could then be used to support those communities directly affected by coal-fired plant closures. A funding allocation between the two extremes is also possible.

Policy Suggestion 2: Fund expedited pre-final investment decision 'early works' processes for transmission infrastructure to crowd-in private investment

Our existing transmission network was built by state and territory governments around coal. But the world is changing. The cheapest way to bring new electricity generation to the market is through renewables. However, taking full advantage of the areas with inexpensive land, and abundant solar and wind resources to build new grid-connected renewable capacity will necessitate a distributed and expanded transmission network.

As the transmission system changes in Australia, states need to align their actions to create an efficient, cost-effective NEM that will provide secure and reliable electricity to consumers. In the absence of federal leadership, disjointed action is already threatening these goals.

The Victorian government, for example, is going it alone in an attempt to wind the clock back to the days of lumbering state-owned utilities. Their plans include not only 4.5GW of [publicly owned renewable energy generation](#), but a promise to revive the State Electricity Commission. Just how Victoria's idiosyncratic state-led approach will mesh with the NEM as a whole remains to be seen. Furthermore, the scale and extent of Victoria's proposed intervention in the electricity market introduces regulatory uncertainty that could have a chilling effect on private investment, ironically at just the pivotal moment where private investment is most needed in the shift to renewable energy.

New South Wales has also responded to federal inaction by establishing its own [Electricity Infrastructure Roadmap](#) that bypasses the traditional regulatory approval process to accelerate development of transmission lines. The Roadmap intends to attract [\\$32 billion](#) in private investment in renewable energy infrastructure by 2030, supporting the delivery of 12GW of new energy capacity and two gigawatts of storage capacity.

While the Roadmap is laudable for fulfilling the best interests of New South Wales, it is almost certainly not in the best interests of the NEM as

a whole. The costs of a state-based approach in a national context are already observable in the current NEM. Electricity prices have recently spiked NEM-wide, but average prices in Queensland in the first quarter of 2022—[\\$171/MWh](#)—were nearly double that of any other state, indicating a [lack of transmission capacity](#) to trade electricity across states. This disconnect between state-level action and NEM-wide considerations threatens to return Australia to the days of fractured, state-based transmission networks, and make end-users suffer financially as a result.

Labor has proposed to restore federal leadership by investing \$20 billion of public money to fund new transmission infrastructure in their [‘Rewiring the Nation’](#) initiative. It aims to accelerate the construction of the high-voltage infrastructure required to [accommodate the more than 50GW](#) of incoming large-scale renewable energy calculated by AEMO, reducing financial and planning barriers to unlock the development of renewable energy resources. The \$20-billion low-cost loan scheme, according to modelling by consultants RepuTex, would unlock another [\\$58 billion](#) of private-sector co-financing.

The ‘whole-of-NEM’ perspective that ‘Rewiring the Nation’ encompasses is commendable, but a more modest investment that accommodates a larger private-sector role would be sufficient to ensure the necessary transmission investment over the next 10 years. It’s also prudent to minimise risk to taxpayers. Unfettered public funding of the entirety of AEMO’s priority transmission infrastructure raises the spectre of white elephants.

The regulatory procedure governing investment in transmission infrastructure represents a significant barrier. The trade body estimates financial commitments for new large-scale renewable projects fell from [\\$4.5 billion in 2020 to \\$3.7 billion in 2021](#), citing “continued political and policy uncertainty” and the “challenges of connecting renewable energy projects to the grid”. For a concrete example of the inadequate progress in transmission infrastructure, look no further than the real possibility that the Snowy 2.0 project may reach completion [without a connection to the grid](#). The project is currently running 12 months over schedule, and the budget has blown out to nearly [one billion dollars above](#)

what was initially projected.

The Morrison government recognised the problem, but the remedy was limited—it [specially selected](#) just 15 priority infrastructure projects for fast-tracking. The regular process for environmental approvals alone adds [2.5 years](#) on average after regulatory tests are passed. An optimal solution will involve not cutting standards, but providing adequate funding for the regulatory system that allows it to shift to a standard of running federal and state tests [concurrently](#)—not one after another.

It is no wonder construction of new transmission infrastructure is slow, given the combination of a convoluted approval process and policy uncertainty. The truth is that obtaining capital investment for transmission projects is not, in and of itself, challenging. After all, there is no great shortage of capital, and investors in transmission infrastructure are beneficiaries of regulation that prescribes a competitive and [guaranteed rate of return](#).

What is challenging, is attracting investment to fund the many things that have to happen before a final investment decision. These ‘early works’ include processes as varied as community engagement, planning-related studies, detailed design work, potential land assembly, and more. At this stage, AEMO has concluded the given project is optimal for the NEM and ‘actionable,’ but the final decision to invest has not yet been made as detailed study may reveal that the costs outweigh the benefits. The prospect of committing a large sum of money upfront—usually about 10% of overall project costs—with the distinct risk that the project may not pass muster and not be allowed to proceed is not an attractive investment opportunity.

The value of pinpointing the stumbling block at this ‘early works’ stage in particular is that it implies that Labor’s policy objective can be achieved with greater efficiency and much lower cost. All the government must do is bear the initial risk by stepping in to fund the pre-final investment decision ‘early works’ processes before conducting a competitive open tender that enables private-sector financing. We estimate that this would cost about \$892.5 million, or just 4.4% of Labor’s planned \$20-billion price tag. (see Table 1).

Table 1 Future ISP projects where the government should underwrite the ‘early works’ process

Transmission line	Cost (\$)	Expected completion	Proposed government investment for ‘early works’ (assumed 10% ¹)
Central to Southern QLD	\$531 million	Stage 1: 2028–29 Stage 2: 2038–39	\$53.1 million
Darling Downs REZ Expansion	\$1,203 million + BESS contract cost	Stage 1: 2028–29 Stage 2: 2037–38	\$120.3 million
South East SA REZ Expansion	\$57 million	2029–30	\$5.7 million
Gladstone Grid Reinforcement	\$408 million	2030–31	\$40.8 million
Far North QLD REZ Expansion	\$1,264 million	2038–39	\$126.4 million
Facilitating Power to Central QLD	\$137 million	2033–34	\$13.7 million
QNI Connect	\$1,253 million	2032–33	\$125.3 million
South West Victoria REZ Expansion	\$930 million	2033–34	\$93 million
New England REZ Extension	\$3,142 million	2035–36	\$314.2 million

Source [AEMO 2022 ISP](#)

State and federal governments have already provided substantial public support for current actionable transmission projects (see Table 2). In cases where private investors have not yet committed to final investment decisions, the relevant projects should also receive the funding they require to begin early works. Case-by-case decisions at the ministerial level to support

specific projects to varying degrees are not the way forward. We need certainty, consistency, and predictability for the market. Formalising the process and applying strict limits to what will and will not be subsidised can limit costs while incentivising private-sector investment through policy certainty.

¹An exact figure is difficult to arrive at with publicly available information given the variability inherent in each transmission project, but we have landed on a rough estimate of 10% of overall project costs based on [AEMO data](#).

Table 2 Prior government support for actionable ISP projects

Transmission line	Government support	Expected completion
HumeLink	\$2,000 million underwritten by Federal and NSW governments	Early works stage: now Stage 2: 2026
New England REZ	\$78.9 million by NSW government	2027
VNI West	\$75.8 million	Early works stage: now Stage 2: 2031
Marinus Link	Up to \$250 million	Cable 1: 2029 Cable 2: 2031

This is certainly a worthwhile use of public funds. From a whole-of-NEM perspective, some of AEMO's actionable projects will be beneficial—we just do not yet know which ones. Once that has been determined through the 'early works' process, one potential method for reducing the costs of projects and ensuring efficiency is conducting a [competitive and open tender process](#). This could involve inviting submissions from all major transmission operators (state-owned and private) to submit applications for transmission projects—regardless of the state in which it is located. Steps should also be taken to reduce barriers to entry for smaller private providers to bid for these projects too.

Policy Suggestion 3: Institute capacity payments for new, low-emissions intensity dispatchable capacity only

If policymakers are right, the [present turmoil](#) in the electricity market is but a prelude to what could become a recurring problem in the future. In particular, the uncertainty surrounding the timing of coal's exit from the NEM has sparked regulator concern that there may not be [sufficient dispatchable generation](#) to ensure the NEM's continued reliability in the event of sudden and unexpected coal generator breakdowns or closures.

The Energy Security Board (ESB) proposed to remedy the situation by instituting capacity payments. The NEM is currently [one of the few](#) electricity markets worldwide where generators are paid only for the amount of energy dispatched. The proposed capacity payments were designed to compensate generators based

on their potential to supply electricity. The ESB envisioned that this would incentivise generators to maintain spare dispatchable capacity and thus ensure NEM reliability.

