

POWER UP: TEN CLIMATE GAMECHANGERS



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Cover image: By Andrew Correll.

The Climate Council acknowledges the Traditional Custodians of the lands on which we live, meet and work. We wish to pay our respects to Elders past, present and emerging and recognise the continuous connection of Aboriginal and Torres Strait Islander people to Country.

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Key findings

1 Australia's journey to net zero is only beginning. Over the next eight years to 2030, we will need to get on a steep trajectory of emissions reductions, with existing efforts ramped up significantly and quickly.

- › Australia has already warmed by around 1.4°C and is suffering significant losses from accelerating climate change. Worse is on the way as extreme weather events – such as bushfires, floods, heatwaves and droughts – occur more often, and become more severe.
- › To avoid the worst climate impacts, global emissions must halve this decade with net zero reached in the early 2040s. As a wealthy country with extraordinary renewable resources, Australia should aim to reduce its emissions by 75 per cent this decade, and reach net zero emissions shortly after.
- › The Climate Council has identified ten climate gamechangers – that use available technologies and can be put in place within the next few years – to set Australia on a steep emissions reduction path across the electricity, transport, building and industry sectors.
- › This builds on the Federal Government's existing plans to reduce national emissions by at least 43 per cent (below 2005 levels) by 2030, reaching net zero by 2050.

2 By reducing Australia's reliance on fossil fuels like coal and gas the Federal Government can address climate change, as well as our energy and cost-of-living crises.

- › Severe price rises in fuel and electricity are hitting Australian households and businesses hard. By accelerating investment in renewable energy, backed by storage and transmission, household disposable incomes across the national energy grid would be almost seven per cent higher by 2030.

- › Such smart investments would also halve the emissions produced from our electricity sector over the coming decades compared to the Federal Government's existing plans.

- › Not only are such investments the best way to cut emissions rapidly and protect households against further price hikes, they also ensure we are prepared for the early retirement of coal-fired power stations, supply chain issues or other international shocks.

- › The Climate Council recommends that transmission upgrades be planned to support a 100 per cent renewable electricity grid – even whilst energy consumption increases to support electrification in transport, buildings and industry – and a mandated Renewable Energy Storage Target, be put in place by the end of 2023 to increase grid storage.

3 There is an acute shortage of skilled workers across clean industries, and this needs to be rapidly addressed in order for Australia to be able to race towards net zero.

- › Australia faces a shortage of skilled workers in many areas of the economy. Clean energy industries are facing an especially acute shortage, with three in four solar companies finding it difficult to recruit electricians with adequate experience.
- › Investing in skills training for renewable energy will create an extra 30,000 jobs in Australia as we shift to net-zero emissions. Skilled workers are needed for the construction of renewable energy infrastructure, working on solar farms, wind farms, batteries, transmission lines and pumped hydro, as well as in energy efficiency and clean transport.

- › A National Energy Transition Authority should be set up to plan for and maximise the benefits from Australia's energy transformation, including setting firm closure dates and developing transition plans for Australia's fleet of coal-fired power stations by 2024.
- › Planning for and building the right workforce can help revitalise our regions, support workers and regional communities that are directly impacted by changes, and help address high levels of youth unemployment and underemployment.

4 To get emissions falling as fast and far as possible by 2030, we need to electrify our vehicles, find new ways of moving people around and reduce the need to travel.

- › By putting mandatory fuel efficiency standards for light vehicles in place, the Federal Government can give Australians access to more affordable cars that are cheaper and cleaner to run.
- › The benefits of such standards to our economy and our environment (through reduced emissions and fuel costs) would be enormous, with the net benefit amounting to billions of dollars over the next two decades.
- › The Federal Government must work with States and Territories to transition all bus and train fleets to zero emission fleets as soon as possible, starting with a rapid phase out of diesel buses.
- › Running all our buses on renewable electricity will make our air cleaner and provide many, immediate health benefits. Air pollution from cars, trucks and fossil-fuel powered buses are responsible for an estimated 1700 deaths each year; more than the road toll.

5 The Federal Government needs to put its money where its mouth is by supporting households and industry to move away from fossil fuels, and phasing out any taxpayer support for coal, oil or gas.

- › Emissions from buildings in Australia must drop to net zero – ideally by 2030. In the building sector, most of the solutions we need are readily available, affordable and will help households and businesses reduce running costs.
- › For established buildings, gas appliances (including heaters, hot water systems and cooktops) should be phased out and replaced as soon as possible with bans on new gas appliances in place from 2025.
- › All the biggest emitting industries in Australia are regulated by the Safeguard Mechanism. This mechanism needs fixing because industrial emissions are going up. Getting the settings right will help transform industries, enabling Australians to benefit from the global race to net zero.
- › Adding any fossil fuels – anywhere – worsens climate change. Our public money should not be funding the extraction or consumption of coal, oil or gas. All fossil fuel subsidies should be phased out following a review prior to the 2022-23 budget and public spending should be aligned with the goal of reducing emissions steeply across the economy this decade and beyond.

Introduction

In May 2022, a Labor government was elected with a mandate for strong climate action. The outcome of the federal election represents a monumental shift in our economic and political landscape, with politicians who fail to act at the speed and scale necessary to address accelerating climate change paying a political price for their inaction. The Federal Government plans to reduce national emissions by at least 43 per cent below 2005 levels by 2030, reaching net zero by 2050. Over the coming decade, Australia will need to get on a trajectory of steep emissions reductions so these efforts must be significantly, and quickly, ramped up.

Australia has already warmed by around 1.4°C and is suffering significant losses from climate change with worse on the way. Extreme weather events – such as bushfires, floods, heatwaves and droughts – are happening more often, and are more severe. To avoid the worst climate impacts, global emissions must halve this decade with net zero reached in the early 2040s. Australia is a wealthy country and among the worst polluting countries on a per person basis. We also have immense renewable energy resources, which means we can cut emissions faster. Australia should aim to reduce our emissions by 75 per cent (below 2005 levels) by 2030, and reach net zero emissions by 2035.

As well as being faced with the need to quickly reduce emissions, the Federal Government has inherited a cost-of-living crisis that has been years in the making but has come to a head now. Wholesale electricity prices skyrocketed to all-time highs in the second quarter of 2022 (AEMO 2022a), with retail electricity prices following suit. Russia's war in the Ukraine has driven the price of gas and oil sky-high with drivers paying more than \$2 a litre for petrol at its peak. These price rises are directly affecting the hip pocket of Australians and adding inflationary pressures to the economy, worsening the cost-of-living crisis.

Australia is already suffering significant losses from climate change. Accelerating our energy transition will increase energy security and affordability, boost productivity, and ensure we get on a trajectory of steep emissions reductions.

There is a risk that in responding to sudden price hikes reducing emissions is deprioritised or slows. This would be foolish. In part, the energy and cost-of-living crisis is due to our reliance on fossil fuels. This can only be alleviated in the medium to long term by a swift transition to renewable energy and electrification with improvements in energy efficiency. Accelerating this transition will also insulate us against international price shocks and supply chain disruptions – increasing Australia’s energy security and boosting the productivity of our economy.

We can and must tackle the climate, energy and cost-of-living crises simultaneously. To assist the Federal Government to rise to the challenge, the Climate Council outlines ten climate gamechangers that can strengthen the economy, put downward pressure on energy prices over the medium to long term and drive steep emissions reductions this decade – particularly in the high emitting sectors.

Importantly, the Federal Government, and in some cases along with State/Territory Governments, has the power to put in place every one of these interventions within the next few years.

