

Annual Progress Report

Summary for Policymakers

2024



The full report is published on the [Climate Change Authority's website](#)



Background

The Climate Change Authority is Australia's expert advisory agency providing independent, evidence-based advice on climate change policy.

Under the Climate Change Act 2022, the authority must provide the Minister for Climate Change and Energy with annual advice on progress towards Australia's emissions reduction targets. This informs the development of an annual climate change statement to Parliament made by the minister.

This is the authority's third Annual Progress Report, assessing Australia's progress in the 12 months since our last report.

The report makes 10 recommendations for accelerating Australia's progress towards a prosperous and resilient net zero economy. The recommendations in this report, together with those made in the 2024 Sector Pathways Review and other recent work, aim to set Australia up to drive deep and sustained reductions in emissions now and in the decades to come.



National emissions are falling, but progress must accelerate

New policies have improved Australia's prospects of cutting emissions in line with the national 2030 target. But only the delivery of their promised outcomes will get us there. Deployment of renewable electricity must accelerate, and emissions need to fall faster.

Key points

Emissions are falling but not yet at the rate required to meet Australia's 2030 emissions reduction target

To reach its 2030 target, Australia's greenhouse gas emissions must fall by an average of 15 Mt CO₂-e each year, starting now. Australia's emissions declined by 3 Mt CO₂-e over 2023-24 and have declined by an average of 12 Mt CO₂-e a year since 2006.

Australia's strong policy progress continued in 2024

Policy developments include the expansion of the Capacity Investment Scheme (CIS) for renewable generation and energy storage, the commencement of the reforms to the Safeguard Mechanism to reduce emissions at Australia's largest industrial facilities, and the introduction of the New Vehicle Efficiency Standard (NVES) to reduce motor vehicle emissions. The impacts of these policies will take time to flow through to Australia's reported emissions.

Accelerating the roll out of renewable energy infrastructure needs to be a top priority

The electricity sector can do most of the heavy lifting on cutting emissions to 2030 at least cost, unlock more emissions reductions in sectors like transport and industry, and get Australia ready for the end-of-life exit of ageing coal generators.

Australia is currently deploying renewable energy infrastructure at about half the annual rate needed to reach Australia's 2030 target. The authority has focused most of this year's recommendations in the *Annual Progress Report* on addressing barriers to see more renewables deployed sooner.

In 2024, Australia made progress across a number of leading indicators of emissions

Electric vehicle sales, electric vehicle charging station numbers and imports of heat pumps all increased, while fossil fuel combustion in the manufacturing sector saw a modest decrease. Early analysis based on preliminary data also suggests emissions have declined for heavy industrial facilities covered by the Safeguard Mechanism, following the implementation of reforms in 2023.

Revisions to the emissions inventory bring Australia closer to its 2030 target, but should not be mistaken for signs the transformations required to decarbonise each sector of the economy have commenced

The 2024 refinements in emissions accounting in the land and agriculture, and electricity and energy sectors resulted in cumulative emissions from 2020 to 2023 being estimated to be 79 Mt CO₂-e lower than was reported in 2023.

Tracking new policies can signal more emissions reductions to come

Regular reporting and tracking of policies helps to monitor government progress on climate action and acts as an early indicator of policy effectiveness.

The authority's Climate Policy Tracker is a tool for monitoring Australian climate policies. It allows the authority to track policy progress before outcomes are visible in emissions inventories or policies have been completely implemented. It also helps to identify policy gaps and policies relevant to specific issues.

In 2024, the authority has expanded the scope of the Climate Policy Tracker to include state and territory policies, and an expanded suite of Australian Government policies.

The 2024 Climate Policy Tracker can be accessed on the authority's website at: <https://www.climatechangeauthority.gov.au/climatepolicy-tracker>



Emissions need to start coming down across every sector of the Australian economy

Cutting emissions by 43% over 2005 levels by 2030 in line with Australia's national target will mean a smoother transition to net zero emissions by 2050. Currently, Australia's emissions are 28% below the 2005 level. This fall has been driven almost entirely by the land sector, as a result of reductions in land clearing and improved vegetation and soil management practices. Emissions have been declining in the electricity and energy sector since 2009, with strong growth in the share of renewables in electricity generation. All other sectors combined are 13% above 2005 levels.