Besides its expense—as [evidenced](#) by the high cost of capacity payments in the Western Australia electricity market—the primary drawback to the ESB's proposal is that capacity payments would disproportionately favour generators with [low fixed costs and high operating costs](#), and disfavour those with high fixed costs and low operating costs. In other words, without adjustments, a technology neutral capacity mechanism would prop up ageing coal generators and, on a relative basis, disincentivise new renewable investment.

Even a cursory analysis of the ESB's preferred version of a capacity mechanism reveals that it is precisely its insistence on technological neutrality that is its fatal flaw. The genesis of the NEM's recent reliability scare, and a problem certain to rear its head again in the future, is the market's uncertainty over the timing and order of each coal asset's exit. Even setting aside the troubling emissions-related implications, it is hard to see how instituting a capacity mechanism that prolongs the economic viability of coal-fired generation by an as yet indeterminable amount is overall beneficial. Instead, it sustains the very issue it is designed to solve by provoking greater uncertainty. Delaying coal's exit and thus disincentivising the immediate shift to newer and more reliable dispatchable capacity could even compromise grid security in the event that ageing coal generators suffer unexpected outages.

A more sensible proposition would be to first address the source of market uncertainty by

instituting the Coal Phasedown Mechanism described earlier in this document. This would clarify the timeline of coal's exit and utilise a market-based approach to incentivise private investment to fill the gap in dispatchable capacity.

A high-level ESB paper outlining the proposed design of the capacity mechanism was submitted in August and was met with fierce criticism across the board by [industry](#), [policy experts](#), and [government](#). So staunch was their combined objection to the capacity mechanism that [the ESB has been sidelined](#). Federal Minister for Climate Change and Energy, Chris Bowen, stated in June that states would have [power to implement the capacity mechanism](#) in a way that suited their needs as long as they align with the Albanese Government's 2030 emission reduction target. Granting individual jurisdictions discretion to implement the mechanism in a way that suits them is far from ideal. As stated earlier in this report, a coordinated, national, and market-based approach is needed to ensure a smooth energy transition. The Federal Government should reassert their leadership in this space to safeguard against fractured approaches that risk investor confidence.

In the event that capacity mechanisms are established at a state level, in order to mitigate unintended consequences we propose that, just like [in the UK](#), it is limited to new dispatchable capacity. The goal should be to incentivise additional investment in generation and storage, not reward existing operators. Additionally, the ESB should restrict eligibility for capacity payments to technologies with a low carbon intensity. Once again, the UK provides an instructive example—eligibility is restricted to facilities under a [550g/kWh standard](#).

Additional capacity is not the only way to improve NEM reliability. Reliability challenges could also be mitigated through a greater degree of demand management—in other words, incentivising consumers to shift their electricity from peak hours to off-peak hours.

CSIRO [forecasts](#) that electric vehicles (EVs) will consume more than 20,000GWh of electricity per year in its central scenario by the close of the 2030s, and up to 60,000GWh yearly in its step change scenario. At the same time, AEMO [projects](#) that, as a result of high decentralised solar penetration, energy demand in the NEM will drop to 60% of average levels at midday before spiking to around 140% of average levels in the evening. Instituting the appropriate pricing and regulatory framework to take advantage of this projected differential and incentivise the charging of electric vehicles at midday would smooth the variation in electricity demand, reduce the need for additional dispatchable capacity, and improve grid reliability.

Investments could also be made in [virtual power plant](#) 'micro-grid' technologies that capitalise on Australia's expansive household rooftop solar penetration and the projected uptake of electric vehicles. This vision of retail consumers as not just a source of demand but also a source of electricity supply and storage—sometimes referred to as a [two-sided market](#)—would make it simpler for Australian consumers to monetise the excess electricity they produce and electricity storage capacity they own, while improving grid reliability.

Allowing business to lead—ensuring Australia is a hub for green tech

The introduction of new and improving technology has driven some of the greatest emissions reductions around the world. With a focus on expanding Australia's technology base, the success of green technologies could improve our international standing, increase GDP, boost regional economies, and secure the path to net zero.

Policy Suggestion 4: Double energy R&D spending to \$900 million a year

Australia is rich with scientists and entrepreneurs who drive innovation in clean technology. Decarbonisation will require important technology breakthroughs in hard-to-abate sectors. Despite this reality, public energy R&D spending decreased by more than [60%](#) between 2013 and 2021.

Overseas, foreign governments have [committed](#) \$51 billion to low-carbon energy R&D as part of COVID-19 recovery efforts. In Australia, Labor announced before the election that it would be increasing the R&D budget to three percent of GDP by 2030. As of yet, no such additional commitment has been forthcoming. In the absence of a substantial push for clean energy R&D funding at the federal level, state governments have somewhat picked up the slack. However,

Australia remains an international outlier—our peers are devoting far more money into clean energy research. Today, as a proportion of GDP, Australia spends only half that of the UK and US on energy R&D (Figure 13). What's more, in 2021 it was estimated that fossil fuels accounted for the [largest proportion \(34%\)](#) of Australia's total energy R&D budget.

In the new parliament, it is imperative that we rectify our past failings. As such, we should double our public energy R&D spend to \$900 million per year. This would bring us in line with the IEA average, relative to GDP.

There is ample evidence, notwithstanding short-term fluctuations in a notoriously volatile and cyclical sector, that an additional \$450 million per year of investment in clean energy would deliver substantial returns. A recent [five-year review](#) of returns in Germany and France found that a portfolio of renewables yielded 178% returns versus -21% for fossil fuels. Results were similar in the US—66% for renewables, -10% for fossil fuels, and the UK—75% for renewables, 9% for fossil fuels.

Thankfully, our institutional capability in allocating energy R&D is world-leading. ARENA, established in 2012, aims to improve the competitiveness and supply of renewable energy in Australia. It has an enviable track record of

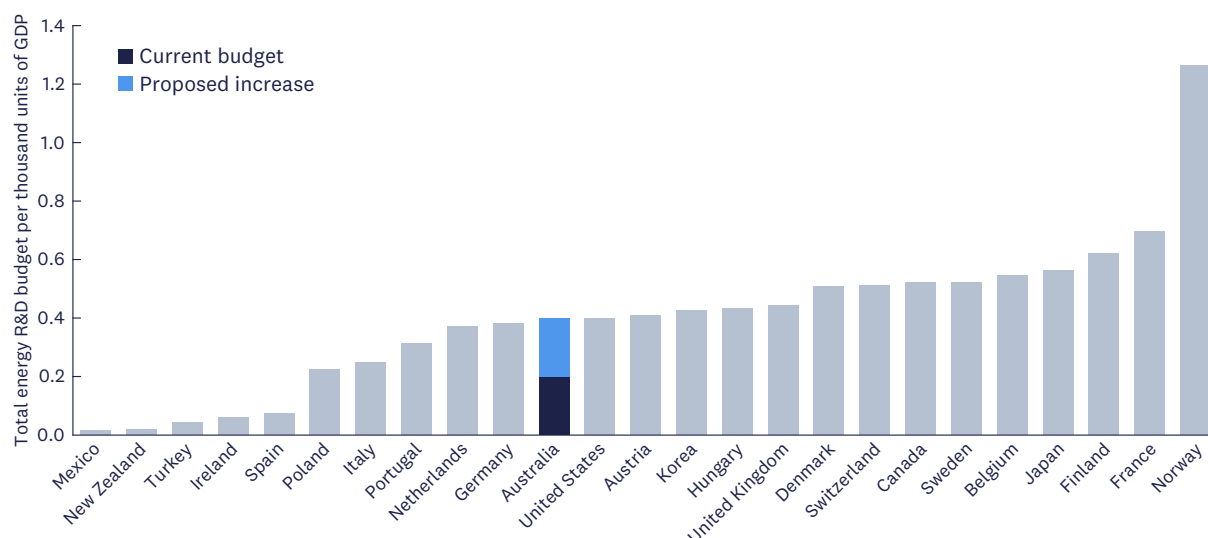


Figure 13 Public energy R&D spend across IEA members (2021)

Source [IEA](#)

crowding in significant investment from private partners to help bring new technologies to their deployment stage. One public dollar awarded by ARENA has, on average, resulted in \$3.32 in matched funding from its partners.

The following opportunities should be prioritised as part of the overall increase in public energy R&D funding outlined above.

Battery and hydrogen technology for use as a diesel alternative in mining and agriculture

Diesel is deeply embedded in our heavy transport system and some of our most productive export-facing industries like mining and agriculture. [Six percent](#) of all greenhouse gas emissions economy-wide stem from the use of diesel in non-road diesel engines—heavy machinery used predominantly in mining, agriculture, and construction.

Our large mining and agricultural sectors, replete with world-leading, capital-rich multinationals, leave us well-positioned to win the race to supply the world with decarbonised heavy machinery. Both hydrogen and battery technologies offer a potential pathway forward, but challenges remain.