TEN CLIMATE GAMECHANGERS:

1. Plug in 100 per cent renewables
2. Boost batteries for rock-solid renewable supplies
3. Upskill Australians for clean trades
4. Plan ahead for coal closures so no-one is left behind
5. Rev up fuel efficiency standards
6. Ditch diesel for renewable electric buses
7. Make new buildings net zero, and electrify established ones
8. Ensure major polluters do their fair share
9. End public funding and finance for coal, gas and oil
10. Develop a comprehensive climate and energy investment plan

BOX 1: WHAT HAS THE FEDERAL GOVERNMENT ALREADY COMMITTED TO?

The Federal Government's emissions reduction target is to reduce greenhouse gas emissions by 43 per cent compared to 2005 levels by 2030. The Powering Australia Plan outlines how the government plans to achieve this target (ALP 2021). Rewiring the Nation is the major initiative within the Powering Australia Plan, which will create a new body – the Rewiring the Nation Corporation – to invest \$20 billion to modernise the electricity grid. The initiative is designed to bring forward the construction of transmission infrastructure, by lowering financial and planning barriers and enabling the commercial development of large-scale renewable energy resources.

The Powering Australia Plan also dedicates \$200 million to the installation of 400 community batteries, and \$100 million for the development of shared 'solar banks', as well as outlining a commitment to reduce the emissions of the Australian Public Service to net zero by 2030. Overall, these measures are projected to increase renewable energy penetration to 82 per cent by 2030 (versus 68 per cent in a "business as usual" scenario).

A significant proportion of emission cuts in the Powering Australia Plan is expected to occur within industry, primarily through improvements to the Safeguard Mechanism. The Federal Government's Safeguard Mechanism applies to high polluting facilities that emit more than 100,000 tonnes of carbon dioxide equivalent (CO₂e) per year across a range of sectors, including mining, oil and gas extraction, manufacturing, transport, and waste.

Modelling conducted by RepuTex Energy on behalf of Labor found that the Powering Australia Plan could reduce average residential electricity bills by \$275 in 2025 and \$378 in 2030. The modelling also found that the plan would reduce emissions by 440 million tonnes CO₂e between 2023 and 2030, increase renewable energy penetration to 82 per cent by 2030, attract \$76 billion in total investment and create 604,000 direct and indirect jobs (RepuTex Energy 2021).



The Powering Australia Plan.

The Federal Government's *Powering Australia Plan* is a strong start but we will need to go further, faster. Determined early action will ensure Australia can exceed its current target.

Ten climate gamechangers

Australia's emissions are mostly (~80 per cent) due to the burning of fossil fuels – coal, gas and oil. The remainder come from non-fossil fuel sources. Electricity generation accounts for around 33 per cent of Australia's emissions, industry accounts for around 34 per cent,¹ and transport accounts for around 19 per cent (DCCEEW 2020).

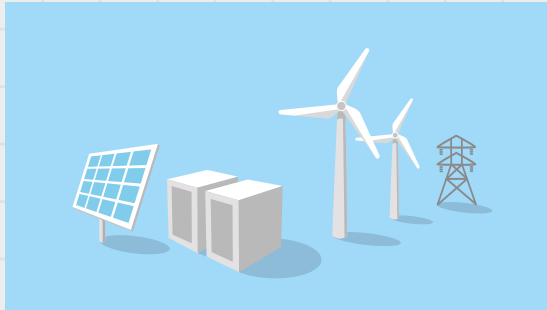
When considering emissions at the point when electricity is consumed rather than when it is generated – buildings and industry represent a much larger share at around 21 per cent and 47 per cent respectively (ClimateWorks 2020). Whichever way you look at it, moving away from fossil fuels and driving down emissions across electricity, transport, buildings and industry is crucial to tackling climate change.

Our climate gamechangers focus on sensible ways we can best use available technologies within the next few years, and set up an environment that enables steep emissions reductions this decade across electricity, transport, buildings and industry. These actions are not sufficient to get us to 75 per cent emissions reductions by 2030 alone, but they would set us on the right course. Delaying their implementation would lock in avoidable emissions and worsen climate impacts.

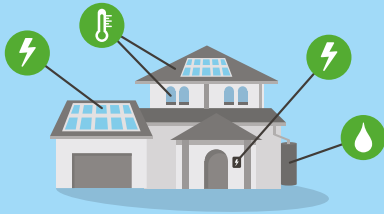
1. These are emissions associated with mining, manufacturing and construction.

Figure 1: Ten Climate Gamechangers.

10 CLIMATE GAMECHANGERS



| SECTOR | ENERGY SYSTEM | TRANSPORT |
|-----------------------------------|---|--|
| % OF AUSTRALIA'S EMISSIONS | 33% | 19% |
| WHAT'S NEEDED BY 2030? | <p>Reach 100% renewables (accounting for +40% generation to support electrification in other sectors).</p> | <p>Cut transport emissions at least in half, with close to 100% of new car sales being zero emissions and significant improvements in public and active transport infrastructure and uptake.</p> |
| WHAT'S NEEDED FIRST? | <p>1. Enable transmission to support 100% renewables in line with the Australian Energy Market Operator's 'Strong Electrification' pathway. (p.9)</p> | <p>5. Implement mandatory fuel efficiency standards as soon as possible to boost supply of electric vehicles. (p.19)</p> <p>6. Work with states and territories to ditch diesel buses for renewable-powered electric ones. (p.21)</p> |
| | <p>2. Boost storage and increase efficiency with a mandated Renewable Energy Storage Target and Demand Reduction Targets (introduced by end of 2023). (p.11)</p> | |
| | <p>3. Upskill Australians for clean trades. (p.13)</p> | |
| | <p>4. Establish a National Energy Transition Authority to set closure dates and develop transition plans for all coal-fired power stations by 2024, and support communities through the process of transition. (p.15)</p> | |

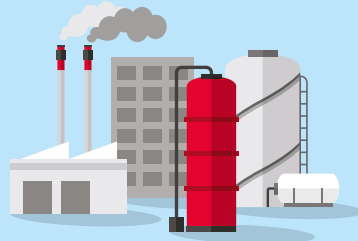


BUILDINGS

20%*

Make buildings net zero through smarter and more efficient design, electrification and retrofitting of established buildings.

7. Mandate net zero new buildings, ban new gas connections, and introduce a ban on new gas appliances effective from **2025**. (p.25)



INDUSTRY

34%**

Cut industry emissions at least in half using increased efficiencies, electrification and fuel switching and phasing out coal, oil and gas extraction, whilst taking advantage of new economic opportunities in the global race to net zero.

8. Overhaul the Safeguard Mechanism to drive real emissions reductions from Australia's largest industrial emitters.

The scheme must ensure that heavily polluting industries do their fair share and are incentivised to achieve the steepest emissions reductions possible. (p.29)



FINANCE

Public spending must be aligned with the goal of achieving **net zero by 2035**.

9. End public funding for fossil fuels and review subsidies before the **2022-23** federal budget. (p.32)

10. Develop a climate and energy investment plan and introduce climate budget statements (starting in **2023-24**). (p.34)

*This includes emissions from electricity consumed in buildings, which are also counted as emissions from the energy system (first column).

** These are emissions associated with mining, manufacturing and construction (DCCEEW 2020). If electricity use is included, industry accounts for close to half of Australia's emissions.

Transform the energy system



Figure 2: In 2020-21 wind generated around nine per cent of Australia's energy. Wind capacity needs to triple over this decade to ensure Australia reaches 100 per cent renewables by 2030. Major investments in transmission and storage are needed to ensure Australia reaches its renewable energy potential.

