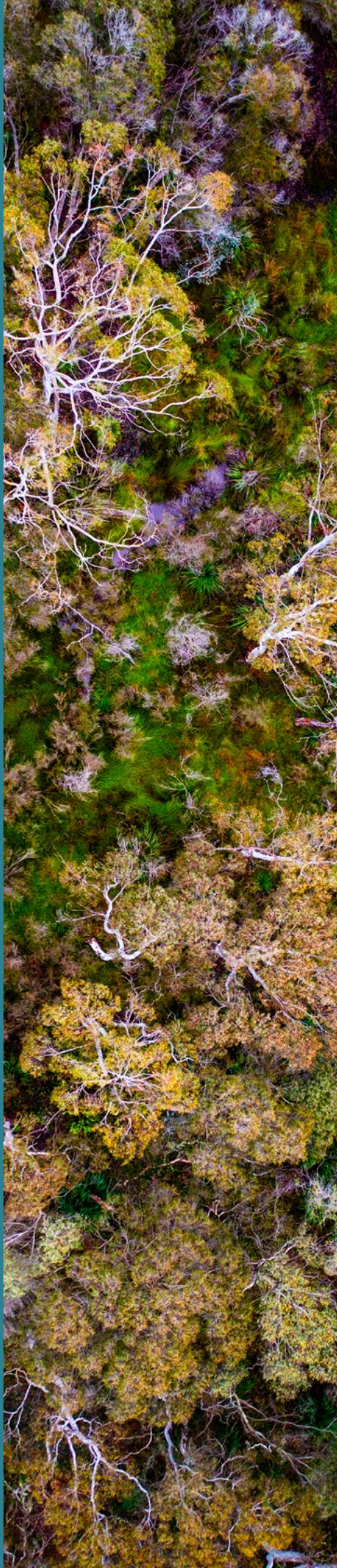
2026 Annual Progress Report

Net Zero Commission



Acknowledgment of Country

The Net Zero Commission acknowledges the traditional custodians of the lands and waters upon which we live and work throughout NSW.

We pay respect to Elders, past and present, acknowledging the diversity of First Nations peoples across NSW, and we recognise their ongoing connection to land, waters, biodiversity and culture.

We recognise the practice of intergenerational care for Country and its relevance to our work. The Net Zero Commission values Aboriginal knowledge of caring for Country. We seek to listen, learn and build strong partnerships with First Nations peoples across NSW. Cultural approaches to caring for Country have existed for millennia and can teach us ways of adapting to our changing environment.

Sun puddles hot on Country by Suzy Evans

Artist Statement:

My work evokes both contemporary and traditional symbols to foster an understanding of the sun's power. The sun I see as female figures in the centre of the work. Summer heat in Garah NSW, manifests like puddles, puddles of sun. Sun on Country, sun puddles.

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Chair's foreword

I am pleased to submit the Net Zero Commission's second Annual Progress Report to the Minister for Climate Change, in accordance with the *Climate Change (Net Zero Future) Act 2023* (NSW). This report provides an independent assessment of NSW's progress towards its legislated emissions reduction targets and adaptation objective.

The report shows that NSW has made meaningful progress in reducing emissions. However, to achieve the state's legislated 2030 and 2035 targets, the pace of decarbonisation must further increase.

The legislated emissions targets and adaptation objective can be more consistently reflected in government decision-making, including planning decisions that will influence the state's emissions trajectory and resilience to climate change for decades to come.

Accelerating the transition of the electricity sector is critical, both to replace coal-fired power generation and to enable the wider electrification of transport, buildings and industry. Many low-emissions technologies are available today and their uptake must be accelerated across the economy.

The report also highlights methane as a significant and under-addressed source of emissions, with substantial opportunities to reduce emissions from coal mines, agriculture and waste.

At the same time, NSW must strengthen its preparation for a changing climate. Communities across the state are already experiencing the impacts of extreme weather, heat stress and other climate-related risks. While foundational work has commenced, adaptation efforts are not keeping pace with the scale of the challenge. Stronger governance, clearer roles and accountability, timely delivery of commitments, and increased long-term investment are needed to accelerate adaptation action and build resilience across communities, infrastructure, ecosystems and the economy.

A recurring theme throughout this report is the importance of drawing on the knowledge and leadership of First Nations peoples, local communities and councils. Effective climate action depends on understanding local circumstances, engaging affected communities and embedding climate considerations into long-term decision-making. This applies equally to reducing emissions and building resilience to climate change.

Engagement is central to the Commission's work. In 2025, we undertook our first statewide engagement, receiving more than 200 submissions and meeting with stakeholders, including in the Hunter, Illawarra and Northern Rivers regions. These conversations strengthened our understanding of the opportunities and challenges facing communities and informed the Commission's advice and recommendations. We will continue to engage with stakeholders and visit regions to hear directly from communities to deepen our knowledge and understanding.

The Commission was established to provide transparent oversight, independent advice and robust analysis as NSW navigates this transition. Since our 2024 Annual Report our advice to the NSW Government has included:

- integrating climate considerations into the NSW planning system
- priorities for the Government's Net Zero Plan to 2035
- principles that should apply when considering approvals for new data centres, and
- our first two spotlight reports, outlining the opportunities for coal mining to reduce emissions in NSW and better preparing the state for heat stress.