Public R&D investments in battery and hydrogen technologies—such as the [successful completion](#) of a study to build a prototype of a battery with greater energy density based on lithium-sulphur chemistry, or studies to reduce the [cost of hydrogen production](#)—are likely to have benefits across the economy.

But for non-road diesel engines in particular, pilot projects designed to ensure that technologies and concepts are feasible in a business environment are likely to be required. One such project is already taking place in the Pilbara, where [Fortescue Metals](#) is trialling green hydrogen in an effort to decarbonise the company's mining and shipping fleet including trucks, drill rigs, and trains.

While private investment is ideal, there remains a key role for government-funded R&D, especially in the case of green hydrogen where the technology is less mature. For example, there is increasing potential for [on-site green hydrogen production](#) in the agricultural sector. This could result in

a huge cut in emissions in a sector responsible for [13%](#) of greenhouse gas emissions each year. However, without substantial investment, the odds are stacked against such technologies scaling to achieve commercial viability.

And while numerous firms—including Fortescue—are investing heavily in hydrogen, private-sector support is no match for the resources and influence the government can bring to bear to accelerate decarbonisation in this sector. Government support can send a clear signal to the market that while the industry remains in its infancy, it holds great promise. Credible signals can in turn crowd-in private investment, providing the capital necessary to develop new hydrogen and battery refinements, scale them up, and bring them to market.

Allocate an additional \$20 million to expand existing agricultural innovation hubs as centres for zero-emissions technology development and implementation

Eight [agriculture innovation hubs](#) exist at universities around the country. Located within agricultural and climatic zones, these hubs specialise in trialling new technologies on properties, and training and upskilling farmers. Twice in this last year, [funding increases](#) to these hubs have aimed to improve the versatility and efficiency of technologies and their use within the agricultural industry.

Although these hubs provide the necessary framework for innovation in agriculture, they are lacking in a key focus: zero-emissions technology. The existing program to spread and implement [digital technology](#) in regional communities is well intentioned, but in ignoring carbon abatement, it misses a crucial aspect of how technology could unlock significant value for the agricultural sector.

As consumer awareness of the [carbon impact of food production](#) grows, Australian farmers have a significant opportunity to harvest the [financial benefits](#) of low-emissions produce. Globally, citizens and nations alike are increasing their demand for goods that have lower environmental impacts at every step of the supply chain. Just as

organic produce can command a premium, so too can low-emissions produce.

The [growing trend](#) of carbon labelling on food allows producers with low carbon footprints to differentiate their products and sustain demand at a higher price point. There need not be a tradeoff between that which is good for mitigating carbon emissions and that which is good for farmers—it is possible to pursue both at the same time.

Farmers recognise that the rest of the world is racing to capture this opportunity, and they are [demanding](#) a more ambitious plan from government. The National Farmers Federation has [criticised](#) both major political parties for ignoring agriculture's role in climate plans. If we play our cards right, farmers could play an important role in reducing the nation's emissions, improving our international reputation, and increasing their profitability at the same time.

It is not a stretch to imagine the existing innovation hubs as centres for the development and implementation of zero-emissions machinery in agriculture. They are ideally located, well-staffed, and already possess connections with local farmers to trial new technologies. The hubs were given [\\$20 million](#) for expansion in October 2021. With an extra \$20 million of support across the hubs, universities could broaden their research to better include zero-emissions technology, farmers could trial new technologies on their properties in close proximity to the hubs, and the uptake of these technologies, and the associated benefits, could come much sooner.

Increase R&D funding for green hydrogen by \$100 million per year

Green hydrogen is a low-carbon fuel that is produced using renewable electricity to electrolyze water, separating it into hydrogen and oxygen. Investors and policymakers across the globe are [increasingly](#) looking to green hydrogen as the fuel of the future. It is seen as key to achieving breakthrough emissions reductions in especially energy intensive sectors that cannot easily be electrified, such as heavy road transport.

In a sign of green hydrogen's promise, researchers

from the University of New South Wales [recently built](#) a prototype that allows diesel engines to be retrofitted to run on a fuel-mix of up to 90% hydrogen, reducing CO2 emissions by more than 80%. The potential ability to retrofit existing engines rather than undergo exorbitantly expensive fleet replacements is particularly important in the Australian context, given that most local road freight operators are small mom-and-pop firms with little capital to spare.

It would be misleading, however, to speak of green hydrogen as a miracle fuel without acknowledging the reality that it by no means constitutes an easy or cost-effective solution. Producing, transporting, and utilising green hydrogen is, due to fundamental physical constraints, an expensive and energy-intensive process. However, in the absence of technological breakthroughs, green hydrogen is currently the best and only option to decarbonise key energy-intensive sectors.

With some of the world's richest renewable energy resources and abundant land on which to construct solar and wind farms, Australia has an opportunity to emerge as a world leader in green hydrogen production. [Few countries](#) boast the enviable mix of natural resources and technological know-how needed to produce green hydrogen at a competitive scale or cost base.

The prior Coalition Government took welcome action to advance and expand Australia's capacity to produce green hydrogen, allocating [\\$464 million](#) in funding to develop up to eight clean hydrogen industrial hubs in regional Australia. These hubs will attract key stakeholders in the industry such as producers, consumers, transporters, and prospective investors, while simultaneously helping to develop the skills and expertise base necessary to scale supply commensurate with demand. The Albanese Government has continued down this promising path, taking the government's overall planned investments in hydrogen hubs to over [\\$525 million](#).

This united front of bipartisan investment in green hydrogen is an important acknowledgement of the importance of the industry. The lack of politicisation also sends a strong message to the private sector—that green hydrogen is seen as

crucial to Australia's future economy—which will be key in stimulating private investment.

However, given that Australia has the resources to become a green hydrogen superpower, our world-leading potential is not being reflected in current spending. The existing clean hydrogen funding commitment is [\\$1.4 billion](#), contained within the National Hydrogen Strategy over the decade to 2030. Despite this, Australia only spent around [\\$100 million](#) on hydrogen R&D in 2021. Our international peers comprehensively outspent us in [hydrogen R&D](#) in 2021: Japan spent \$413 million, Germany spent \$275 million, and the US spent \$137 million. We recommend that Australia's public green hydrogen R&D spending in 2023 should be increased by \$100 million relative to 2021 levels to compete with our peers in this crucial sector.

Fund pilot studies for green metals manufacturing

Regional communities are disproportionately reliant on many of our nation's core commodity exports for their employment and prosperity. Some of these exports—including coal and gas—are beginning to face poorer terms as our trade partners pursue emissions reductions. However, climate action has also created an opportunity to build and expand on two of the key export sectors based in our regions—iron ore and aluminium.

Regional Australia possesses the resources, infrastructure, and labour capacity to serve as the engine room for a new, vibrant green metals export trade in Australia. Access to cheap wind and solar means that Australia could produce carbon-neutral 'green steel' with green hydrogen at a lower cost than countries such as Japan, Korea, and Indonesia.

Ninety-five percent of our iron ore comes from Western Australia's Pilbara region, which also happens to have excellent solar resources. This [region has the potential](#) to mine iron ore, smelt it into iron, and even into steel without producing carbon dioxide, and ship it overseas—adding significant value to our exports.

We are already the world's [sixth-largest](#) producer of aluminium, but Australian aluminium producers have been struggling on account

of [high power costs](#). Our aluminium, alumina, and bauxite export earnings are [forecast to fall by 5.8%](#) to just under \$15 billion by 2023. The aluminium industry has called for [greater certainty](#) over firmed electricity prices. Green hydrogen could provide clean, [low-cost](#) energy that enables aluminium smelters to produce low-carbon aluminium.

To drive progress towards achieving the targets contained in the [Technology Investment Roadmap](#)—producing green steel at under \$700 per tonne and green aluminium at under \$2,200 per tonne—the government should fund pilot studies in green metals manufacturing. This would address the fact that green metals are currently struggling to attract private investment, while a profitable market for the export remains an uncertain number of years away.

Carbon-neutral metals will likely reach cost parity [between 2030 and 2040](#).

Critical minerals—focusing on refining to capture more of the lithium value chain

We are often led to believe that serious climate action will destroy our traditional mining industries. This is far from true.

In fact, in the emerging green economy, there are opportunities for Australia to establish itself as a leading supplier of critical minerals—a globally underdeveloped resource that serves as a key input for low-carbon technologies and other important growth areas like computer chips. The International Energy Agency predicts that mineral requirements for low-carbon technologies are likely to [double by 2040](#), and could almost quadruple if the world manages to achieve its Paris Agreement goals.

Australia has natural advantages in a world embracing clean technologies. Lithium, in particular, played a key role in the former government's Critical Minerals Strategy. With the world's [second-largest lithium reserves](#), Australia is set to benefit greatly from an increase in demand for lithium, as batteries become integral to grid-load management and EVs gain popularity.