Table 1: Sector emissions in 2023 and 2024 and the annual change in emissions

Sector	Emissions in FY 2023 (Mt CO ₂ -e)	Emissions in FY 2024 (Mt CO ₂ -e)	Change in emissions (%), FY 2023 to FY 2024	Average annual change in emissions from FY 2006 to FY 2024 (Mt CO ₂ -e)
Electricity and energy	146	145	0%	-3
Transport	98	100	2%	1
Industry and waste	65	62	-4%	-1
Agriculture and land	5	4	-14%	-11
Resources	102	102	0%	2
Built environment	28	27	-3%	0
Australia-wide (net)	444	441	-1%	-12

Australia has emitted 40% of its emissions budget to 2030, with five years to go

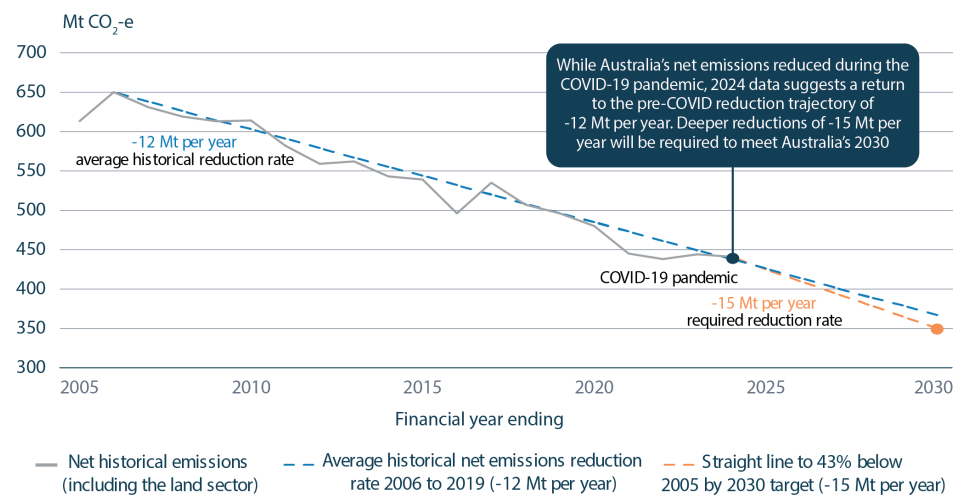
Since peaking in 2006, Australia's emissions have declined by 12 Mt CO₂-e per year on average. Emissions declined rapidly when COVID hit, largely due to the drop in transport emissions, and have plateaued over the 3 years since.

In 2024, Australia's emissions were broadly in line with the level they might have been had the COVID pandemic not occurred. If the post-COVID plateau continues, even faster decarbonisation will be needed in future years to get on track. Returning to Australia's pre-COVID decarbonisation rate would be an acceleration on the last 3 years. However, this would not quite be fast enough to achieve the 2030 target.

Emissions must fall by 15 Mt per year on average to reach Australia's 2030 target of 43 per cent below the 2005 level. A significant effort across every sector to reduce emissions as much as possible will give Australia the best chance of achieving the 2030 target.

Alongside the 43% emissions reduction target, Australia has a cumulative emissions budget for the period 2021 through to 2030. Following 2024 revisions to Australia's historical emissions estimates, Australia's implied emissions budget is 4,359 Mt CO₂-e. In the period to June 2024 Australia had emitted 1,767 Mt CO₂-e or 41% of its emissions budget, while being 40% through the budget period.

Figure 1: Progress to Australia's 2030 emissions reduction target



Leading indicators point to more progress to come; further policy effort can reinforce these trends

The authority monitors a series of leading indicators which help identify likely emissions trends in the years to come. These indicators are not exhaustive, and the authority regularly considers other opportunities to understand how sectors of the Australian economy are decarbonising, beyond official projections.

Transport

In the 2023-24 financial year, 9.5% of all new vehicles imported to Australia were battery electric or plug in hybrid electric vehicles (133,843 vehicles). This is up from 7.1% in 2022-23. To support Australia achieving its emissions reduction targets, the year-on-year growth rate of BEV/PHEV imports needs to remain high.

The number of public fast charging locations has tripled, from 317 in December 2021 to 1059 in June 2024. However, the ratio of registered BEVs to public charging locations continues to rise. This trend suggests that growth of the fast-charging network is not keeping pace with growth in the BEV fleet, which is likely to limit EV uptake if not addressed.