BOX 2: TRANSFORM THE ENERGY SYSTEM: WHAT'S NEEDED BY 2030

Transforming Australia's electricity sector to run on close to 100 per cent renewable energy within the next decade is crucial for achieving emissions reductions at the scale required, as well as supporting further decarbonisation in transport, buildings and industry through electrification. The 'Strong Electrification' pathway² in the Australian Energy Market Operator's (AEMO) latest plan details how Australia can achieve almost 100 per cent renewable energy in the National Electricity Market (NEM) by 2030.

Under this pathway, the NEM would need approximately 40 gigawatts (GW) of new wind capacity and 40GW of new utility and rooftop solar capacity – tripling and doubling existing

capacity of those two resources respectively this decade (AEMO 2022b). Electricity consumption would grow around 40 per cent due to electrification in other sectors by 2030. By mid-century, the total generation capacity of the NEM will need to quadruple to accommodate an increase in consumption of around 133 per cent supporting electrification in buildings, industry and transport. AEMO's estimate of the renewable energy and storage that would be required to support this is set out in Table 1.

Investing in renewable energy, backed by storage and transmission, is not only the smartest way to cut emissions rapidly but also the best strategy to maintain electricity reliability and protect against higher electricity prices.

Table 1: Renewables and storage needed in the *Strong Electrification* pathway.

| | 2023-24 | 2030-31 | 2040-41 | 2050-51 |
|--|---------|---------|---------|---------|
| Storage (GW) (utility scale storage, coordinated distributed storage) | 3.49 | 22.71 | 40.06 | 61.95 |
| Renewables (GW) (solar thermal, offshore wind, wind, utility scale solar, distributed PC, hydro) | 58.07 | 134.20 | 187.58 | 262.89 |

² AEMO's 'Strong Electrification' pathway sensitivity assumes the same emission reduction objectives as the 'Hydrogen Superpower' scenario, but with limited hydrogen uptake. Stronger and faster electrification of transport and heavy industry is therefore needed to achieve the economy-wide emission reductions. Additional high-quality renewables such as offshore wind may also be needed in the 2040s in this pathway. (AEMO 2022b, p.92)

1. Plug in 100 per cent renewables

Transmission infrastructure should be planned and delivered with the clear goal of supporting close to 100 per cent renewable electricity from 2030. We are going to be using much more electricity into the future (with electricity consumption forecast to increase by around 42 per cent by FY2031),³ and as the backbone of our grid our transmission infrastructure needs to be up to the job. The total length of required transmission will need to increase by approximately 24 times what it is now (AEMO 2022c).⁴ The most important transmission projects identified by AEMO that must be progressed urgently are: HumeLink, Sydney Ring (Reinforcing Sydney, Newcastle and Wollongong Supply), New England REZ Transmission Link, Marinus Link (cables 1 and 2), and VNI West (via Kerang). In addition, investment is needed in the Gladstone Grid Reinforcement.

WHY?

The Federal Government has committed \$20 billion to a Rewiring the Nation Corporation (RNC), which will provide low-cost finance to industry to build new transmission infrastructure. This will underpin the growth of renewables to 82 per cent penetration by 2030, which is a great step towards delivering a cleaner, greener energy system. But Australia needs to source 100 per cent of its power supply from renewable sources by 2030 – and make steep inroads into electrifying other sectors – to achieve the steep emissions cuts needed this decade. So we need a transmission network that can support this.

THE BENEFITS

- › **Boosting economic productivity:** Forecast Gross State Product for the states covered by the NEM (NSW, Qld, SA, Tas and Vic) would be higher under the 'Strong Electrification' scenario – at around AU\$2.2 trillion (versus AU\$2.1 trillion under the Federal Government's existing plans).
- › **Helping households:** Household disposable income across the NEM states would be almost seven per cent higher in the 'Strong Electrification' pathway compared to our current trajectory ('Steady Progress' scenario) and around 2.2 per cent higher than what the Federal Government's plans would achieve.

3. Under the 'Strong Electrification' scenario.

4. The total required distance in 2023-24 is 1,179km. This would need to double by 2026-27 to 2,490km, double again by 2027-28 to 5,594km, double again by 2030-31 to 10,605km, and again by 2043-44 to 22,227km.

- › **Protecting power supplies:** Early delivery of transmission will provide protection against earlier than anticipated retirements of coal fired power stations.
- › **Avoiding climate harm:** Achieving 100 per cent renewables while rapidly electrifying other parts of our economy would prevent 196 million tonnes of carbon dioxide equivalent (Mt CO₂e) being released into the atmosphere by 2030 relative to AEMO's 'Step Change' scenario.⁵ These avoided emissions add up quickly over time – by 2050 Australia's electricity sector would produce half as many harmful emissions compared to the Federal Government's existing plans (480 Mt CO₂e instead of 891 Mt CO₂e).

WHAT'S REQUIRED TO GET US THERE

- › Community support and appropriate social licence through genuine and well-designed consultation.
- › Strong collaboration with the States and Territories – as the Commonwealth does not have access to the same level of detailed local information, doesn't control access to land and has less community consultation experience.

FURTHER RESOURCES

- › AEMO (Australian Energy Market Operator) (2022b) 2022 Integrated System Plan.
- › RE-Alliance (2021) Building Trust for Transmission Earning the social licence needed to plug in Australia's Renewable Energy Zones.

Figure 3: In February this year, construction began on Project EnergyConnect, a 900 kilometre transmission link between South Australia and New South Wales. It is the first of a number of key transmission lines proposed by the Australian Energy Market Operator to modernise the grid and support the rollout of renewables.



5. The 'Step Change' scenario in AEMO's 2022 Integrated System Plan is the scenario most closely aligned with the Federal Government's existing plans.

2. Boost batteries for rock-solid renewable supply

As our electricity grid switches to renewable sources, energy storage and demand management will be required to balance supply and demand, support grid security and ensure our energy system is flexible and reliable.

The Federal Government should put in place a Renewable Energy Storage Target by the end of 2023, with a mandate to increase grid storage across the NEM. The mandate should have specific targets per year for additions, from 2023 to 2030, consistent with the 'Strong Electrification' pathway in AEMO's Integrated System Plan. Storage

options supported by such a target could include pumped hydro, grid-scale batteries, community batteries, and behind-the-metre batteries that form part of a Virtual Power Plant – that is any battery system that is accessible and controllable to support grid security and resilience.

At the same time, State and Territory governments could smooth the way to 100 per cent renewables by implementing Demand Reduction Targets, which would help balance the system as it undergoes this once-in-a-century change.



Figure 4: The Hornsdale Power Reserve in South Australia is the world's first big battery and was the largest lithium-ion battery at the time of installation in 2017. A mandatory Renewable Energy Storage Target would help ensure that sufficient storage is supplied.

WHY?

When and how businesses, industry and households use energy has a big impact on our system, making it more or less reliable throughout the day and year. In Australia, the energy storage sector is the least developed part of the energy supply chain. The timing of future storage needs is still uncertain – as it is influenced by closure of existing power stations – and technologies are also still evolving. These factors increase the risk of under-provision, or of making poor and rushed decisions as crises emerge. A mandated Renewable Energy Storage Target would be a sensible way of making sure the private sector provides adequate storage capacity.