However, most of Australia's currently active lithium operations are limited to mining, and we only export lithium as unrefined ore. As a result, Australia captures barely [0.5%](#) of the value of global battery production—a market that is projected to grow from [\\$56.6 billion in 2021 to \\$160.6 billion by 2030](#). The economic logic of diversification, compared to remaining on a mining-focused path, is robust. Taking a diversified path could almost double the economic gains between now and 2030, resulting in [\\$7.4 billion in value added](#) and around 34,700 jobs. Moreover, providing the world prevents temperatures from increasing by more than two degrees, Australian lithium exports could grow from one billion dollars in 2020 to [\\$10 billion in 2050](#) if we play a more active role in the supply chain.

While the advantages of exporting refined lithium are strong and attainable, the Government's [plan](#) to create a battery manufacturing industry in Australia is a distraction—detached from economic reality. China dominates the lithium battery manufacturing industry for a reason. Over the past decade, it has spent somewhere between [\\$82 billion and \\$137 billion](#), enabling them to build a robust lithium supply chain. When even the US is failing to arrest a small share of China's market dominance, the prospect of Australia doing so is fanciful.

We should concentrate our focus and support where gains are realisable. The Government should fund pilot projects and feasibility studies that can demonstrate to investors the viability of exporting refined lithium from Australia.

Labor's Budget reflected the economic potential in critical minerals; pledging a one-billion-dollar [Value-Adding in Resources Fund](#), alongside a \$50.5 million investment for a critical minerals [R&D hub](#). Another initiative announced by the Government was an additional \$50-million investment over the next three years in the [Critical Minerals Development Program](#), matching \$50 million already committed to six key national projects established last September.

Whilst this enthusiasm is supported by real [promise](#), more strategic precision is required to fully capture Australia's comparative advantage. 'Critical minerals' has become a rhetorical catch-all for over [26](#) minerals—some of which present more economic opportunity for Australia than

others. Choosing which of the ASX-listed critical minerals companies should receive grants and funding is a speculative game for all but the most savvy market participants.

Much like the case with lithium, China [dominates](#) the rare-earth minerals markets. There is no point in developing domestic critical minerals processing industries if we can not be internationally competitive. Throwing money at critical minerals in general demonstrates misguided execution of the right intention—without targeted and unified strategy across government departments, we risk sunk costs into critical minerals that either may not prove to be as highly demanded as anticipated, or may be already dominated overseas.

We need to be strategic in our decisions in which projects we invest in and which minerals we look to process onshore. The example of our potential to export refined lithium shows that our critical minerals strategy should look to capitalise off economies of scale, and avoid foraying into markets we will be outcompeted in.

Policy Suggestion 5: Mandatory reporting on Climate-Related Financial Disclosures

Australia's voluntary climate-related financial disclosure system is quickly becoming outdated, putting the country at a significant disadvantage on international markets. Other G20 nations are increasingly mandating climate-related financial disclosures to reduce and manage investment and climate risk, and to inform policy. And if Australia doesn't get on board soon, we may be left in the dust.

The [Task Force on Climate-Related Financial Disclosures](#) (TCFD) has outlined a comprehensive set of recommendations that effectively reduce investment risk and better inform regulatory decisions. These standards are becoming increasingly accepted among many of our major trading partners and may become a necessity to trade certain exports on international markets in the future. Closer to home, the [Investor Group on Climate Change](#) has endorsed TCFD reporting in Australia to secure future economic opportunities. Last year, the [UK](#) was the G20's first country to mandate that large businesses disclose their climate-related risks based on TCFD recommendations. Similar mandatory

reporting of greenhouse gas emissions and climate-related risks have recently been legislated in the [US](#) and the [EU](#), with standards likely to continue tightening in the future. Goods on these markets may need to align with strict standards on climate impact, including within their supply chain. If Australia lags behind, our mineral-heavy trade economy may no longer thrive in these markets.

The first step is developing a climate finance taxonomy for domestic markets. Consistent definitions and standards are necessary if Australia wishes to enable future economic opportunities in climate-conscious markets. Within the country, different definitions of key terms like ‘sustainable’ and ‘green’ causes confusion for investors and policymakers, and allows greenwashing to become abundant. Once definitions are secure, legislating mandatory reporting is key. Some good news is that these trends are already evolving in the private sector. Despite comprehensive reporting being only voluntary, the number of ASX200 companies incorporating the TCFD reporting framework increased to [60 in 2019 compared to only 11 two years before](#). Companies understand the benefits of comprehensive reporting that comes from well-informed investors and increased trade opportunities.

To ensure the future of Australia’s most valuable exports, it is integral that leaders not only align with international standards on climate reporting, but that they help shape evolving policy and build a global climate finance taxonomy. Consistency in definitions and reporting standards would ease frictions in trade due to increased transparency and reduced investment risk, thus increasing the economic opportunities available to Australia and encouraging more nations to adopt similar standards. This is particularly important for a nation that benefits massively from the exports of mined materials that are put at greater risk of becoming obsolete in climate-conscious markets. Without implementing climate-related financial disclosures, Australia could be at a significant disadvantage in international markets in the very near future.

Policy Suggestion 6: Investing in the decarbonisation of transport

A net-zero economy will require the full decarbonisation of our transport sector. Instead of viewing the move away from fossil fuels as a costly obligation, it would be more productive and accurate to see it as an opportunity. The private sector has embraced this shift in thinking. From the growing influence of environmental, social, and governance investing to changing consumer attitudes, it is clear that progress in decarbonisation is now seen as an asset, and billions in investment are pouring in to fund it.

Australia possesses all the necessary ingredients to seize this massive opportunity, provided we have the foresight to take the necessary steps today by placing targeted bets on developing our comparative advantages.

The first step is to establish policy settings to accelerate the adoption of electric passenger cars. Australia is well behind the curve in terms of electric vehicle (EV) uptake. Just [two percent](#) of Australian new car sales in 2021 were electric, compared to 11.2% in Western Europe. And our charging infrastructure is woefully unprepared for EVs, relative even to comparable countries like Canada (see Figure 14).

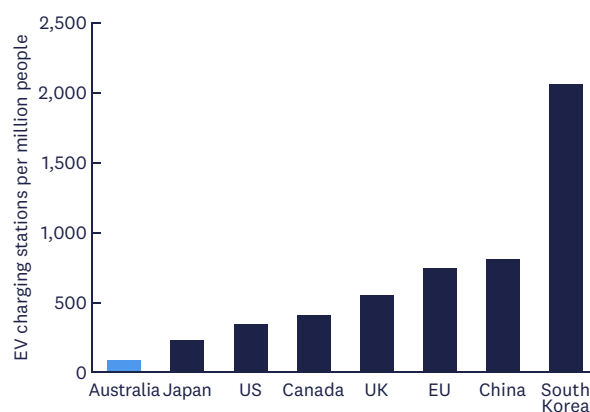


Figure 14 Electric vehicle charging stations per capita, Australia vs select OECD countries (2021)

Source [IEA](#), [World Bank](#)

Federal investment of \$875 million through 2030 in fast charging infrastructure

Despite the fact that the average passenger vehicle travels [well under 100km a day](#) and the current generation of EVs have many multiples of that range, [range anxiety](#)—the fear that the EV’s battery will run out of charge during a trip—is nevertheless a real phenomenon. In fact, consumers cite range anxiety as a [significant barrier](#) to EV adoption. For further proof of the political potency of this argument, look no further than Scott Morrison’s infamous 2019 claim that EVs would “[end the weekend](#).” While range issues rarely arrive for EV users, the fact remains that adequate charging infrastructure is a prerequisite if EVs are to gain mainstream acceptance in Australia.

The economic case for replacing petrol and diesel vehicles with EVs also relies on a sufficiently accessible and competitive public charging market. Electric vehicles come with a higher upfront price tag, but lower maintenance and fuel costs relative to internal-combustion engines. It only makes economic sense to incur a higher upfront cost if it is outweighed by lower operational costs.

There is not much that Australian policymakers can do to lower vehicle maintenance costs, but they can affect charging costs and accessibility. Australia’s public charging infrastructure is currently lacking (see Figure 15). As a vast country with a [massive road network](#), our numbers need to be higher than our peers, not lower.