Industry and waste

There has been a modest decline in reported fossil fuel combustion from the manufacturing sector from 2021 to 2022. For the same year, emissions from the waste sector rose by 0.4 Mt CO₂-e with the reported proportion of methane at landfills captured and combusted decreasing marginally from 45% in 2021 to 43% in 2022. Reforms to the Safeguard Mechanism which commenced in 2023 are expected to accelerate emissions reduction from this sector in the years to come.

Resources

Approximately 84% of emissions from the resources sector are covered by the reformed Safeguard Mechanism. The Safeguard reforms are expected to drive on-site emissions reduction measures at covered facilities and demand for Australian Carbon Credit. Progress indicators for the resources sector include ACCU holdings by Safeguard Facilities and gross methane emissions reported under the Safeguard Mechanism use.

The authority's initial analysis shows that in 2023–24 emissions at Safeguard facilities were 135.8 Mt CO₂-e, down 2.9 Mt CO₂-e (2.1%) from 2022–23.

Built environment

Heat pump imports continue to increase with a 14% rise between 2022-23 and 2023-24. This likely reflects a range of financial incentive schemes across the country and consumer choice and demand for more energy efficient appliances.

Agriculture

According to the latest estimates, the Australian beef cattle herd was 29.9 million head of cattle in 2023-24. The Australian Bureau of Agricultural and Resource Economics and Sciences projects the cattle herd will reduce by 4% in 2024-25 due to an increase in processing rates and export volumes.

Spotlight: Decarbonising electricity

Rapid decarbonisation and expansion of the electricity and energy sector is the key to meeting Australia's economy-wide emissions reduction targets. It must be the top priority now

Decarbonising Australia's electricity supply as soon as possible will address Australia's largest source of emissions - enabling further emissions reductions with economy-wide electrification.

Generating more electricity than ever before while transitioning to renewables that are connected by transmission and firmed with batteries, pumped hydro, gas peaking generators and potentially hydrogen in the longer term, requires a major national effort.

Sequencing, integrating and optimising the deployment of these technologies, while ensuring reliability and security of supply, is crucial for the successful and timely transformation of Australia's electricity system.

Several policies have been implemented to support the Australian Government's 82% renewable electricity target. These include the expanded Capacity Investment Scheme (CIS), to accelerate the roll-out of renewable generation and energy storage capacity, and the Rewiring the Nation program to support the expansion of the transmission network. There are also several state and territory government initiatives underway to support the national decarbonisation of the sector (see the authority's Climate Policy Tracker).

Around 90% of coal-fired generators in the NEM are expected to cease operations by 2035. To maintain system reliability sufficient renewable generation capacity, together with the requisite network and energy storage infrastructure, must be in place as coal plants exit the system.

The authority considers that the government needs to pursue additional policy measures to ensure its 82% renewable electricity target is met.

When accounting for projects in the pipeline that are also eligible for the CIS, a gap of approximately 8 GW is projected to remain to reach the additional capacity necessary to deliver on the renewables target by 2030.

That is why this year's Annual Progress Report recommends a major focus on removing barriers to the deployment of clean energy infrastructure - to strengthen and accelerate the forward pipeline of large-scale, commercial and industrial, and community-scale generation and storage.

This includes providing firmer and longer-term foundations for the Capacity Investment Scheme, seizing more of the unrealised potential of commercial and industrial distributed energy resources, and accelerating the delivery of essential system security services. Increasing the uptake of distributed rooftop solar and battery storage is an untapped opportunity to bring more clean electricity into the system quickly, with less need for new enabling infrastructure.

More effective coordination of grid renewal activities is also a major opportunity. The authority considers the current level of coordination is not yet sufficient to enable targets for renewables and emissions to be met.



Spotlight: Improving energy efficiency

As Australia accelerates progress towards a renewable energy grid, energy efficiency continues to be a major opportunity to balance rising demand from households, businesses and industry.

Energy efficiency is a powerful tool for reducing emissions, reducing energy consumption and improving wellbeing. Energy efficiency measures not only provide energy bill relief by reducing the need for heating and cooling but can also improve resilience to climate-related hazards. This is because these measures can reduce the energy needed to maintain comfortable indoor temperatures across the year, including during periods of extreme heat.