THE BENEFITS

- › **Attracting the right investment:** A mandated Renewable Energy Storage Target provides strong investment signals for new clean energy generation and storage. In August 2022, BlackRock invested \$1 billion in big battery projects in Australia. This was the first battery storage investment made by the firm's climate infrastructure business in the Asia-Pacific, and its biggest ever (RenewEconomy 2022). A Renewable Energy Storage Target could attract even greater investment.
- › **Stabilising the power system:** Batteries have been proven to stabilise the power system and expand transmission capacity, allowing more power to flow across the grid to consumers (for example, the Hornsdale Power Reserve and the Victoria Big Battery) (Mountain et al. 2022).
- › **Keeping pace with renewables:** There are currently 30 large-scale energy storage projects underway around Australia (Clean Energy Council 2022a), and an increasing uptake of household batteries (Clean Energy Council 2022b). A Renewable Energy Storage Target would ensure such momentum continues and grows in line with the growth of renewables.

WHAT'S REQUIRED TO GET US THERE

- › A mandated Renewable Energy Storage Target could be modelled on the existing Renewable Energy Target, which has been highly successful in driving uptake of renewable energy.
- › This target should be delivered as an alternative to the Energy Security Board's proposed Capacity Mechanism which is proposed to start from 2025 (DCCEEW 2022). Australia needs direct investment in more storage now – not complex new market mechanisms which may prop up coal and gas and come online too late to drive down emissions steeply this decade.
- › Such a target should be legally binding with accountability for non-compliance.

FURTHER RESOURCES

- › Mountain, B.R., Harris, P.N., Woodley, T., Sheehan, P. (2022). Electricity storage: the critical electricity policy challenge for our new government. Victoria Energy Policy Centre, Victoria University, Melbourne.
- › Clean Energy Council (2022c) Submission for 2022 Capacity mechanism High-level design paper.

3. Upskill Australians for clean trades

To accelerate the clean energy transition Australia will need to address a shortage of skilled workers. Shifting to a zero emissions economy will create tens of thousands of new jobs, but these workers will need technical skills and training. The Federal Government must clearly identify skills shortages and provide funding for university and TAFE courses to address such gaps. The Federal Government should work with the tertiary sector to ensure sufficient student places and teachers are available across Australia, and work with industry to shape the content of these courses. Short-course opportunities will also need to be developed for upskilling people with existing trades. These training opportunities could be linked with occupational licensing.

WHY?

Australia already faces a shortage of skilled workers in many areas of the economy, partly due to a slowdown in migration during the COVID-19 pandemic, a need for greater and high-quality training and education, and lack of childcare. Clean energy industries are facing an especially acute shortage of skilled workers. Three in four solar companies say they have difficulty recruiting electricians, with “not enough candidates with specific experience in renewable energy” (Briggs et al. 2020).

Failure to address the current skills shortage will slow the pace of Australia’s clean energy transition. Workers with specialised skills are needed for the

construction and maintenance of renewable energy infrastructure – at both a household and utility scale – and in clean energy manufacturing. Skilled workers are also needed for building and retrofitting energy efficient homes, and in clean transport.

THE BENEFITS

- › **Tens of thousands of new jobs will be created in Australia as we shift to net-zero emissions:** It is estimated that up to 30,000 additional workers are needed for the construction of renewable energy infrastructure, working on solar farms, wind farms, batteries, transmission lines and pumped hydro (Infrastructure Australia 2021). Many more jobs will be created as Australia repositions itself to become a clean energy superpower. A report released last year by the Business Council of Australia (with key unions and environmental groups) found that Australia could grow a new clean energy export mix that would create almost 400,000 new jobs (Accenture 2021). Upskilling Australians now will ensure we can meet this huge and growing skills demand to ensure there are no handbrakes on the growth of these new industries.
- › **Revitalising our regions:** Around 75 per cent of renewable energy job opportunities to 2035 could be in regional and rural Australia (Briggs et al. 2020).
- › **Transferable skills:** In Queensland, more than 80 per cent of the tasks required for a clean economy are already being performed by workers today. Some workers



Figure 5: Globally, renewable energy employs about 32 per cent of women, compared to 22 per cent in the energy sector overall. The energy transformation offers an opportunity to reshape how energy is produced and distributed, including ensuring equal access to these opportunities (IRENA 2019).

may only require upskilling (i.e. on the job training or a short course) rather than retraining (i.e. gaining a new qualification) (Deloitte Access Economics 2021).

- › **The future of work:** Training and job opportunities in the clean economy could help to address the high levels of youth unemployment and underemployment in Australia, given that there is a high level of interest from young people in working in the green economy in the next ten years (Accenture 2022).

WHAT'S REQUIRED TO GET US THERE

- › The Federal Government has already pledged \$100 million to create 10,000 New Energy Apprenticeships. These will need to be designed carefully, as electrical apprenticeship completion rates are low, currently at just 52 per cent (ETU 2022).
- › Australian governments are in the process of negotiating a new National Skills Agreement which will guide shared investment over the years ahead. It is important that this agreement lifts the level of national investment in core skills programs like TAFE and apprenticeships, while also delivering new opportunities for micro-credentialing and upskilling so that workers with existing skills can rapidly transition to clean energy jobs.

FURTHER RESOURCES

- › Accenture (2021) Sunshot: Australia's opportunity to create 395,000 clean export jobs. Commissioned by the Australian Conservation Foundation, World Wildlife Fund, Business Council of Australia and the Australian Council of Trade Unions.
- › Briggs, C., Rutovitz, J., Dominish, E., Nagrath, K. (2020) Renewable Energy Jobs in Australia – Stage 1. Prepared for the Clean Energy Council by the Institute for Sustainable Futures, University of Technology Sydney.
- › Clean Energy Council (2020) Clean Energy at Work.

4. Plan ahead for coal closures so no-one is left behind

A National Energy Transition Authority should be established to plan for and maximise the benefits from Australia's energy transformation, including setting firm closure dates and developing transition plans for Australia's fleet of coal-fired power stations by 2024. Ideally, this authority would work in collaboration with agencies based in coal and gas regions

to support economic diversification and retraining aligned with the priorities and strengths of different communities. Such an authority could also work with communities based in Renewable Energy Zones to facilitate the sharing of lessons. This could help build trust and community support for the energy transformation and ensure good outcomes for all Australians.



Figure 6: A number of coal station closures have been brought forward, including Australia's largest coal-fired power station, Eraring which will close in 2025 (seven years ahead of schedule). All government owned coal power stations in Western Australia will also be retired by 2030. A National Energy Transition Authority could help support communities through this process.

WHY?

The role of coal and gas production in a heavily diversified economy like Australia is easy to overstate. However, there are many communities that have historically relied on the income provided by coal and gas extraction or consumption. Recently, the closure dates of many of Australia's most polluting facilities have been accelerated with owners required to provide three years' notice. It is virtually certain that more closure dates will be brought forward. Seventy per cent – and possibly even all – of Australia's coal generators could retire by 2030, even without the Federal Government actively embracing the 'Strong Electrification' pathway. If this is done without advanced planning, communities are likely to be left behind with poor outcomes.

THE BENEFITS

- › **Supporting workers and regional communities:** A National Energy Transition Authority would enable the transformation of Australia's energy system to more affordable, reliable, zero emissions power while at the same time supporting workforce development, economic diversification and revitalisation of our regional communities. Honest and meaningful engagement with local residents will provide ownership over the transformation of their regions.
- › **Avoiding mistakes:** There are strong benefits to having a national body, including ensuring that lessons learned in one region are applied elsewhere.
- › **Charting an inclusive path forward:** A National Energy Transition Authority could work to ensure all stakeholders can meaningfully participate in decision-making processes, have agency over their futures, and be equipped with the information and resources required for the transition (Next Economy 2022a).