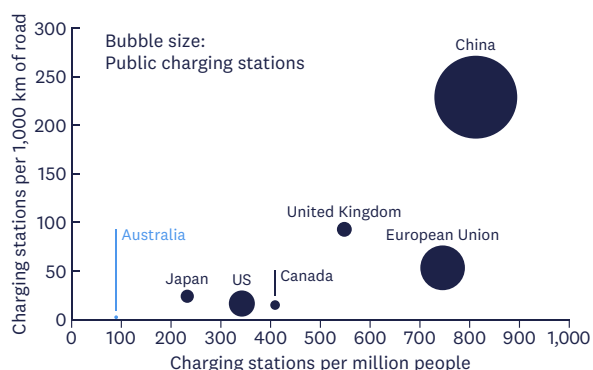


Figure 15 Charging stations per million people and 1,000km of road (2021)

Source [IEA](#), [World Bank](#), [CIA](#)

In today’s underdeveloped Australian market, publicly accessible charging stations levy a large premium relative to the base cost of electricity. While the average household consumer pays [well below](#) \$0.30/kWh for electricity, prices for fast charging vary widely and can be as expensive as [\\$0.60/kWh](#) for Chargefox’s ‘Ultra-rapid’ charger and [\\$0.52/kWh](#) for Tesla’s supercharger. However, price-sensitive consumers can today generally secure fast charging for [about \\$0.40/kWh](#).

Part of this premium is unavoidable, due to the cost of the charger and overhead expenses, but, as with most things, more investment and competition can bring prices down and closer to the base cost of electricity. Coupled with a reduction in upfront costs as [battery prices continue to fall](#), a cheap and accessible charging network will play a key role in persuading Australians to seriously consider EVs.

Establishing such a charging network efficiently would require private-sector coordination between competitors, which might be difficult for a range of reasons. Further taking into consideration the carbon abatement and [public health benefits](#) of electrifying transport, there is a good argument for government engagement and leadership in this space.

We advocate that the new government should lead and coordinate the effort at a federal level. The prior Coalition government instituted a \$250-million [Future Fuels Fund](#), but the fund only ever committed [\\$24.55 million](#) of the \$250 million to build 403 charging stations. This is a start, but nowhere near a sufficient level of ambition to make a definitive difference.

Since forming government, Labor has pledged \$500 million to deliver the ‘[Driving the Nation](#)’ Fund aimed at decarbonising the nation’s road use. Its first two imperatives are investing in charging infrastructure, as well as hydrogen and biofuels refuelling stations. But the Fund has only outlined a meagre \$39.3 million (a figure that will be matched by the NRMA) to co-invest in 117 fast charging stations across Australia.

The Fund also designates the government to match funding commitments (up to \$60 million) with other states and territories to establish ‘hydrogen highways’ for key freight routes across

Australia through the rollout of hydrogen and other biofuels refuelling facilities.

These initiatives are a step in the right direction. But to ensure adequate coordination with the private sector, the signal to the market must be more forthright. We encourage a more significant investment in charging infrastructure—to a sufficient extent such that ‘range anxiety’ is essentially alleviated as a potential deterrent to purchasing an EV.

In the absence of serious federal action, individual states such as [New South Wales](#) and [Victoria](#) have begun their own endeavours to invest in fast charging infrastructure. New South Wales, in fact, has highlighted the inadequacy of federal action by enacting a fast-charger investment scheme that is [comparable in size](#) to that of the Federal Government. These undertakings at a state level are certainly praiseworthy, but one of the benefits of government as opposed to private-sector action should be better coordination. Earnest federal engagement and oversight to ensure the placement of chargers is optimised independent of state borders is currently lacking.

Where charging stations are located is just as important as how many there are. In addition to fast charging along highways, establishing publicly accessible charging infrastructure at the parking lots of major retailers, work places, and at street parking bays will be crucial to incentivising an optimal level of charging in the middle of the day, during which AEMO has [projected](#) a large excess of electricity generation.

How much do we suggest the Federal Government should commit toward fast charging infrastructure? If we were to match the [UK](#)’s per-capita spend on EV charging infrastructure, the Federal Government would contribute at least \$875 million through to 2030. Of course, Australia has more than double the road mass of the UK. But an initial commitment at least as large would set us off in the right direction.

Reforming regulation and tax arrangements

Updating the luxury car tax to encourage the purchase of low-emissions vehicles.

The government’s [luxury car tax](#) (LCT) has been in existence for over a decade. But it is outdated

and poorly designed. The current scheme defines ‘luxury car’ based on price. An LCT of 33% [is levied](#) on each dollar above \$79,659 for fuel-efficient cars, and each dollar above \$69,152 for other cars.

With respect to EVs, the problem with this design is it exacerbates the primary barrier to accelerated adoption—namely the high upfront cost of the still-maturing technology. For example, most people would consider the Tesla Model S ([\\$141,990 before tax](#)) to be a luxury vehicle, but the performance version of Tesla’s mid-market and more affordable offering—the Model 3 ([\\$88,900 before tax](#))—gets hit with the LCT as well. From a purely financial perspective, the cost of operating an EV is [substantially lower](#) than its internal combustion counterpart. The average driver who switches to electric can expect up to \$1,600 in [annual fuel savings](#), and a further \$400 annually thanks to [cheaper maintenance](#). But these savings over time make no difference if people cannot afford the upfront cost to begin with.

Labor has made inroads into incentivising EVs through the tax code since forming government. They have passed the [Electric Car Discount Bill](#), exempting certain electric vehicles below the LCT threshold from Fringe Benefits Tax, as well as the five percent import tariff. They have also flirted with resurrecting a [plan](#) to impose emissions mandates on new car sales with internal combustion engines.

While the Bill is certainly a step in the right direction, much more substantive reform is required if the uptake in EVs is to be significantly accelerated at the consumer level. Since business and government fleets—which account for around [40%](#) of light vehicle sales—can now access this modest benefit, the next step should be a broader tax break that is directly available to consumers.

There are numerous positive externalities associated with EVs. For example, they would benefit society as a whole by reducing carbon emissions. Furthermore, since EVs are free of tailpipe emissions, the reduction in air pollution as a result of their adoption has been projected to deliver public health benefits worth [thousands of dollars per vehicle](#). Given that these public benefits are not currently reflected in its price,

it makes little sense to slap punitive taxes on EVs—if anything, we should be subsidising them. Accordingly, we recommend incentivising consumer purchase of light EVs by fully exempting them from the LCT altogether.

Increase heavy vehicle width limit to 2.6 metres and increase weight limit for zero-emissions models

Regulation	EU	US	Australia	Suggested policy
Width limit	2.55–2.6 m	2.6 m	2.5 m	2.6 m

Federal regulations limit Australian heavy vehicles to a width of [2.5 metres](#). In Europe, the equivalent limit is [2.55 metres](#) (or 2.6 metres for refrigerated trucks) and in the United States it is [2.6 metres](#).

That ten centimetres of difference may not sound like much, but it sharply limits the supply and selection of zero-emissions heavy vehicles in Australia, as vehicles designed for the much larger European and American markets are too wide to be legally sold in Australia.

It does not make much sense for a major manufacturer to spend the time, effort, and money to modify and redesign complex vehicles just to meet Australian regulations as it only constitutes about [one percent of global commercial vehicle sales](#).

We call for regulators to increase the heavy vehicle width limit to 2.6 metres. This change would enable the direct importation of EU- and US-designed models, and is the single simplest and lowest-cost reform that would significantly increase the domestic supply of zero-emissions heavy vehicles.

At the same time, we recommend that the steer-axle weight limit for zero-emissions vehicles be increased from 6.5 tonnes to 7.5 tonnes. Whether it be hydrogen fuel cells or batteries, all zero-emissions technologies result in [significant additional weight](#) relative to diesel—an increased weight limit is thus necessary to ensure a level regulatory playing field between diesel and clean technologies. It is also necessary to minimise costs by ensuring that the [vehicle models used overseas](#) can be imported without modification. Both the Electric Vehicle Council and the Australian Trucking Association have [endorsed](#) a national strategy which incorporates these initiatives.

Austroroads, a government-funded organisation dedicated to investigating transport-related issues, has concluded that wider tyres can compensate for steer loads up to [7.1–7.2 tonnes](#) without causing additional pavement wear. Given that we are proposing increasing the limit to 7.5 tonnes, however, an Austroroads study to evaluate the extent and cost of the resulting pavement wear and possible mitigation measures would certainly be welcomed.

Calls to loosen regulations and ‘unleash the power of the free market’ are often correctly viewed with scepticism after crises spawned by unconstrained [capitalism](#) during the recent past, but that should not mean that we resist reforming counterproductive barriers to trade that hold back Australian businesses and our economy. It is past time that we harmonise our heavy vehicle regulations with the rest of the developed world.