I thank all those who engaged with the Commission during the reporting period through written submissions, engagements and briefings. Your advice and input has helped shape our work.

I am grateful to my fellow Commissioners and to the staff of the Commission, who have dedicated their expertise and efforts to the preparation of this report. I also thank the Parliamentarians who are members of the Joint Standing Committee on Net Zero Future who take an active and appreciated interest in our work.

In the coming years we will continue to champion rigorous, independent analysis and advice to support informed and accountable climate decision-making and to help NSW achieve both its emissions reduction targets and adaptation objective.

Nick Rowley

Executive summary

The NSW Net Zero Commission (the Commission) was established under the *Climate Change (Net Zero Future) Act 2023* (NSW) (Climate Change Act) to provide expert advice and recommendations on NSW's approach to addressing climate change.

This report meets the annual report requirement under section 21 of the Climate Change Act. It covers NSW's progress towards the emissions reduction targets and adaptation objective for the period 1 July 2024 to 31 December 2025 and summarises the Commission's work over that period. Where relevant, more recent developments and work from the Commission have been included to ensure the report is as current as possible when published.

Introduction

Every fraction of a degree of global warming has real social, environmental and economic consequences. Globally, the last 11 years have been the warmest on record. Australia suffers from the second-highest per-capita economic and insurance losses from extreme weather in the developed world.

Modelling estimates suggest that increased global temperatures between 1975 and 2024 reduced the size of the NSW economy by approximately $180 billion in 2024 alone. Climate impacts will directly affect worker income and the cost of living for NSW households, but the scale of these impacts depends on the scale of warming and adaptation action.

Forward-looking modelling estimates that achieving global net zero by 2050 increases the income of the average worker in NSW by around $2,000 every year for the next 50 years, compared to continuing on the world's current, higher warming trajectory (2024–25 dollars).

The global energy system is shifting towards clean energy, which is now often the cheapest source of power. Global investment in clean energy outpaces investment in fossil fuels, and in NSW was the largest source of private capital investment in 2024–25.

The development of large and small-scale renewable energy is also progressing. But there is still a clear need for the NSW Government to actively drive emissions reductions and climate adaptation. Action on climate change must be embedded across government decision-making, including through the planning system, where decisions have long-term implications for NSW's ability to achieve its climate change objectives. This is further discussed in Chapter 1.

In 2025: The Commission undertook work to strengthen our collective understanding of the historical and future economic impacts of climate change in NSW, aligned with guiding principle 8(4)(c) in the Climate Change Act: to consider the economic risks of delaying action to address climate change.

The Commission wrote to the Independent Planning Commission and Department of Planning, Housing and Infrastructure recommending how to strengthen consideration of climate change in planning decisions.

Accelerating emissions reductions

Chapter 2 shows that despite reductions since 2005, emissions are not reducing fast enough to achieve NSW's legislated targets of a 50% reduction by 2030 or a 70% reduction by 2035. Emissions increased between 2021–22 and 2022–23 due to less carbon storage in the land sector and increases in emissions in the transport, resources and agriculture sectors. Accelerated action is required to get emissions reductions back on track.

A significant portion of the emissions reductions must come from the electricity sector, where coal-fired power stations remain the major source. Electrification also underpins some of the most immediate and cost-effective opportunities to reduce emissions in transport, buildings and low-to medium-temperature industrial heat.

But despite considerable policy effort, the roll-out of renewable generation, storage and transmission is behind schedule. Challenges include planning timeframes, securing finance and community support, and logistics during construction. The forecast increased electricity demand from data centres means good policy design is vital to ensure development supports the state's electricity transition.

Reducing methane emissions should also be a key near-term focus for the NSW Government, as methane emissions have an oversized impact and make up 30% of NSW's emissions. Implementing existing avoidance and abatement options to reduce emissions from livestock, landfills and coal mines should be a priority.

Across all of NSW's economic sectors, policy clarity and stability, underpinned by long-term strategic planning and investment, are required to provide a foundation for longer term emissions reductions, particularly where abatement technologies are not yet mature or large capital investments are required.

Hydroelectric power station in Tumut

The Commission responded to the Minister for Climate Change's request for advice on the upcoming Net Zero Plan to 2035, highlighting key areas for NSW Government attention.

The Commission made a submission and appeared at a hearing of the parliamentary inquiry into the impact of Renewable Energy Zones on rural and regional communities and industries in NSW, and made a submission to the parliamentary inquiry into data centres.

The Commission published the Coal Mining Emissions Spotlight Report in response to a recommendation from the Joint Standing Committee on Net Zero Future and made a submission and appeared at hearings of the parliamentary inquiry into emissions from the fossil fuel sector. The Commission also responded to the Minister for Climate Change's request to review the EPA's Proposed Greenhouse Gas Mitigation Guide for NSW Coal Mines.

The Commission has commenced development of NSW-specific decarbonisation pathways, which will show for the first time how the legislated targets may be achieved and provide a key evidence base for policy design and future monitoring.

Adapting to a changing climate

Chapter 3 focusses on NSW's adaptation action. NSW communities are already living with the realities of climate change, including extreme weather events and heat stress which will worsen in the immediate future. The NSW Government has commenced foundational work to address these impacts, but improved governance and increased resourcing that responds to the scale of the risk would strengthen the state's response.