- › **Minimising 'shocks':** Early and proactive management of the transition will minimise shocks and provide greater opportunity to unlock benefits.

WHAT'S REQUIRED TO GET US THERE

- › Many of the levers relevant to transition planning are vested with state, territory and local governments, so the creation of a National Energy Transition Authority will require extensive collaboration across all levels of government, and ideally with Regional Transition Authorities.
- › Many regions have already begun planning for Australia's energy transition through formal or state-funded processes, as well as grassroots or civil society-led initiatives. Every community also has its own needs and unique challenges. Development of a transition authority should therefore be done in a way that coordinates, amplifies, extends and supports existing local efforts, without duplicating or overriding these.

FURTHER RESOURCES

- › Australian Council of Trade Unions (2022) Energy Transition Authority critical to creating secure jobs for a safer climate.
- › The Next Economy (2022a) What Regions Need on the Path to Net Zero Emissions.
- › The Next Economy (2022b) Transforming Queensland: The Case for a Transition Authority.

Clean up our act on transport



Figure 7: Cleaning up our act on transport means transitioning from petrol and diesel fuelled vehicles to electric ones. It also means changing how we get around and embracing active transport options, like bike riding or walking.

 **BOX 3: CLEAN UP OUR ACT ON TRANSPORT: WHAT'S NEEDED BY 2030**

Transport comprises around 19 per cent of Australia's emissions (at the point of generation). The majority of transport-sector emissions (roughly 85 per cent) come from road transport, with around 70 per cent of road transport emissions coming from light vehicles (cars, motorcycles and light commercial vehicles) and the remainder coming from heavy-duty trucks and buses (DCCEEW 2020). Around ten per cent of Australia's transport-related emissions come from domestic aviation (although these were slightly lower in recent years due to COVID-19). The remaining ten per cent come from rail (both passenger and freight), domestic shipping and other sources (DCCEEW 2020). International aviation and shipping are not included in Australia's domestic emissions accounting.

To get emissions falling as fast and far as possible by 2030, we need to electrify our vehicles and find new ways to move people around, as well as reducing the need to travel. Australia should aim to cut transport emissions at least in half by 2030. Key climate solutions for decarbonising personal road transport this decade involve

providing viable alternatives to driving, like expanding access to reliable, comfortable public transport, facilitating active modes of transport through safe pedestrian and bike paths, and powering cars, buses, trains and trams with 100 per cent renewable energy. This will require reimagining cities in a way that enables people to live, work and play in close proximity.

We need to stop selling polluting petrol vehicles as soon as possible, so that we can start to transition our private and public transport fleets to zero emissions. Solutions for heavy road transport will include a mixture of increased efficiencies through route optimisation, electric trucks paired with fast-charging infrastructure, and hydrogen produced from renewable electricity.

Domestic aviation emissions could be reduced through mature solutions such as route optimisation and mode-shift to fast rail, as well as a range of emerging solutions including alternative fuels and small electric planes (ClimateWorks 2020).

Electrifying vehicles, increasing access to public transport, and reimagining our cities are all essential to getting transport emissions down.

5. Rev up fuel efficiency standards

The Federal Government must develop and implement mandatory fuel efficiency standards that can see all new light vehicles sold being zero emissions as soon as possible.⁶ Standards should be designed to put our new light vehicle market on a trajectory that broadly aligns with fuel efficiency targets in the United States, New Zealand and European Union. Fit-for-purpose Australian standards would also involve minimal use of credits and other loopholes that allow the big auto companies to keep importing dirty vehicles.

WHY?

To decarbonise transport, Australia needs to significantly increase uptake of electric vehicles (EVs). This will only be achieved through increased supply of these vehicles. The lack of mandatory fuel efficiency standards in Australia – combined with a lack of other national purchase incentives for zero emissions vehicles – is the primary reason for the low supply of these vehicle models on offer in Australia. Most of our peers already have fuel efficiency standards and are not facing the same challenge as Australia in securing electric vehicles.



Figure 8: In Australia, electric vehicle sales tripled from 2020 to 2021, representing a two per cent share of all car sales. However, this is far below the global average of nine per cent, or leaders like Norway (at 72 per cent) and Sweden (at 45 per cent) (Electric Vehicle Council 2022a).

6. Fuel efficiency standards involve manufacturers paying a penalty for exceedance of carbon emission targets set for the average of new vehicles they sell. Manufacturers also receive credits to trade with other manufacturers in the instance of beating these carbon emissions targets. These targets are adjusted over time to align an increase in the efficiency of the new vehicle fleet with the necessary reduction in emissions to achieve climate change targets.

THE BENEFITS

- › **Making EVs more affordable:** The cheapest electric vehicle available in Australia costs almost \$45,000, compared to just \$18,000 overseas. Implementing fuel efficiency standards will incentivise manufacturers to bring more affordable EVs to the Australian market.
- › **Lower running costs:** Electric vehicles have fewer moving parts and require less maintenance, resulting in savings of around \$300-\$400 per year. They are also around 70 per cent cheaper to run because they don't need petrol or diesel, and are instead charged with electricity (Electric Vehicle Council 2022b). For the average Australian driver this would result in savings of around \$1560 per year (Electric Vehicle Council 2022b). If an owner has an appropriate solar panel setup, charging is basically free. While electric vehicles are more expensive to purchase upfront, these costs can be outweighed by day-to-day savings in fuel and maintenance. EVs are expected to reach cost parity with petrol vehicles by around 2025/26 (Electric Vehicle Council 2022b).
- › **Economic savings:** A cost-benefit analysis conducted by the Bureau of Infrastructure, Transport and Regional Economics (BITRE) in 2016 found that the benefits outweighed the costs for three different fuel efficiency targets considered. Benefits included reduced fuel costs (of between \$10.8 billion and \$27.5 billion by 2040), and reduced greenhouse gas emissions. Overall, the net benefit across all three targets ranged from \$5.8 billion to \$13.9 billion by 2040.
- › **Clean air and health benefits:** There are immediate health benefits to cleaner air with up to 1700 deaths avoided each year due to reduced air pollution (Schofield et al. 2017).
- › **Broader economic benefits:** Redirecting spending on imported fossil fuels to Australian-produced electricity would have broader economic benefits.

WHAT'S REQUIRED TO GET US THERE

- › Active engagement with auto manufacturers in Australia to illustrate the benefits of selling more clean cars in Australia rather than continuing to offload dirty ones.
- › Parallel investment in charging infrastructure so that it's available as more EVs hit the road – with a particular focus on regional areas and key interstate transport routes.
- › Standards should be designed to address Australia's unique market dynamics and transport needs – while being ambitious enough to get us to 100 per cent of new sales being EVs as soon as possible.
- › Avoiding the introduction of loopholes when designing standards, which would undermine the integrity of fuel efficiency targets (for example super credits and off cycle credits should not be included).

FURTHER RESOURCES

- › Climate Council (2022a) Everything you need to know about how Australia can boost electric vehicle supply.
- › Electric Vehicle Council (2022c) Securing affordable electric vehicles of all shapes and sizes for Australian households and businesses.

6. Ditch diesel for renewable electric buses

The Federal Government must work with States and Territories to transition all bus and train fleets to zero emission fleets as soon as possible, starting with a rapid phase out of diesel buses for cleaner, quieter, and more comfortable alternatives.

WHY?