Provide a stamp duty waiver for zero-emissions and registered second-hand diesel heavy vehicles

Table 3 Stamp duty charge for new EV truck (assumed \$450,000) and second-hand diesel truck (assumed \$150,000) as of December 2022

Stamp Duty	EV (~\$450,000)	Diesel (~\$150,000)	Rate
WA	\$12,000	\$4,500 (+\$19.40 transfer fee if used)	\$6.50 per \$100 of dutiable value (~3%)
NSW	\$13,500	\$4,500 (\$35 extra transfer fee)	\$1,350 + \$5 for every \$100 (~3%)
QLD	\$9,000	\$6,000 (\$30.45 transfer fee)	\$3.50–5.50 per \$100 (~3.5%)
VIC	\$12,150	\$6,300 (\$42 transfer fee)	\$5.40 per \$200 or part thereof (~2.7%)
TAS	2 year stamp duty waiver until 2023	\$1,500 (\$30.60 transfer fee)	\$1 for every \$100 (~1%)
SA	\$13,470	\$4,470 (\$31 transfer fee)	\$30 plus \$3 for every \$100 (~3%)
NT	\$13,500	\$4,500 (\$19 transfer fee)	~3% of dutiable value

Source State government websites and stamp duty calculators

A tax on transactions—in other words, stamp duty—directly inhibits the turnover of Australia’s ageing heavy vehicle fleet—already nearly [double the age](#) of those in Europe. We propose that the Federal Government incentivise state governments to waive stamp duty for both zero-emissions and domestically registered second-hand diesel heavy vehicles.

The rationale for waving stamp duty for zero-emissions heavy vehicles is straightforward: a large upfront capital expenditure is already a substantial barrier holding back the adoption of a technology that would benefit society as a whole by reducing carbon emissions without an additional tax of around three percent (see Table 3). Carbon abatement aside, the policy case for taxing zero-emissions heavy vehicles is especially weak considering the [ancillary public health benefits](#) associated with replacing Australia’s old and heavily polluting fleet with new vehicles that meet stringent emissions standards.

Waving stamp duty for second-hand diesel vehicles, on the other hand, appears counterintuitive. Why should we make second-hand diesel vehicles cheaper? First, it is

important to note that our proposed stamp duty waiver would only apply to the existing stock of already registered diesel heavy vehicles. No additional diesel vehicles would hit the roads as a consequence of this policy. Second, many of the small businesses that would consider purchasing a new zero-emissions vehicle are capital-constrained. In order to afford a new vehicle, they must be able to liquidate their existing fleet of old diesel vehicles. If the goal is to incentivise the uptake of new technology, a tax that makes it more expensive to discard old technology is counterproductive.

The Albanese Federal Government has already [cut import tariffs](#) on light EVs and may be planning to follow suit for heavy vehicles. Going further to incentivise state governments to remove stamp duties, which are perhaps the most [inefficient, distortionary, and anti-market](#) taxes collected, would be a wise next step. It is rarely a good idea to stand in the way of people making voluntary and mutually beneficial transactions. In this case, the losses of stamp duty are not limited to the parties to the forgone transaction—rather, we all suffer as the effort to decarbonise heavy transport is delayed.

Securing Australia's place in the world

Australia's climate policy must have an international perspective. This is not simply because climate change is a global challenge that requires global coordination, but because domestic climate policy will increasingly influence our capacity to compete in the global economy and the global diplomatic sphere.

The decarbonisation challenge ahead is, in effect, a global industrial revolution on a timeline. Our capacity to successfully develop and expand new clean industries will depend on our attractiveness to global capital markets. This is, by and large, shaped by two things— investor certainty and international reputation. Global investors are already flooding to those economies with a stable regulatory environment and clear bipartisan commitment to decarbonisation. Given Australia's enviable swathe of clean economy opportunities, it is our political record with its 'climate wars' and history of inaction that is now holding us back.

Aside from economic considerations alone, we risk isolating ourselves diplomatically if we fail to adopt and implement a climate agenda that stacks up to that of our international peers. Our reputation already suffers thanks to past work to disrupt and [undermine international climate diplomacy](#) on the world stage. These efforts may have insulated our carbon-intensive industries for a time, but cannot fundamentally alter their [dubious economic future](#). Meanwhile, we have collectively paid the price for climate intransigence with a poorer diplomatic toolkit and a vulnerable economy. The cost of this less-than-stellar reputation will only rise over time with climate change's relevance, as international partnerships—including trade agreements—become increasingly conditional on progress in emissions reductions. Already we can see its effects within our Pacific neighbourhood—a region extremely exposed to a warming climate—where we have missed an opportunity to out-position China for influence, because we are perceived as equally, [if not more](#), recalcitrant on climate.

Legislating Australia's decarbonisation commitments is a positive first step to rebuilding our reputation on climate, but more needs to

be done to compensate for years of stagnation and inaction. The October Budget included a [\\$200-million commitment](#) to Indonesia through the establishment of a climate and infrastructure partnership, as well as a further \$50 million allocated to financing Pacific infrastructure. Both measures are indicative of a desire to restore our international reputation on climate policy, especially amongst our neighbours.

Policy Suggestion 7: Adopt a bipartisan commitment to the 2030 emissions reduction target

In September 2022, the [Climate Change Bill 2022](#) officially passed parliament. The Bill mandates that Australia reduce its emissions by 43% relative to 2005 levels by 2030, on the way to net-zero emissions by 2050. Under the bill, the independent Climate Change Authority will advise the government on future reduction targets. The Minister for Climate Change will be responsible for reporting annually to parliament on the progress of meeting these targets.

Labor's Bill got across the line with the support of the Greens and 'Teal' independents, but concerningly failed to secure support from the Coalition.

But why does it matter how the Bill was passed so long as it became legislation? Well, rapid decarbonisation requires a leap of faith. In order to make the switch from a petrol to electric fleet, a small business owner must have confidence that she is not going it alone. For example, she must be confident that her suppliers will import an ample supply of electric trucks, that her customers will confer value upon a decarbonised fleet, and that her government will aid her with accommodating tax policy.

Enshrining emissions reduction targets in law with support from across the political aisle sends a sorely needed signal to the private sector and all segments of society that the Australian government and people have come to a consensus in support of rapid decarbonisation. It provides the silent majority on the fence with much-needed clarity and confidence, thereby shifting investment in decarbonisation from a

radical risk for early adopters to an expectation for the mainstream. As long as an influential slice of the political spectrum remains intransigent, however, that consensus cannot form.

Addressing the climate crisis requires large-scale investment and long-term strategic planning that extends beyond the next election cycle. Without the support of the Coalition, any commitments can be walked back once the political pendulum inevitably swings the other way.

The refusal of the Liberal party to support legislating the emission reduction targets is perplexing. Many seats in the Liberal heartland [were lost in the last election](#), with constituents in several electorates frustrated by the Morrison government's inaction and belligerence on climate change. By refusing to come to the negotiating table, the Coalition ironically bolsters the position of the Greens, who currently hold the balance of power in the Senate. Given that the Greens' ambitious targets are an anathema to the Liberal Party, this is politically self-defeating.

At a state level, the Coalition has proven far more cognisant of the need to decarbonise. Both the [Victorian](#) and [New South Wales](#) state Liberal and National parties have agreed to net zero by 2050 and a 50% reduction by 2030. This would suggest that the opposition to more ambitious emissions reduction targets at a federal level is not the result of some deeply rooted ideological position. Rather, it suggests that the federal Coalition is engaged in [symbolic posturing](#). Indeed, it would be [false](#) to believe that there is unified opposition to climate action in regional and rural communities. In fact, the [National Farmers Federation](#) have embraced the net zero by 2050 goal and are committed to making significant inroads to reduce emissions by 2030.

Nevertheless, the federal Nationals have proven particularly averse to embracing the transition to renewables. The Morrison government was only able to secure the support of the Nationals for the net zero by 2050 target by promising a [slew of new regional infrastructure projects](#) and an extra cabinet position.

Moderate liberals holding endangered inner-city seats are no doubt aware that appearing intransigent on climate policy will not help them win back disaffected voters. It is this clash

between the moderates within the Liberal party and the Nationals that appears to be the crux of the problem. The former federal member for North Sydney, Trent Zimmerman argued that the Liberal party should consider “parting ways with the Nationals on individual votes for this legislation.”

Indeed, if the Nationals are the ultimate impediment to securing bipartisan support for climate legislation, then Labor must make a greater effort to convince those in rural and regional areas that decarbonisation will not spell economic ruin for their communities.

Presenting a clear and united bipartisan commitment to rapid decarbonisation will greatly increase our chances of attracting capital, expertise, talent, and opportunities from overseas. Given Australia's history of backtracking on climate policy, global investors may [shun](#) Australia and Australian businesses if they believe we will struggle, or be slow to, achieve a decarbonised economy.

Bipartisan support would result in a steady, more cost-effective shift to net zero by 2050. It is time to end the pointless swings-and-roundabouts surrounding targets, and unanimously commit to an ambitious target, consistent with keeping warming to well below two degrees.