About half of all actions across NSW's key adaptation policies are significantly delayed. The state's first climate change risk assessment is now nearly 3 years overdue. These delays have disrupted the sequencing of the adaptation policy cycle and weakened the effectiveness of NSW's adaptation response.

Current adaptation action tends to be focussed on laying foundations rather than coordinated, system-wide interventions that directly reduce climate risk. Agencies face challenges such as capability and capacity constraints, inconsistent executive accountability, and limited integration of adaptation into decision-making and investment processes. Improved governance is required.

Investment in adaptation could also be increased and better targeted to protect the people, places and economy of NSW from escalating climate risk. A long-term financing strategy that considers the responsibilities of different agencies and levels of government is required to move beyond risk and priority identification towards implementing actions that directly build resilience.

The Commission wrote to the Minister for Climate Change with recommendations to help address the impacts of heat in NSW. Subsequently, the Commission published the Heat Stress Spotlight Report in 2026, recommending strategies to support the NSW Government and broader community's response to the health risks of extreme heat and humidity events.

Adam McLean

Jagun Alliance

The Commission's visit to Bundjalung Country, Northern Rivers, included cultural walks, on Country yarns, observation of a cultural fire, site visits to flood-impacted areas, and roundtable discussions.

Learning from First Nations peoples

Chapter 4 highlights the critical role First Nations leadership can play in climate decision-making. It recognises that cultural knowledge, grounded in millennia of stewardship and responsibility to future generations, offers essential guidance for addressing long-term, cumulative and local impacts. Embedding First Nations peoples' knowledge and practice in policy, disaster resilience and land stewardship, for example in responding to disasters impacting First Nations communities or managing land with cultural fire, can support more integrated climate action.

Importance of local knowledge and practice in climate action across NSW

Chapter 5 examines the increasingly active role of communities across NSW in responding to climate change, drawing on local knowledge, networks and community-led initiatives. At the same time, climate impacts vary significantly across regions, underscoring the need for tailored approaches that reflect local risks, economic structures and community priorities.

There are opportunities to better draw on the knowledge and role of local councils. Councils have made progress integrating climate considerations into strategic planning, but they need support to build this capability and to finance initiatives. NSW Government coordination is required to ensure all communities benefit from effective, locally led adaptation and emissions reduction initiatives.

The Commission has received submissions, convened roundtables and held meetings with stakeholders across sectors, and visited 3 regions of NSW to hear firsthand from communities navigating the realities of climate change. The breadth and depth of that engagement has materially strengthened this report's analysis and grounded the Commission's independent assessment.

Role of the Net Zero Commission

Chapter 6 outlines the Commission's legislated functions, structure and values, summarises completed work, describes longer-term priorities, and explains how stakeholders and communities can engage with the Commission's ongoing and future work.

Recommendations

NSW is cutting emissions but not fast enough to meet its 2030 and 2035 legislated targets. The pace of decarbonisation must urgently increase.

Note: The recommendations are not presented in the same order in the report. Section references are provided for ease of navigation.

1 NSW Government decisions, particularly planning decisions, need to take the targets into account

NSW Government decisions have a significant short and long-term impact on greenhouse gas emissions and the state's ability to achieve its legislated emissions reduction targets. Whole-of-government priorities and decision-making must be consistent with the targets. Planning decisions need to unlock decarbonisation and avoid or minimise future emissions. To inform and support decision-making, NSW emissions data and monitoring need to be improved.

Key focus areas for the NSW Government are:

A. Prioritising planning approval for projects that will contribute to meeting emissions reduction targets, in particular, renewable energy infrastructure and industrial decarbonisation projects (see Section 1.5).

B. Ensuring meaningful consideration of NSW's emissions reduction targets in all NSW Government decisions, particularly in planning assessments of coal mine extensions or expansions, and data centres (see Section 1.5).

C. Improving the availability of verified emissions data to enable more accurate monitoring and reporting across supply chains and better inform government and private sector decision-making (see Section 2.2).

2 Accelerate the electricity sector transition

The electricity sector must deliver a large part of the 2030 and 2035 emissions reduction targets through the closure of coal power stations. This is currently not on track. Eraring power station's closure has already been delayed twice from 2025 to 2027 and then 2029, and it is vital its closure is not postponed further. Low-emissions electricity is a critical enabler for whole-of-economy decarbonisation. The build out of transmission, renewable generation and storage, including consumer energy resources and other types of distributed energy resources, must accelerate to maintain system security and reliability while allowing the closure of coal power stations.

Key focus areas for the NSW Government are:

A. Reducing barriers to renewable generation, storage and transmission delivery throughout planning, financing and construction phases.

B. Improving host communities' support for new renewable energy and transmission infrastructure, including by requiring meaningful engagement and ensuring benefits to the regions.

C. Improving energy efficiency of existing facilities and buildings, and accelerating uptake and orchestration of distributed energy resources to put downward pressure on energy bills and reduce the need for large-scale generation, storage and transmission.

D. Ensuring new industrial loads, especially data centres, rely on additional renewable energy sources and support the timely closure of coal power stations.

See Section 2.3.