The technologies and actions required to electrify buildings and improve energy performance are demonstrated and commercially available. Opportunities include installing more energy-efficient electric appliances, improving building thermal efficiency, managing energy demand, optimising the use of existing appliances and behaviour changes or automation to facilitate load shifting.

The Australian Government and many states and territories have implemented policies for improving energy performance outcomes. However, Australia needs to drive economy-wide improvements. In this year's Annual Progress Report the authority has recommended uplifting national building energy and driving the acceleration of building retrofits through improved information, regulated standards and further national policy support.



Spotlight: Driving down industrial emissions

Reforms to the Safeguard Mechanism are set to play an important role in dealing with emissions from Australian heavy industry. Their delivery needs to be closely monitored.

The Safeguard Mechanism sets legislated limits on scope 1 emissions¹ for each covered facility. In 2023, the government passed reforms to progressively reduce these limits by 4.9% a year.

As part of these reforms, the authority is required to advise the government on whether gross and net emissions from covered facilities are declining consistently with Safeguard outcomes. If necessary, the authority will provide advice on amendments to the Safeguard Rules needed to achieve the legislate.

Preliminary data for 2023–24 shows covered emissions were 135.8 Mt CO₂-e. This is a reduction of 2.9 Mt CO₂-e compared to 2022–23 levels (Figure SGM.1).

A total of 153 facilities had reported emissions higher than their baselines with total exceedances above facilities' baselines estimated to be 10.7 Mt CO₂-e in 2023-24. Preliminary data shows Safeguard facilities could be eligible to apply for an estimated 9.2 million SMCs² in 2023-24 (noting the final number is subject to possible baseline variations due to a change to a higher order method to calculate emissions).

The authority's assessment of net Safeguard emissions from 2020-21 to 2029-30 is that they are declining consistently with the Safeguard outcomes. The authority has assessed net Safeguard emissions against legislated safeguard outcomes, including annual net Safeguard emissions declining to no more than 100 Mt CO₂-e by 2030 and net Safeguard emissions over the decade to 2030 not exceeding 1,233 Mt CO₂-e. Preliminary data shows new and expanded facilities accounted for 1.0 Mt CO₂-e in 2023–24. Most of these facilities are in the coal and gas sectors.

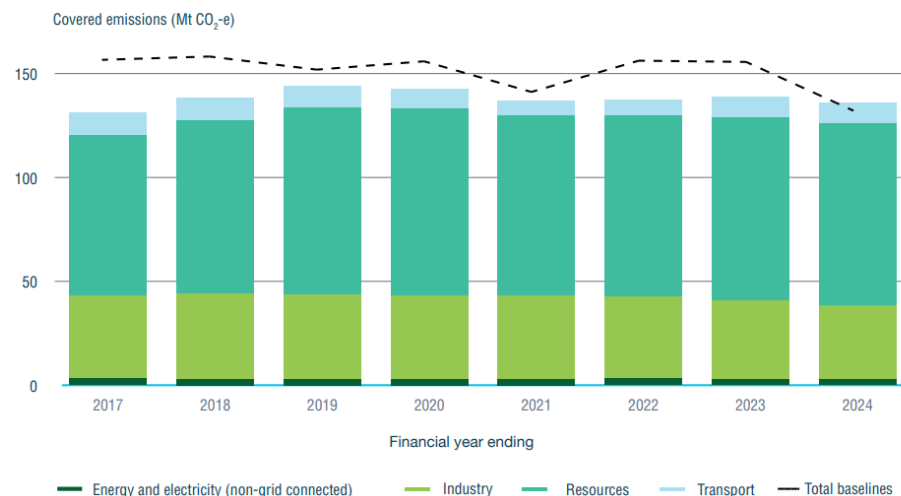
In making this assessment, the authority notes uncertainties associated with the reformed Safeguard Mechanism having only been in place for one full year, final information on the outcomes of the scheme in 2023–24 not yet being available, and the authority's assessment relying in part on projections of outcomes to 2030.

1. The release of greenhouse gases into the atmosphere as a direct result of activities occurring within a responsible entity's control (or geographic boundary).
2. SMC – Safeguard Mechanism Credit – a unit representing one tonne of carbon dioxide equivalent (tCO₂-e) emissions below a facility's baseline. SMCs are tradeable credits and can be sold to other Safeguard facilities or surrendered to stay within baseline for a facility

Australia needs to closely monitor progress on implementation of this key national emissions reduction policy to ensure it stays on track. In this year's Annual Progress Report the authority has recommended Safeguard facilities be required to report rolling 5-year compliance strategies on the expected annual weight of effort between on-site reductions and carbon credit use, and the Clean Energy Regulator to publish this data aggregated at the industry level.