Policy Suggestion 8: Bid to host COP29 alongside the Pacific Islands

Credit where credit is due, the Albanese Government scored a massive achievement by increasing Australia's emissions reduction target to 43% below 2005 levels by 2030—up from 26–28%—and [enshrining](#) that target into law.

It is an unfortunate reflection of Australia's history as a climate laggard that, even with such progress, its emissions reduction target remains [poor](#) in comparison to that of its peers in the G20, even while relying heavily on [dubious](#) carbon offsets.

Our recalcitrant attitude on climate policy has historically earned us the ire of liberal-leaning governments. The Biden administration criticised the Morrison government's climate change policies as “[insufficient](#)”. The US Secretary of State Antony Blinken has said the

Biden administration will increase pressure on nations seen not to be acting fast enough on climate change: “Our diplomats will challenge the practices of countries whose action—or [inaction](#)—is setting the world back”.

Rebuilding our international reputation and assuming a leadership role on climate will give Australia a louder voice in a more uncertain international environment. We have always sought to compensate for our geographic isolation and unwieldy neighbourhood by leading in regional and international fora. For instance, the Hawke government was instrumental in the formation of [APEC](#)—a regional institution that has helped Australia secure and preserve access to free and open markets in the Indo-Pacific. It would be remiss for us to sacrifice future opportunities by falling behind on climate.

Bidding to host COP29 in partnership with the Pacific Islands would be a great opportunity to upgrade our climate policy settings, and recalibrate our international reputation. Just hosting COP would deliver benefits to local communities. COP21 in 2015 delivered a [\\$151-million](#) increase in tourism and hospitality spending to the Paris region. The comparable figure for COP26 in 2021 in Glasgow was [\\$139 million](#).

But the primary benefit to hosting a COP is intangible, if nevertheless valuable. By assuming a better diplomatic posture on climate, we can work to out-position China as the partner of choice in the Pacific. This is not to say that Pacific nations are drawing closer to China as a consequence of our climate inaction—China remains the largest contributor to global emissions and will continue to increase its emissions at least out to 2030. Rather, it is a recognition that we are missing an opportunity to create a favourable point of difference between us and our key competitor in a policy space that is significant to Pacific nations. Responsible national security analysts know we cannot compete with China in the Pacific on financial resources alone—doing so will require building and preserving close friendships built on trust, common interests, and understanding.

Policy Suggestion 9: Establish a true Research Institute for Sudden Catastrophes

Climate change is [expected to increase](#) the frequency, intensity, and economic cost of all manner of uncertain threats, ranging from future [pandemics](#) and [wars](#) to natural disasters and extreme weather events.

Record flooding, [exacerbated by climate change](#), has already wreaked havoc here at home. Just this past year, many Brisbane regions received [up to 80%](#) of their average annual rainfall in a three-day period. In Sydney, massive rainfall caused huge disruptions to commuters, and parts of regional New South Wales [were devastated](#) by flood-related damage. Insurers have paid out over two billion dollars in flood-related claims to Queensland and New South Wales residents, making it [Australia's third-costliest natural disaster](#). Victoria experienced record rainfall in October, with communities along the Murray River [in jeopardy](#) as dams reached capacity.

The frequency and severity of climate-related disasters over the past two years has put [immense pressure](#) on the Australian Defence Force (ADF), who have been called out to respond to numerous [flooding](#) and [bushfire-related events](#). Consistently using the ADF to respond to civilian emergencies places a significant strain on their finite resources. It is vital that steps be taken to remove this pressure on the ADF so their core activities are not jeopardised.

Extreme weather events impose severe economic costs. The estimated bill for the flooding in South East Queensland is a [staggering \\$7.7 billion](#) according to a Deloitte report. This exorbitant cost cannot just be dismissed as an outlier year. Rather, it will be a constant feature of our future. A report by the Climate Council found that [one in 25](#) Australian properties will be uninsurable by 2030 due to rising risks of extreme weather and climate change, indicating just how significant and widespread disaster risk is.

This calls for a fundamental reevaluation of how we think about and respond to disasters. The Productivity Commission has found that, across Australia, [97%](#) of disaster funding is spent after an event on recovery and clean-up, and just three percent spent on mitigation and resilience. We

are spending far too much on recovery and too little on preparedness and prevention.

Reversing this trend will require coordination between federal, state, and local governments and proactive institutions that anticipate and plan to address vulnerabilities in advance. It is untenable for Australians to remain dependent on rushed, ad-hoc policy that merely reacts to crises as, or after they occur. More organised management can and should allow us to respond to inevitable shocks more effectively and at lower cost.

Akin to the Productivity Commission, Australia needs an institution to regularly stress-test our resilience against crisis scenarios, including natural disasters exacerbated by climate change, and provide recommendations for additional policies to mitigate new and emerging risks.

In the latest Budget Blueprint, we recommended a [Research Institute for Sudden Catastrophes](#) (RISC) to fulfil this role. An annual budget of \$36

million—comparable to what the [Productivity Commission](#) spends in wages—would provide the Institute with the resources required to prepare for and manage a wide variety of risks, including climate risk. Prevention and mitigation of natural disasters [costs less](#) in the long term and is much more effective than funding provided in the wake of disasters. And every dollar spent in preparation not only saves money, but also bushland, homes, and lives.

Its independent advice would enable policymakers to better prepare for catastrophic climate events. The goal would be to create a costed playbook of mitigation policies for crisis scenarios, practise executing policy responses across levels of government, and thus avoid the inefficiencies and waste of ‘on-the-fly’ responses. RISC will be fundamental to improving national resilience and key to Australia’s ability to withstand, adapt, and grow in the face of regional and national crises.

Enabling regional adaptation to take advantage of new opportunities

Government must work to proactively support our regions as the energy shift takes hold, but to think that politicians in state and federal parliaments are best-placed to determine the future of Australia's regions would be a catastrophic error. Any policy solution aimed at supporting our regions as they adapt over the coming decades must be locally determined. Federal and state governments must support these communities by ensuring that locally determined strategies and policies are well-funded. The following policies form the basis of a blueprint for successful regional adaptation and diversification.

Policy Suggestion 10: Support a national coal infrastructure renewal and repurpose strategy

The government must provide financial and administrative support to coal mine and generator operators to develop renewal strategies for their infrastructure. Blueprint proposes that five years before mine or generator closure, operators be mandated to conduct stakeholder engagement to determine the most economically and socially beneficial use of their infrastructure after close-down. To support innovative regeneration plans, the Federal Government would match private investment, from the operator or otherwise, up to a value of \$100 million per asset.

As coal-fired generators and coal mines close over the next two decades, the infrastructure that they rely upon will become available for new industries and projects to utilise. In Australia and around the world, numerous inventive projects are being planned to ensure that the valuable infrastructure that has long supported the Australian economy can be reused, repurposed, and renewed to provide value and jobs to the regions.

Countless inventive examples exist in the US of innovative regeneration and renewal strategies—from a [data centre proposal](#) to transform decommissioned coal-fired generators plants and create 2,642 local jobs in [Becker, Minnesota](#), to trails tourism in the otherwise low-productivity

hilly terrain of [Mingo County](#), West Virginia.

In Australia, the [Woodlawn Eco-Precinct](#), built on a repurposed mineral mine in south-east New South Wales, is another successful example. AGL is planning to [repurpose](#) its Liddell power station into a renewable energy hub for solar storage systems, grid-scale batteries, and a waste-to-energy facility. Alongside such repurposing projects, government prioritising support for the development of Renewable Energy Zones could allow regional communities to pivot away from fossil fuels to industries that have far more future potential.

Already, successful examples of Renewable Energy Zones are underway. For example, New South Wales is developing new [Renewable Energy Zones](#) (including in the Hunter and Central Coast region) which would bring in around \$5.2 billion in private investment, and 3,900 construction and 500 ongoing jobs. The New England Renewable Energy Zone has already attracted overwhelming interest from private investors, with [80 registrations](#) expected to generate [\\$10.7 billion in private investment and 830 ongoing jobs](#).

These Renewable Energy Zones, building upon existing coal-fired generator infrastructure, would not only guarantee direct jobs but would produce the cheap, clean electricity required to sustain [a variety of new and existing industries](#). These include green aluminium, steel, ammonia and hydrogen, sustainable synthetic fuel production, controlled environmental horticulture, transport and logistics, and enabling technologies. Proposals to cluster these opportunities in [Renewable Energy Industrial Precincts](#) could be aided by government grants and underwriting. Modelling suggests that two precincts in [Gladstone](#) and [Hunter](#) could alone generate up to 45,000 new ongoing jobs by 2032. But the opportunity would still be significant even if it was only a tenth this size.

It is clearly unrealistic to expect all coal workers to shift directly into other renewable energy and industrial-sector jobs. But with targeted retraining programs there are more possibilities

than many may realise. Research shows that for every [million dollars invested](#) in large renewable projects, 12 new jobs could be created economy-wide for electricians, roofers, steel workers, machinists, engineers, truck drivers, research scientists, lawyers, accountants, administrative assistants, and others.