3 Accelerate uptake of existing electric alternatives for transport, industry and buildings

Technology to electrify transport, buildings and low-to-medium temperature industrial heat is commercially available. Deployment needs to be accelerated to reduce fossil-fuel use and costs. NSW Government can build on efforts to date, such as the Energy Security Safeguard, to strengthen policy signals and bring forward private sector and consumer action.

Key focus areas for the NSW Government are:

A. Enabling and incentivising faster uptake of passenger and light commercial electric vehicles in NSW, including by ensuring a rapid build out of the statewide charging network (public, residential and commercial), and expanding public transport, walking and cycling (see Section 2.4).

B. Planning for and incentivising electrification of trucks and buses, including charging infrastructure along freight corridors (see Section 2.4).

C. Phasing out gas use in existing buildings and requiring all-electric new buildings while considering vulnerable people and regulating refrigerants to reduce their climate impact and avoid long-lasting, toxic chemicals (see Section 2.9).

D. Driving energy efficiency and improved thermal resilience through mandatory disclosure of performance for all new and existing homes at the point of sale or lease, and minimum standards that support health and thermal safety in a changing climate (see Section 2.9).

E. Incentivising electrification of low-to-medium temperature process heat, including by helping businesses understand and adopt electric options and reforming existing schemes to reduce financial barriers (see Section 2.8).

4 Significantly reduce methane emissions

Methane is a potent greenhouse gas that accounts for 30% of NSW's emissions. Avoiding methane emissions must be a key priority for action to meet NSW's legislated targets. The most significant sources of methane emissions in NSW are livestock (49%), coal mining (30%) and landfills (10%).[1]

The Commission's 2024 Annual Report identified projected increases in coal mining emissions as a key concern, and in 2025 the Commission published the Coal Mining Emissions Spotlight Report. Its findings are listed below. The NSW Government has since released a new policy position on coal mining (NSW Coal Industry 2026–50), which allows mine extensions and expansions to continue. Further guidance for consent authorities is required to ensure emissions are meaningfully considered in planning decisions for additional coal mining.

Emerging solutions for mitigating methane from livestock should continue to be commercialised and scaled up. Technical abatement solutions exist for landfill emissions and NSW Government should act to increase deployment.

Key focus areas for the NSW Government are:

A. Developing and delivering policies that implement the findings of the Commission's Coal Mining Emissions Spotlight Report, in particular Finding 3 (see Section 2.7).

B. Scaling the low-cost abatement measures identified by the NSW Department of Primary Industries and Regional Development, including biochar, feed additives, manure management and herd management, alongside longer-term pathways for reducing livestock emissions (see Section 2.5).

C. Reducing waste emissions by maximising landfill gas capture, reducing total waste generation, and diverting other methane-generating waste from landfills (beyond food and garden organics mandates, see Section 2.10).

Findings from the Coal Mining Emissions Spotlight Report

Finding 1: In order for NSW emissions targets to remain achievable, on-site abatement at existing mines is essential, particularly to reduce fugitive emissions. Additional regulatory measures will be required to achieve measurable on-site abatement.

Finding 2: The Commonwealth and NSW Governments are working to improve the accuracy of fugitive emissions reporting at open cut coal mines. Collaboration across these efforts could accelerate and strengthen outcomes.

Finding 3: Consistent with the objectives of the Climate Change Act, NSW consent authorities need to meaningfully consider greenhouse gas emissions and their impacts in all planning decisions, including those for additional coal mining.

Finding 4: Continued extensions or expansions to coal mining in NSW are not consistent with the emissions reduction targets in the Climate Change Act or the Paris Agreement temperature goals it gives effect to.

Finding 5: NSW Government will need to prioritise its consideration of policies that systematically prepare for the decline of coal extraction and provide for a just and orderly transition for coal-producing communities and impacted regional economies.

1 Commission analysis of the 2022–23 state and territory greenhouse gas inventory (Cth DCCEEW, 2025j).

5 Strengthen the policy environment for longer-term emissions reductions across sectors

The transition to net zero requires policy clarity and stability, as well as strategic long-term planning that is explicitly orientated towards a fossil fuel-free economy. This was a key message in the Commission's advice to inform the NSW Government's Net Zero Plan to 2035. This is particularly important for industries where the transition pathway involves emerging technologies still reaching commercial scale and where policy must be equally focused on supporting new industries and economic activity.

Key focus areas for the NSW Government are:

A. Focusing policy on existing and new industries that will be competitive in a net zero future and communicating priorities clearly to attract private sector investment, including through supporting innovation, demonstration and scale-up (see Section 2.8).

B. Establishing the platforms and new infrastructure for the decarbonisation of heavy freight, aviation and shipping, including options to scale alternative low carbon fuels for aviation and shipping, and shifting road freight to rail (see Section 2.4).

C. Improving alignment across agriculture, land-use and climate policy frameworks to reduce emissions, focusing on protecting native forests, limiting land clearing, and ensuring land managers can access incentives and financial mechanisms to deliver abatement, resilience and other co-benefits (see Sections 2.5 and 2.6).

D. Advocating for more transparent and accurate reporting on embodied emissions in the built environment sector, supported by robust carbon tracking and accounting at the product level throughout supply chains (see Section 2.9).

E. Leading advocacy for Commonwealth policy changes that support and drive emissions reductions, such as fuel tax credit reform (see Sections 2.2, 2.4 and 2.7).