To play our role in ensuring a liveable future and achieving the science-backed target of Australia reaching net-zero emissions our country needs to embrace public transport, and active transport options like walking and bike-riding.

Electric vehicles are an important piece of the puzzle, but we won't achieve our climate targets with EVs alone. Replacing all dirty petrol cars with electric vehicles also won't address other transport challenges such as car traffic in our cities, and the huge and inefficient amounts of land (for example for parking) that a car-centric transport system requires.



Figure 9: There is significant support for investment in clean public transport. A poll of over 2,000 Australians found eight in ten believe governments should invest more in public transport, with seven in ten keen to see Australia's entire bus fleet electrified and running on renewables as soon as possible (Climate Council 2022b).

THE BENEFITS

- › **Cleaner air, healthier communities:** Air pollution from cars, trucks and fossil-fuel powered buses is responsible for an estimated 1700 deaths every year in Australia, more than the national road toll (Schofield et al. 2017).
- › **Reducing the costs of living:** Australians are reliant on cars because our footpaths, bike lanes and public transport infrastructure are all inadequate (Scheurer et al. 2017). This raises the costs of getting around for households. Walking and bike-riding, followed by public transport, are the cheapest travel options, and improved infrastructure would reduce transport costs for more Australians.
- › **Saving taxpayer dollars:** Increasing the number of people who ride the bus by 20 per cent and switching to EVs by 2035 would save the Australian economy a staggering \$492 billion (ACF 2021). This figure accounts for the health and social costs arising from air pollution, emissions, noise and water pollution.
- › **Local manufacturing:** Our 'rich reserves of lithium and rare earths, strong industrial infrastructure, a highly skilled workforce, powerful training capacity, abundant renewable energy options, and untapped consumer potential' uniquely position Australia to become a sustainable EV making powerhouse (TAI 2022a).
- › **Reducing car traffic and making our cities more liveable:** Making public transport more convenient – such as through increased frequency of service and improving network connectivity – is the most intelligent way to reduce car traffic. Congested streets are dangerous and unpleasant to spend time in. Cutting car traffic opens our streets back up to more people, and makes them places we enjoy spending time in. Reducing time spent

stuck in car traffic also means we can spend more time doing the things we enjoy, such as spending time with loved ones.

WHAT'S REQUIRED TO GET US THERE

- › The Federal Government should consider matching dollar for dollar investments from the states and territories in transitioning bus fleets to zero emissions.
- › While electric buses need to drive on roads, increasing the use of public transport will decrease congestion. The Federal Government could consider diverting some of the considerable road funding that flows to states and territories to directly accelerate the electrification of public transport.
- › The electrification of public transport should be accounted for in projections of future energy demand and planning and rollout of augmented energy networks – particularly in our cities.

FURTHER RESOURCES

- › Climate Council (2022b) Australians want transport options that are better for our hip pockets and climate.
- › Climate Council (2022c) Transport Policy Report.

Net zero buildings



Figure 10: Howard and Libby love their 8.4-star all-electric home in Victoria. Paired with solar, highly energy efficient homes can generate net zero emissions, reducing the amount residents have to pay for electricity (and gas) to live comfortably. Investing in the improvements required to achieve a higher star rating pays a dividend with reduced heating and cooling energy costs over the life of the house.

 **BOX 4: NET ZERO BUILDINGS: WHAT'S NEEDED BY 2030**

Australia's buildings account for around 20 per cent of our emissions (due to consumption of electricity and energy in buildings) (ClimateWorks 2020). Cost-effective solutions to tackle this problem already exist, so this is a logical area to focus on.

Emissions from buildings in Australia must drop to net zero – ideally by 2030. In the building sector, most of the solutions required to achieve zero emissions are mature and commercially competitive, and emerging solutions could further reduce costs.

This is mainly to do with:

- › Smarter design to enhance energy efficiency; and
- › Electrification powered by renewables, particularly heating and hot water services.

Electrifying buildings, and increasing their thermal efficiency, paired with efficient appliances and household solar has the triple benefit of emissions reduction, while also improving the comfort and wellbeing of people who live and work there, and reducing energy bills. The key barrier in the building sector is deployment of solutions at the scale required.

Home energy efficiency has the triple benefit of reducing emissions, making homes more comfortable, and reducing energy bills.

7. Make new buildings net zero, and electrify established ones

The National Construction Code has just been updated with the minimum star rating for new homes to increase from 6 to 7 stars. This is a welcome step. The next update should include a plan for all new buildings to be net zero over a year through a combination of improved thermal efficiency and sufficient rooftop solar. The National Construction Code should also be updated to recommend States and Territories ban all new gas connections. Mandatory solar should not be used as a method to 'offset' the negative impacts of poorer efficiency or the use of gas appliances.

For established buildings, gas appliances (including heaters, hot water systems and cooktops) should be phased out and replaced as soon as possible with gas appliance replacement bans coming into effect from 2025.

WHY?

Improving energy efficiency in the building sector is Australia's most cost-effective greenhouse gas emissions reduction opportunity. Better efficiency reduces growing power demand on the electricity network and will save people money on their power bills. Increasing minimum energy efficiency for new buildings is the most obvious and cost-effective place to start, but given there are 15-20 million established buildings in Australia, retrofitting them to become more energy efficient, and replacing gas appliances with efficient electric ones, is also crucial.

THE BENEFITS

- › **Major savings:** Whilst the initial financial outlay for new net zero buildings is around two per cent higher, this cost is spread over the typical 30-year life of a mortgage, whereas bill savings accrue from day one with close to zero power bills. This means that, overall, new net zero homes would save their occupants money immediately. Electrification would also save households money. Rewiring Australia (2021) found the average Australian household could save more than \$5000 per year by the end of this decade and, collectively, the nation would be saving around \$40 billion per year by 2030 by electrifying everything in the home. The Climate Council (2022d) found an average saving of \$450 per year on heating and cooling costs alone by improving energy efficiency in new homes to 7 Stars.

- › **Halving greenhouse gas emissions:** Energy efficiency opportunities could cut the average energy consumption of buildings by more than one quarter by 2030 and more than half by 2050 at little to no additional cost (ASBEC 2016).
- › **Low costs:** Energy efficiency in buildings is one of the cheapest ways to reduce emissions – especially for new buildings. Simple measures and technologies such as orientation, placement of windows, insulation and sealing add very little to the cost of a building, but can make a big difference to thermal efficiency and cost savings over time.

WHAT'S REQUIRED TO GET US THERE

- › Governments should implement incentive programs and/or strengthen their uptake to help households with the upfront cost of new electric appliances. Low and zero interest loan schemes can be particularly helpful because they address the upfront costs of conversion for households while being more affordable for governments at scale than direct grants. The Climate Council (2022e) has prepared a dedicated guide for governments on 'How concessional financing can help reduce emissions'.
- › A full Regulatory Impact Analysis should be performed to assess the costs and benefits of removing gas in all homes across Australia, including the projected emissions reduction benefits and impacts on retailers.
- › There is a need to ensure sufficient supply of new electric appliances to meet a blanket gas appliance replacement ban, with a focus on supporting Australian manufacturers.
- › In many areas across Australia, households may not be able to change their appliances from gas to efficient electric options without

changes being made to the home's electrical wiring, meter and infrastructure. These are the responsibility of Distribution Network Service Providers. Consideration needs to be given to electricity distribution companies coordinating these upgrades across larger areas, rather than individual homes. The National Electricity Rules should be amended to make the process and fees for such upgrades affordable and consistent.