The authority recommends improving visibility of facilities' intended balance of effort between deploying technologies to reduce emissions and using carbon credits. This would shed more light, sooner, on whether and how the Safeguard Mechanism reforms are driving industrial transformation.

Figure 2: Covered emissions by sector reported under the Safeguard Mechanism, 2017-2024



Spotlight: Adaptation and resilience

The government has made progress on adaptation through the national climate risk assessment and development of a new national adaptation plan.

Climate change is impacting Australian people, businesses and our natural environment, and the impacts are likely to intensify. Urgent action is needed to limit impacts and to protect Australian communities. Rapid emissions reductions and innovative adaptation measures are needed for Australia to realise a prosperous and resilient future.

The Australian Government is progressing key climate adaptation policies, including the National Climate Risk Assessment, the National Adaptation Plan and the response to the independent review of the Australian Climate Service.

These are vital areas of work. Australia must strive to cut emissions now as far and as fast as possible, while taking action to adapt to the climate change impacts communities and our natural environment are already experiencing, and the unavoidable changes to come.

In this year's Annual Progress Report the authority has recommended it be tasked with monitoring and evaluating the national adaptation plan once in place. This should include regular reviews of the National Adaptation Plan and the National Climate Risk Assessment.



Recommendations

Recommendation 1

Strengthen, broaden, lengthen and embed the Capacity Investment Scheme.

Recommendation 2

Enable the rapid and large-scale deployment of combined synchronous condenser functionality with back-up generation capability, to provide the system security and reliability services needed for the accelerated deployment of renewables and timely coal power station closures through analysis and tenders run by the Australian Energy Market Operator.

Recommendation 3

Speed up connection approval processes for large-scale generators in the National Electricity Market, while enhancing the transparency of those processes.

Recommendation 4

Make full use of the potential contribution of electricity distribution networks, and commercial and industrial customers' premises, to host renewable electricity generation and storage.

Recommendation 5

Endorse the provision of further advice on recommendations 1-4.

Recommendation 6

Through the National Cabinet, task relevant ministers to work together to overcome barriers to the energy transition.

Recommendation 7

The Minister appoint an Energy Transition Coordinator to drive and monitor the delivery of economically efficient, reliable and low emissions electricity grids.

Recommendation 8

Uplift national building energy efficiency and drive the acceleration of building retrofits through improved information, regulated standards and further national policy support.

Recommendation 9

Require Safeguard facilities to report rolling 5-year compliance strategies on the expected annual weight of effort between on-site reductions and carbon credit use. The Clean Energy Regulator should publish this data aggregated to an appropriate level.

Recommendation 10

Legislate and resource the Climate Change Authority to implement the monitoring and evaluation framework for the National Adaptation Plan.

Looking ahead: Australia's 2035 target

The authority is developing advice on the 2035 emissions reduction targets for Australia's next Nationally Determined Contribution, as requested by the Minister for Climate Change and Energy.

Australia is responding to one of the most significant economic shifts since the Industrial Revolution, in a geopolitical context characterised by heightened global tensions, shifting alliances and complex economic and security challenges. Nations are racing to dominate green technologies and compete for resources such as rare earth minerals critical for those technologies. Climate change is increasingly understood to be a security threat, exacerbating issues like water scarcity, food insecurity and forced migration. It is also directly impacting Australians' costs of living through rising prices for insurance as the risks of climate-fueled extreme weather events, and production and distribution systems for essentials like food are disrupted more often.

It is in this dynamic, interconnected and constantly changing landscape that nations are developing their next emissions reduction targets under the Paris Agreement, due in 2025. The authority will provide advice on the 2035 greenhouse gas emissions reduction targets it considers should be included in Australia's next Nationally Determined Contribution to the Paris Agreement, taking account of the geopolitical context, the latest science and Australia's unique national circumstances. Our recommendations in the 2024 Annual Progress Report, together with those made in the Sector Pathways Review and other recent work, aim to set Australia up to drive deep and sustained reductions in emissions well beyond 2030.

Contact us

Visit the [authority's website](#) to read the Annual Progress Report and Sector Pathways Review.

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