F. Embedding circular economy principles in government policies and programs where they can deliver the greatest reductions in emissions and waste generation (see Section 2.10).

G. Developing a credible residual emissions strategy that prioritises avoidance and reduction, establishes a clear role for carbon removals, and minimises the use of offsets by focusing on mechanisms to reduce direct emissions (see Section 2.2).

Adaptation requires stronger governance and greater investment to make NSW more resilient

6

Improve governance of adaptation policy and action

Effective adaptation governance is essential to drive the timely delivery of adaptation policy and actions, in line with the legislated objective to make NSW more resilient to a changing climate. Current gaps in governance, delivery challenges for key policies and under-investment in adaptation have undermined the coherence and effectiveness of adaptation policy in NSW. Improving governance through regulations under the Climate Change Act provides a significant opportunity to overcome these barriers by establishing clear roles and responsibilities, co-ordinated delivery and accountability for adaptation. This would accelerate NSW's progress towards the adaptation objective.

Key focus areas for the NSW Government are:

A. Introducing regulations to clarify roles and responsibilities for adaptation and specify timeframes for statewide climate risk assessments, adaptation action plans and adaptation monitoring and evaluation.

B. Releasing the Climate Change Risk and Opportunity Assessment as soon as possible. Within 6 months of its release, the findings of an independent evaluation into its development should be published to inform the delivery of future assessments.

C. Ensuring timely delivery of actions under the Climate Change Adaptation Strategy, State Disaster Mitigation Plan and Climate Change Adaptation Action Plan.

D. Progressing adaptation activities beyond risk identification toward actions that directly increase resilience to climate risks.

E. Considering action prioritisation, progress indicators and a greater focus on addressing vulnerability in disadvantaged groups and communities, including First Nations peoples, within its forthcoming review of the Climate Change Adaptation Action Plan.

F. Implementing actions that address findings from the Commission's Heat Stress Spotlight Report.

See Section 3.4.

7 Increase overall investment in adaptation

Strategic, long-term investment in adaptation which aligns with the scale and nature of escalating climate risk is essential to protect NSW communities and realise the benefits of proactive action. While some funding mechanisms exist, they are not consistently directed towards adaptation as a primary objective. Current funding constraints are limiting the effectiveness of key policies and actions. A coordinated, long-term approach to adaptation investment should consider proportionate funding for adaptation responsibilities across NSW Government agencies and councils. This would prevent adaptation gaps from continuing to widen and protect communities from greater exposure to climate risks which could have been identified and managed.

Key focus areas for the NSW Government are:

A. Developing a financing strategy to fund adaptation action which considers the economic benefits of proactive investment, the resourcing needs of agencies and local councils proportionate to their responsibilities, and the appropriate use of different funding sources, including the Climate Change Fund.

B. Leading advocacy for Commonwealth policy change to address structural gaps in adaptation financing, such as a national adaptation finance strategy to drive state and local-level adaptation action.

C. Providing visibility of NSW Government expenditure on climate change adaptation through regular reporting, supported by guidance of what is considered in scope of this expenditure.

See Section 3.4.

8 Enable communities to drive climate action

Communities across NSW increasingly want to shape how their places respond to climate change. Stronger partnerships and long-term investment approaches between the NSW Government, First Nations communities, local councils and communities are required to enable and scale targeted and effective locally-led action.

First Nations knowledge, grounded in millennia of stewardship and responsibility to future generations, provides essential guidance for climate decision-making and long-term resilience. However, opportunities and funding for First Nations peoples to lead climate responses and deliver land stewardship that improves the resilience of land and the stability of carbon stored within it remain limited.

Local councils, with strong community connections and direct responsibilities for land-use planning, infrastructure and services, are well-placed to support locally-led action. They play a key role in identifying and resourcing the right delivery partners within communities to respond to climate impacts, drive climate action and build resilience. Communities face escalating climate impacts. While local councils are well-placed to understand these risks, they need to be better supported to address them.

Key focus areas for the NSW Government are:

A. Embedding First Nations leadership as a core pillar of climate governance, including by responding to the Aboriginal Disaster Resilience Policy Roundtable communique, to strengthen First Nations community resilience across NSW (see Section 4.2).

B. Supporting First Nations communities to investigate how the broader use of cultural fire could contribute towards emissions reduction goals through carbon removals and reduce bushfire-related emissions, in addition to improving climate resilience (see Section 4.2).

C. Ensuring net zero and sector plans address the diverse specific needs of regions across the state, supporting and resourcing councils to drive the local change necessary for the transition and in meeting the challenges of adapting to climate change (see Section 5.4).

D. Providing greater support to local and regional-scale adaptation initiatives, such as capability and coordination support, which considers the differing challenges and contexts of councils (see Section 5.4).

E. Considering whether broader climate change adaptation can be adequately addressed at the local and regional scale through the existing framework set out in the *Reconstruction Authority Act 2022* (NSW) for disaster adaptation planning (see Section 5.4).