- › There are also costs involved in removing gas connection, which are not consistent across gas distributors and can sometimes be exorbitant. The National Gas Rules should be amended to make disconnection services and fees affordable, transparent and consistent.

FURTHER RESOURCES

- › Rewiring Australia (2021) Castles and Cars Savings in the Suburbs through Electrifying Everything.
- › Climate Council (2022d) Tents to Castles: Building Energy Efficient, Cost-Saving Aussie Homes.
- › Climate Council (2022e) How concessional financing can help reduce emissions.

Industrial decarbonisation



Figure 11: The industrial sector which includes mining, manufacturing and construction, will be one of the most challenging to decarbonise. However, the global race to net zero also presents new opportunities for Australia, including increased demand for Australia's critical minerals – including lithium, cobalt, and rare earths.

BOX 5: INDUSTRIAL DECARBONISATION: WHAT'S NEEDED BY 2030

Industry is responsible for almost half of Australia's emissions when electricity use is included. When electricity use is excluded, this number drops to around 34 per cent (DCCEEW 2020). The industry sector includes mining, manufacturing and construction, which account for around 60, 30 and 10 per cent of industry-related emissions respectively.

Around half of industry-related emissions come from electricity use or direct fuel combustion (for example to power process heating), whilst just under half come from the conversion of raw materials into industrial products such as cement, iron and steel (called industrial process emissions) and emissions from losses, leaks, venting and flaring during the process of coal and gas extraction and processing (called fugitive emissions) (ClimateWorks 2020).

Sub-sectors responsible for the most industry-related emissions include metals manufacturing, gas extraction and Liquefied Natural Gas production, coal mining and chemicals manufacturing. In mining, most emissions (77 per cent) come from coal, oil and gas extraction. In manufacturing, 43 per cent of emissions come from metals manufacturing, with chemicals manufacturing (e.g. production of ammonia and plastics) accounting for 21 per cent, and non-metallic mineral product manufacturing accounting for 17 per cent (this includes cement, ceramics, glass and lime products) (DCCEEW 2020).

Opportunities to reduce emissions within industry are somewhat less mature than in other sectors, making industry one of the more challenging sectors to decarbonise. Production processes are highly diverse, and solutions differ between sub-sectors.

The global race to net zero will mean that demand for thermal coal and gas will plummet. Currently Australia is the world's second largest

thermal coal exporter, and equal largest exporter of gas – and these industries account for a large proportion of Australia's industry-related emissions (Australian Government 2022). The International Energy Agency has made it clear that for the world to reach net zero by 2050, there must be no new oil and gas fields, coal mines or mine extensions approved for development from 2021 (IEA 2021). Coal, oil and gas extraction needs to be phased out as a matter of urgency.

At the same time, the transition to net zero presents new opportunities for the mining industry in Australia. Skyrocketing demand for batteries, electric vehicles, and renewable energy technologies in the race to net zero will drive increased demand for Australia's critical minerals – including lithium, cobalt, and rare earths. Recent estimates suggest these minerals will globally be worth A\$17.6 trillion over the next two decades (IMF 2021).

Powering Australia's economy with low-cost and abundant renewable energy will also unlock significant opportunities for Australia to become one of the world's biggest exporters of other decarbonised commodities, including renewable hydrogen. The combination of renewable energy and electrification offer the possibility of full decarbonisation in industries such as aluminium and steel manufacturing, as well as light manufacturing.

Growing energy demand in countries such as Indonesia and Singapore also create new opportunities for Australia to export renewable electricity directly via high-voltage direct-current cables to countries such as Singapore and Indonesia. If we do not move quickly to both decarbonise our domestic economy and invest in research and development into clean export-facing industries, we may lose this once-in-a-lifetime opportunity to secure long-term competitive advantage.

8. Ensure major polluters do their fair share

The Federal Government intends to reform the Safeguard Mechanism so that it drives real emissions reductions from Australia's largest industrial emitters (ALP 2021). Getting the settings right, and fixing this broken scheme, will help clean up and future-proof industries that are capable of sustaining Australian jobs for generations to come.

WHY?

Reducing emissions from Australia's most polluting industries is fundamental to achieving our emissions reductions targets and ensuring Australia plays its part in tackling the global climate crisis.

The Safeguard Mechanism – intended to manage emissions from 215 of Australia's most polluting industrial facilities – was a key feature of the Liberal-National government's climate policy. These facilities collectively emit 140 million tonnes of CO₂e per year – or just over a quarter of Australia's domestic emissions (Clean Energy Regulator 2022).

A well-designed Safeguard Mechanism can ensure these industries do their fair share in reducing Australia's emissions. This will require significant design changes, along with good will and increased ambition from the big industrial polluters covered by the scheme. Challenges include: ensuring the highest levels of integrity and transparency in the scheme; incentivising industries to take maximum advantage of readily available solutions; ensuring the scheme drives long-term planning and investment; and weeding out perverse incentives or loopholes that discourage genuine emissions reduction.

THE BENEFITS

- › **Cutting pollution rapidly:** While the final outcome will depend on decisions that are being made by the government today, pre-election modelling of Labor's plan to tighten the Safeguard Mechanism showed that it was capable of delivering 213 million tonnes of greenhouse gas abatement this decade (Reputex 2022).
- › **New jobs:** That same modelling showed that investing in industrial abatement is estimated to create 1600 new jobs by 2030, with five out of six (83 per cent) of those jobs in regional areas.
- › **Long-term investment signals:** Properly calibrated, the Safeguard Mechanism could create a long-term signal for Australia's largest emitters and set them on a path away from fossil fuels that can future-proof Australian industry and ensure the jobs it provides are protected for decades to come.
- › The Safeguard Mechanism must not put a ceiling on ambition through perverse incentives or regressive subsidies. Rather, it must encourage facilities to achieve the greatest possible emissions reductions, both within the current reporting period and over the longer term.
- › Consideration should be given to introducing a mechanism similar to the former *Energy Efficiency Opportunities Act*. This program compelled major energy users to audit their operations for opportunities to reduce demand. It would deliver outsized benefits if paired with a government-funded clearing house for information about emissions reduction opportunities and grant funding for facilities covered by the Safeguard Mechanism.

WHAT'S REQUIRED TO GET US THERE

- › Facilities covered by the Safeguard Mechanism should be required to reduce their emissions at a rate that is, at a minimum, in line with national economy-wide emissions reduction targets. Anything less would mean they aren't pulling their weight; and expecting other industries and sections of the economy to work harder.
- › Integrity, accountability and transparency must be fundamental to the design of the Safeguard Mechanism. Specifically, in order to drive genuine emissions reductions, there should be a tight limit on the number of carbon credits that a facility can purchase to meet its obligations. In other words, the scheme should seek to achieve absolute emissions reduction rather than simply facilitating large-scale carbon offsetting.

FURTHER RESOURCES

- › Australian Conservation Foundation (2022) Emissions Exposé: Australia's biggest polluters are emitting more than approved and getting away with it.
- › Reputex Energy (2022) Potential Futures For Australia's Safeguard Mechanism.

Reassess finance to set us up for net zero success



Figure 12: The Federal Government continues to support fossil fuel projects and exploration, recently approving the Scarborough-Pluto gas project in Western Australia which will emit almost 1.4 billion tonnes of greenhouse gases over its lifetime (three times Australia's current annual emissions) (The Conversation 2022). Reaching net zero by 2035 means no public or private funding to coal, oil and gas projects.