Policy Suggestion 11: Establish new coal adaptation authorities

We recommend establishing new coal adaptation authorities in local communities, funded by [\\$20 million](#) in initial funding from a federal grant.² They would be staffed primarily by respected local citizens and tasked with studying local issues relating to the energy shift, and developing policies, strategies, and proposing projects to solve these issues. They would maintain distinct statutory independence despite working with existing governments and agencies where appropriate.

Regional development efforts domestically and internationally have often been plagued by [overlap and inconsistency](#). This proposal centres on community empowerment and decentralisation of decision-making. This avoids a ‘one-size-fits-all’ approach being applied by distant bureaucrats without the knowledge of local context. No two regions are identical—each should be given the tools necessary to craft its own path forward.

The knowledge, connections, credibility, and on-the-ground capacity of local leadership is essential for successful adaptation of regional communities. Local governments with ongoing administrative responsibilities and a lack of experience at economic restructuring will have limited capacity for effective policy design. Without additional support, they cannot be expected to drive the extensive public and private collaboration necessary to facilitate legitimate diversification.

Existing local agencies provide some helpful precedent, including the 52 [Regional Development Australia Committees](#) and 56

[Natural Resource Management Organisations](#) nationwide. But with far broader development and resource management agendas, neither are fit to focus specifically on the acute shift away from coal. The [Productivity Commission](#) directly criticises the inefficiency of this broad, federally-coordinated model and recommends abolishing the Regional Development Australia Committees in favour of local bodies established only in targeted instances of exceptional necessity. Our coal communities fulfil these criteria.

Coal adaptation authorities would develop adaptation plans. Formed well in advance of a scheduled closure, coal adaptation authorities would act as a coordinator, bringing together existing local businesses, coal companies, worker representatives, academics, and investor groups to consult on potential opportunities.

Such stakeholder engagement would gather the best insights, while rallying the necessary support for effective action. The authority would be responsible for conducting a thorough fact-finding mission to ensure that its recommendations are data-driven.

These consultations would drive the formation of proactive plans which thoughtfully prioritise the greatest needs, both supporting individual workers and stimulating new economic activity in the region.

A key successful example of this model is the Latrobe Valley Authority. Formed in response to the painful and sudden closure of Hazelwood Power Station, the Authority provides immediate support to affected workers through the [worker transition service](#) and more broadly the [Latrobe Valley Economic Facilitation Fund](#). On top of that, the Authority consults with stakeholders from the local community, industry, and government to smooth the shift to clean energy. This two-pronged approach of broad economic development and support for displaced workers is critical and should be replicated in order to minimise potential disruption as Australia’s regions reorient their economies.

² In our [original proposal](#), we also advocated for five percent of state-collected coal royalties to be allocated to these authorities for ongoing funding. This has been omitted given the federal focus of this document.

Policy Suggestion 12: Create start-up incubators in regional communities with favourable seed funding

Innovation is the way of the future—in energy, in agriculture, in technology, and beyond. To improve the effectiveness of existing R&D spending and ‘crowd-in’ private capital, the Government should establish clean energy superclusters for priority technologies. The combination of R&D and entrepreneurial start-ups can create the basis for entirely new businesses. Business incubators could provide favourable loans to get the best ideas off the ground, as well as help resource and mentor rising entrepreneurs from the local community. By taking equity in the companies they invest in, these incubators could emulate the world-leading [Israel Innovation Authority](#).

As a proof of concept, the government should trial an innovation authority within one regional coal adaptation authority. If successful, a fund of \$10 million per authority as part of their \$20 million total grant, carefully allocated, could crowd-in private capital on a scale transformative to local communities. It is no surprise that other nations are considering these high-growth opportunities in their own diversification efforts.

In 2018, the Canadian government [asked](#) business leaders to collaborate with research institutions and universities to develop “job-creating superclusters of innovation”. Canada pledged over one billion dollars to develop these superclusters with matched funding from the private sector. They are expected to increase Canada’s GDP by more than [\\$54 billion](#) over 10 years. Like Canada, Australia has the research capacity, support from private industry, and ample financial capital to foster technology superclusters. A similar policy in Australia could finally bring us in line with international competition, while decreasing our emissions and unlocking future economic opportunity.

Policy Suggestion 13: Support regions with short-term labour market support

A raft of short-term labour market support may be required in those circumstances of acute transformation. But unlike the Greens’ policy—which calls for a decade-long, uniform [50% wage subsidy](#)—they should be a last resort, ensuring that market forces are not distorted when the need does not justify the means. Unsurprisingly, [discussions](#) with coal employees reveal a strong desire for clarity and certainty over their job prospects, which is something Labor has been [unable to provide](#). That’s why flexible labour market programs that provide assurance to workers play a critical role in successful structural adjustment.

Labor’s [Powering Australia Plan](#) is projected to create 604,000 jobs by 2030 relative to a business-as-usual scenario, and according to analysis by [RepuTex Energy](#), more than five of these jobs will likely be located in regional areas. However, other than this added bonus of job creation, Labor has done little to establish a policy that helps regional communities adapt in the emerging clean economy—particularly when faced with the accelerating closure of the nation’s coal-fired energy generators. If policymakers fail to adequately respond to the shift away from fossil fuels, between [100,000 and 300,000](#) Australian jobs in emissions-intensive industries could be at risk.

First and foremost, state governments should place as much responsibility as possible on coal generators. The [evidence](#) from Spain and Germany shows how doing so can support smooth re-employment for a substantial proportion of employees. Stations should be required to provide advanced notice of closure and a proactive plan for redundant workers. This would allow many to find short- and medium-term direct re-employment even before plants close. For example, through reallocation to other plants or decontamination, restoration, and conversion ventures.

Local authorities will play a key role in working alongside coal generators and potential new private-sector employers or investors to model projected timelines for redundancies and to

provide transitional services. While each authority retains the liberty and responsibility to design the most effective programs for its respective community, we expect common approaches to emerge and could imagine government funds approving proposals across three key areas:

Locally staffed employment and information hubs

These hubs would engage with industry to line up suitable re-employment opportunities for affected workers. [Hiring costs](#) have a tangible impact on employment; the hub's coordination function would lower hiring costs for firms and job-seeking costs for workers, which is likely to boost the total number of people employed in addition to making life easier for those seeking re-employment.

But free consultation would not be limited to direct employment opportunities; the hubs could also counsel workers on written applications, interview skills, longer-term career pathways, mental health, financial planning, relocation decisions for their families, and a wide variety of training and certification options.

Expanded financial incentives for part- and full-time certification and upskilling through existing external providers

The capacity to signal relevant skills and competencies is a crucial foundation for re-employment. Universities, TAFEs, and other certified VETs already provide a wide variety of opportunities for certification and upskilling. Instead of trying to deliver competing options internally, coal adaptation authorities would advise workers on existing courses and work with external providers to fill any gaps in the market with newly designed qualifications. They would also liaise with local employers to discern the most in-demand skills and emphasise the value of workers' qualifications.

Consistent with the current design of tertiary education funding, coal adaptation authorities could then offer subsidies and income-contingent loans, above and beyond those offered nationally, for a wide range of in-demand and approved qualifications. A variable scale of generosity in

subsidies and loan interest rates could nudge workers towards more socially beneficial sectors like aged care, technology, or rural health and education where skills shortages persist.

These market incentive structures would promote greater efficiency and engagement from all stakeholders. Rather than the [apathy provoked by free provision](#), workers are [more likely](#) to take ownership of their learning, given they would have actively opted into a program with a repayable debt commitment.

Rather than viewing retraining spending as a sunk cost, government funders would be directly financially motivated to ensure programs are as effectively designed as possible, given they recoup investment only when graduates are suitably re-employed. And rather than resting comfortably on guaranteed demand, commercial training providers would be forced to improve their services, given they would now have to compete fiercely to attract displaced workers in the first place.

Last-resort, early retirement packages for workers aged over 60

Some workers approaching the natural end of their career may not wish to pursue re-employment. In extreme circumstances where local authorities can demonstrate a lack of other superior options, voluntary early retirement packages, supported by coal-fired generator and mine operators, could be considered.

In this case, packages should be paid as a proportion of the worker's previous wage, akin to [short-term income insurance](#). Payments would decrease the further the worker is out from the age at which they can access the age pension (now 67 for most current workers born since 1 January 1957). For example, the average early retiree could receive 70% of their previous wage in the two years preceding pension access from age 65, but only 50% for the years from age 63–65 and down to 30% between 60–63.

All payments would be means-tested based on assets and income (including any severance packages, and superannuation which can be accessed from an earlier 'preservation age' between 55–60, depending on date of birth).