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Acronyms and abbreviations

Abbreviation	Term
ACCN	Australian Climate Councils Network
ACCU	Australian Carbon Credit Unit
AEMO	Australian Energy Market Operator
AMFA	Anti-methanogenic feed additives
ARENA	Australian Renewable Energy Agency
BASIX	Building Sustainability Index
BEV	Battery electric vehicle
CCAS	NSW Climate Change Adaptation Strategy
CCF	NSW Climate Change Fund
CCRO	Climate Change Risk Officer
CCROA	Climate Change Risk and Opportunity Assessment
CER	Consumer energy resources
Climate Change Act	*Climate Change (Net Zero Future) Act 2023* (NSW)
CO_2	Carbon dioxide
COAG	Council of Australian Government
Coal Guide	EPA Greenhouse Gas Mitigation Guide for NSW Coal Mines
CSIRO	Commonwealth Scientific and Industrial Research Organisation
Cth DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water
CWO REZ	Central-West Orana Renewable Energy Zone
DAP	Disaster Adaptation Plan
DER	Distributed energy resources
DPHI	NSW Department of Planning, Housing and Infrastructure
DPIRD	NSW Department of Primary Industries and Regional Development
EIS	Environmental Impact Statement
EPA	NSW Environment Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
ESS	Energy Savings Scheme
EV	Electric vehicle
FBT	Fringe benefits tax
FOGO	Food and Garden Organics
FTCs or FTC scheme	Fuel tax credits (scheme)
GW	Gigawatt
GWh	Gigawatt hour

Acronyms and Abbreviations (continued)

Abbreviation	Term
GWP	Global warming potential
ICCN	International Climate Councils Network
ICE	Internal combustion engine
IPC	Independent Planning Commission of NSW
JOs	Joint Organisations
JONZA	Joint Organisation Net Zero Acceleration
LULUCF	Land use, land use change, forestry
MAC	Marginal abatement cost
Mt	Million tonnes
$MtCO_2$-e	Million tonnes of carbon dioxide equivalent
MW	Megawatt
N_2O	Nitrous oxide
NARCliM	NSW and Australian Regional Climate Model
NCC	National Construction Code
NCRA	National Climate Risk Assessment
NIDR	National Indigenous Disaster Resilience
NSW DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water
NVES	New Vehicle Efficiency Standard
OECD	Organisation for Economic Co-operation and Development
PDRS	Peak Demand Reduction Scheme
PFAS	Per-and polyfluoroalkyl substances
PHEV	Plug-in hybrid electric vehicle
PIPAP	Primary Industries Productivity and Abatement Program
REZ	Renewable Energy Zone
RIC	Regional Investment Corporation
ROCs	Regional Organisations of Councils
RTO	Regenerative thermal oxidiser
Safeguard	The Safeguard Mechanism
SAP	Special Activation Precincts
SDMP	State Disaster Mitigation Plan
SEPP	State Environmental Planning Policy
tCO_2-e	Tonnes of carbon dioxide equivalent
TWh	Terawatt hour
VAM	Ventilation air methane

Matt Beaver

Chapter 1

Introduction

1.1 Purpose of this report

This is the Net Zero Commission's (the Commission's) annual progress report for the 2024–25 reporting period. The Commission is an independent statutory body established under the *Climate Change (Net Zero Future) Act 2023* (NSW) (Climate Change Act) to provide expert advice and recommendations on NSW's approach to meeting its legislated emissions targets and adaptation objective. The Joint Standing Committee on Net Zero Future, established in June 2024, oversees the Commission by monitoring and reviewing the implementation of its legislated functions to ensure transparency and independence.

Under the Climate Change Act, the Commission must deliver an annual report that assesses progress against the legislated targets and adaptation objective, and summarises all reports given to the Minister during the reporting period. The annual report can also include any recommendations the Commission makes to the Minister for Climate Change. The report is required to be tabled in NSW Parliament by the Minister for Climate Change, and the NSW Government must provide a response.

To support accountability, this report may be subject to parliamentary oversight through an inquiry by the Joint Standing Committee on Net Zero Future, as occurred with the Commission's 2024 Annual Report. The Committee's inquiry process provided individuals and organisations with an opportunity to make submissions in response to the Commission's findings. For more information on the outcomes of the inquiry into the Commission's 2024 Annual Report see Chapter 6.

A legislative amendment made on 23 September 2025 changed the delivery date of the Commission's annual progress report from 1 November to 1 July and the reporting period from financial year to calendar year. Therefore, the reporting period for this report is 1 July 2024 to 31 December 2025. All future reports will cover the preceding calendar year. Recent Commission work and developments have been included to ensure the report is as current as possible at the time of publication. See Chapter 6 for a list of the Commission's outputs delivered within the formal reporting period.

Matt Beaver

Report overview

This report provides advice on the state's progress towards the legislated emissions reduction targets and adaptation objective. It is structured into 6 chapters:

Chapter 1

Introduction

Outlines the growing impacts from climate change, the progress and challenges of the clean energy transition, key developments in NSW since the Commission's last report and the role of NSW Government decision-making in driving action.

Chapter 2

Accelerating emissions reductions

Provides a detailed assessment of NSW's emissions trajectory by sector, identifying progress to date and where further action is required to meet legislated targets, specifically addressing section 21(1)(a) of the Climate Change Act.

Chapter 3

Adapting to a changing climate

Examines significant climate impacts over the reporting period, reviews progress on key adaptation initiatives and highlights priority areas for scaling up climate resilience in NSW, specifically addressing section 21(1)(b) of the Climate Change Act.