9. End public funding and finance for coal, gas and oil

To address the climate crisis and accelerate the transition to a clean energy economy, the Federal government must stop subsidising fossil fuels. There should be no new commitments of public money for the extraction or consumption of fossil fuels or associated infrastructure. Phasing out taxpayer support for fossil fuels will require a review of existing fossil fuel subsidies before the 2022-23 federal budget. Existing subsidies should be phased out entirely in coming budgets. The Morrison Government's grants and subsidies to new fossil fuel projects should be redirected to zero emissions projects and infrastructure.

WHY?

The International Energy Agency (IEA) is clear that there is no place for new fossil fuel projects anywhere if the world is to reach net zero emissions by mid century (IEA 2021). The IEA also says government subsidies for fossil fuels need to be eliminated as soon as possible (IEA 2021, pg.139). The UN Secretary General Antonio Guterres states countries need to "end all new fossil fuel exploration and production, and shift fossil fuel subsidies into renewable energy" (UN Secretary General 2021).

Australia committed to "ending inefficient fossil fuel subsidies" at the G20; in regional declarations with Pacific nations; and in the Glasgow Climate Pact. However, in practice, Australia is wasting more public money on fossil fuels. In recent years Australian fossil fuel subsidies for both production and consumption have increased. In 2021-22 they amounted to \$11.6 billion – more than 50 times the annual budget of the National Recovery and Resilience Agency, which supports communities impacted by worsening climate disasters (TAI 2022b).⁷ Budget forward estimates suggest Australian state and federal governments are planning to waste \$55.3 billion in fossil fuel subsidies over the next four years (TAI 2022b). For comparison, this is more than four times Victoria's annual healthcare budget.

7. This includes subsidies for both fossil fuel production and consumption. The single largest public support for fossil fuels is the Fuel Tax Credit Scheme, a \$9 billion annual subsidy which is used mainly by Australia's mining industry. This subsidy incentivises the use of fossil fuels and disincentivises improvements in energy efficiency and electrification (e.g. switching to a fleet of electric equipment, run on zero emissions electricity). It represents one of the federal government's top 20 spending programs and is bigger than the government's spending on the army (\$8 billion per annum) and twice the foreign aid budget (\$4 billion per annum) (CEF 2022).

The International Monetary Fund (IMF) estimates Australian fossil fuel subsidies are even higher. The IMF estimates – which also take into account the health, climate and other pollution costs of fossil fuels – suggest Australian subsidies to fossil fuels are actually worth around AU\$65 billion (IMF 2022).

The Morrison Government provided many grants and subsidies to fossil fuel projects as part of its so-called “gas-fired recovery” from the COVID19 pandemic. These included more than \$500 million for new gas infrastructure and exploration. The new federal Climate Change and Energy Minister Chris Bowen says the Federal Government will not provide public finance for new coal and gas fields (The Guardian 2022). This should include revisiting taxpayer dollars allocated by the Morrison government to accelerate gas production in the Northern Territory.

THE BENEFITS

- › **Saving money and reducing emissions:** Removing fossil fuel subsidies would have a range of important benefits, including helping balance government budgets, cutting emissions and associated health savings, and creating more efficient energy markets (IEA 2022).
- › **Reducing deficits:** The Federal government is dealing with significant budget deficits, with a \$71.9 billion deficit estimated for the financial year 2021/22 (CEF 2022). Reducing taxpayer support for fossil fuel production and consumption would improve the budget bottom line, allowing money to be redirected to other priorities – including the clean energy transition and dealing with the impacts of the climate crisis.

- › **More money for energy transformation:** Phasing out fuel tax credits would make more money available to support the clean energy transition, including the \$20 billion the Federal Government plans to spend on electricity transmission infrastructure this decade to support the shift from coal-fired power to renewables.

WHAT'S REQUIRED TO GET US THERE

- › As part of its commitment to end public finance for new coal and gas fields, the new Federal Government must revisit hundreds of millions of dollars in taxpayer funds that have been allocated to accelerate gas production in the Northern Territory.

FURTHER RESOURCES

- › Clean Energy Finance (2022) Windfall profits: time to fix loopholes and subsidies to serve Australians better.
- › Market Forces (2022) Direct contributions and handouts to the fossil fuel industry.
- › The Australia Institute (2022b) Fossil fuel subsidies in Australia Federal and state government assistance to fossil fuel producers and major users in 2021-22.

10. Develop a comprehensive climate and energy investment plan

Achieving deep emissions reductions while maximising economic opportunities for Australia will require well-targeted investments in the research, development and rollout of climate solutions this decade.

The Federal Government should undertake an evaluation of existing climate and energy programs and initiatives, including identifying where support is still needed to get solutions off the ground. The overall spend should be captured in a dedicated climate budget statement, with the first one to be included in the 2023-24 Federal Budget.

Ultimately, all public spending must be aligned with a goal of rapidly reducing emissions across the economy this decade and beyond. This also requires guidelines and procedures for ensuring decision making across all departments is maximising the potential for emissions reductions.

WHY?

Currently there are pools of funding available to support the uptake of specific technologies, such as a \$250 million program to boost Australia's capabilities in Carbon Capture Utilisation and Storage (CCUS), a \$300 million hydrogen fund under the Clean Energy Finance Corporation, and various programs under the Australian Renewable Energy Agency. Many programs are the legacy of previous governments and may deliver limited bang for buck when it comes to real emissions reductions or, worse, promote false solutions.

Federal climate and energy spending must be well-coordinated, efficient, transparent and guided by an overall investment strategy that aims for the maximum possible emissions reductions this decade and beyond.

All public spending must be aligned with a goal of rapidly reducing emissions across the economy this decade.

THE BENEFITS

- › **Coordination and efficiency:** A comprehensive climate and energy investment plan will ensure greater coordination and efficiency in Federal Government climate and energy spending. It will ensure we are backing the right technologies and that we are maximising the opportunities for emissions reductions, jobs and economic development afforded by Australia's vast untapped potential for clean energy.
- › **Greater transparency and public trust:** The Federal Government has been clear in wanting to increase the integrity and transparency of politics in Australia, and in turn regain the trust of the public. Publishing public investments in climate and energy initiatives in a clear, transparent and timely manner will help restore this trust, and ultimately improve outcomes.
- › **Removing inefficiencies and false solutions:** Programs that serve mainly to prolong the life of fossil fuels – such as many investments in Carbon Capture and Storage (CCS) – should be immediately phased out.
- › As part of an overall climate and energy strategy, the investment plan should focus on identifying gaps and stepping in wherever additional support is needed to accelerate the development and rollout of solutions. This may be funding for research and development of nascent technologies, or putting in place the infrastructure to enable their rollout, including through the continued development of Renewable Energy Zones.
- › **Transparency and accountability:** Spending must be subject to regular evaluation. Reporting should include a detailed annual climate budget statement, as part of the federal budget papers.

WHAT'S REQUIRED TO GET US THERE

- › **Backing the right technologies:** Achieving the maximum emissions reductions at lowest cost and with maximum benefits to the community means understanding the potential and limitations of different technologies and what measures may be required to get them off the ground. Investments must be guided by a realistic assessment of the potential emissions reductions and economic benefits – including where and how many jobs can be created.
- › The investment plan must be tied to a comprehensive and integrated climate and energy strategy, with each new investment or program having a clear role in helping drive Australia's energy transformation or reducing emissions.

FURTHER RESOURCES

- › Commonwealth Secretariat (2022) Why a Climate Financing Framework is critical for Nationally Determined Contribution action.
- › Grattan Institute (2022) Explainer: How climate change affects the federal budget.

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