Chapter 4

Learning from First Nations peoples

Highlights the critical role of First Nations leadership and knowledge systems in guiding climate action that addresses the long-term, cumulative and local impacts of climate change, specifically addressing the Climate Change Act's requirement for the Commission to consider the knowledge and perspectives of First Nations communities (section 8(8)(a)).

Chapter 5

Importance of local knowledge and practice in climate action across NSW

Shows how climate impacts vary across NSW regions, and highlights the importance of local, community-led approaches, including the role of councils in emissions reduction and adaptation. This addresses the Climate Change Act's requirement for the Commission to consider the knowledge of regional communities and how they will be impacted by climate action (sections 8(4)(d), 8(8)(c)) and the need to support and consult with local communities affected by climate action (sections 8(7), 8(8)(d)).

Chapter 6

Role of the Net Zero Commission

Outlines the Commission's legislated functions, summarises completed work (addressing section 21(1)(c) of the Climate Change Act), and explains how stakeholders and communities can engage with the Commission, noting the Commission's duty to consult with people it considers relevant or necessary in section 17 of the Climate Change Act.

Western Sydney Floods, March 2021

1.2 Climate change impacts are intensifying

The world is projected to warm by 2.3 to 2.9°C by the end of the century based on current global emissions reduction commitments (Dasgupta, 2025). A global average temperature rise of 2°C is estimated to expose more than 2.3 billion people worldwide to dangerous heat and humidity (D. Li et al., 2020), and increase risks to food supplies (L. Li et al., 2025). Every fraction of a degree of global warming has real consequences for people's lives, food and water security, biodiversity and the severity of extreme weather (UNEP, 2025). Those already vulnerable are often the hardest hit.

Australia is already facing the impacts of a changing climate. Last year was the nation's fourth hottest year since records began, with the average temperature 1.68°C above the 1961–1990 baseline (Bureau of Meteorology, 2025). Nine of NSW's 10 warmest years on record have occurred since 2013.[2]

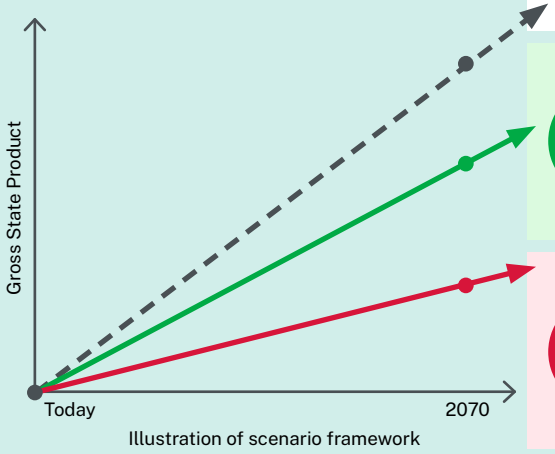
Communities across NSW reported to the Commission that climate impacts are becoming more frequent, more intense and increasingly difficult to manage. Essential services and infrastructure are increasingly vulnerable, with extreme events and climate hazards impacting public health and safety and limiting access to critical services. Communities also emphasised that climate impacts are not felt equally. People already experiencing social and economic disadvantage face disproportionate risks and have fewer resources to prepare, respond and recover (Net Zero Commission, 2025b).

Climate change impacts are affecting economic activity by reducing productivity, while more frequent and intense extreme weather events disrupt infrastructure, transport and supply chains. Historical modelling indicates that warming over recent decades has materially reduced the size of NSW's economy relative to a world without climate change (Neal & Gupta, 2025). This work estimates that, by 2024, NSW income per capita was approximately 18% lower than it would have been without past, human-induced climate change. Forward-looking modelling shows that the amount of continued economic impacts depends on the scale of warming. Effective mitigation and adaptation action can reduce the impact to NSW households (Figure 1) (Deloitte Access Economics, 2026). This is further discussed in Chapter 3.

2 Commission analysis of Bureau of Meteorology NSW annual climate summaries for 2013–2025 (Bureau of Meteorology, 2026).

Figure 1: Future economic outcomes diverge significantly under different global warming pathways

Modelling two trajectories helps understand how the scale of global climate change impacts NSW's future economy



Hypothetical baseline that excludes climate damages

Desired, lower warming trajectory

Climate stabilises at well below 2°C above pre-industrial levels by 2100.

- **Stronger economy**
- **Lower climate impacts**
- **More resilient communities**

Current, higher warming trajectory

Climate stabilises at 2.6°C above pre-industrial levels by 2100.

- **Higher costs**
- **More climate damage**
- **Greater economic disruption**

Climate impacts will directly affect worker income and the cost of living for NSW households

This is driven by lower productivity and higher infrastructure, food and insurance costs. The scale of these impacts depends on the scale of warming.

Increased global action reduces cost of living in NSW

Current, higher warming trajectory could add around **$3,000** to the annual grocery bill of a 4-person household by 2070, compared to the baseline.

Under the desired, lower warming trajectory, this impact would be reduced to around **$2,000**.

Shifting from the higher to lower warming trajectory could save around $1,000 on an average NSW household's annual grocery bill by 2070.

Increased global action strengthens incomes in NSW

Current, higher warming trajectory could cost the average worker around **$3,500** in lost annual income every year for the next 50 years.

Under the desired, lower warming trajectory, this impact would be reduced to around **$1,500**.

Shifting from the higher to lower warming trajectory could add around $2,000 to the annual income of an average NSW worker every year for the next 50 years.

Source: All dollar values in 2025 dollars, using a 2% discount rate (Net Zero Commission, 2026c).

Mount Solitary on fire, viewed from Wentworth Falls

Over the past 45 years,

Australia has recorded the second-highest per-capita extreme weather losses in the developed world, behind only the United States, reflecting high exposure to natural hazards, growing populations in risk-prone areas and infrastructure not designed for a changing climate (Insurance Council of Australia, 2025).

In 2025 alone, insured losses reached almost

$3.5 billion

from 264,000 claims in Queensland and NSW (Insurance Council of Australia, 2026).

Government disaster spending is also increasing. The NSW Government noted that its 2025–26 budget was significantly impacted by increasing costs from natural disasters, the cost of which have increased more than tenfold in recent years (NSW Government, 2025a).

Australia is among the world's most climate-exposed countries, facing escalating floods, fires, and extreme heat. NSW reflects this vulnerability acutely, experiencing 48 declared natural disasters in 2024–25, including storms, floods, bushfires, and one cyclone (Commission analysis of National Energy Management Agency, 2026b). These hazards are projected to worsen, requiring a major scale-up in adaptation efforts to keep communities safe. Such efforts will be most effective when they are nested within, and reinforced by, a unified national approach to adaptation.

The current and future impacts of climate change reinforce the importance of adaptation and renewing efforts to reduce emissions. In July 2025, the International Court of Justice affirmed that all nations have a legal duty to prevent climate harm and protect the climate system. It also emphasised the 'undisputable' relevance of intergenerational equity to these international climate obligations, which means nations must consider the interests of future generations when implementing policies to fulfil these obligations (International Court of Justice, 2025, Paras. 155-157).

Box 1: Climate change is an intergenerational inequality issue

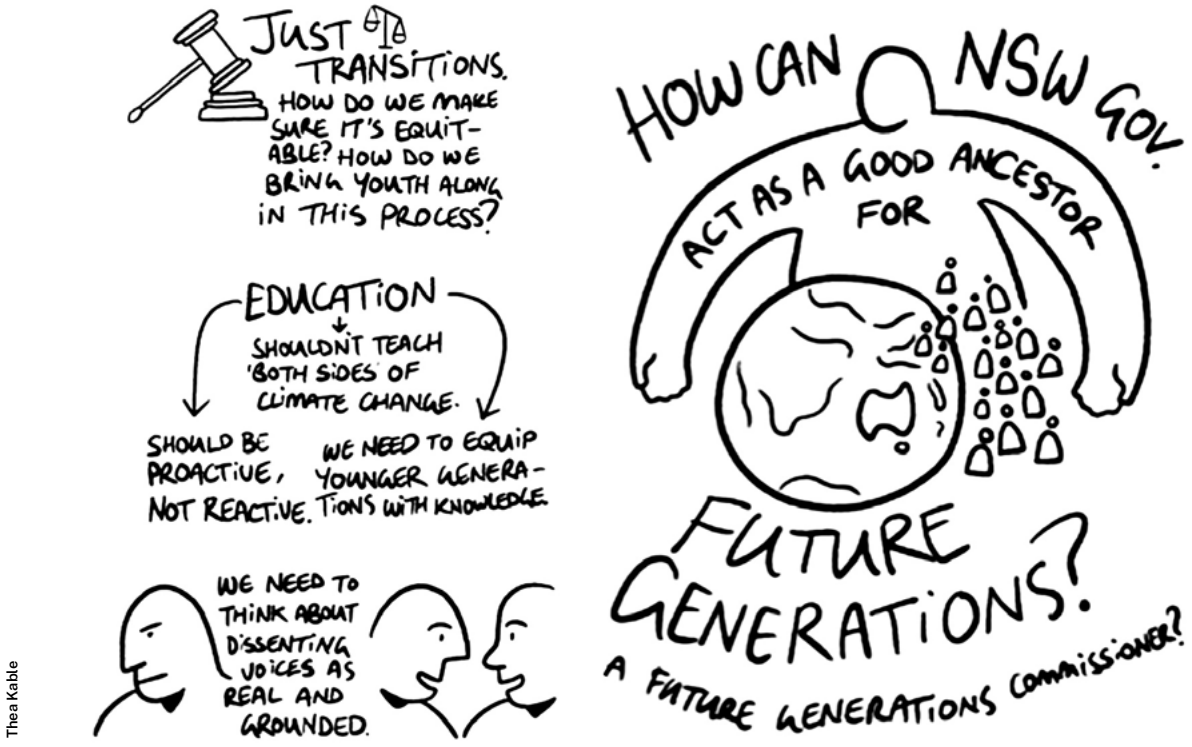
Climate change is an intergenerational challenge, with young people set to bear a disproportionate share of its long-term impacts. It is one of the most pressing issues facing young Australians today. Around three-quarters of young Australians (76%) are worried about climate change, and 67% experience climate-related anxiety (Fava et al., 2023; Yetsenga et al., 2026).

Climate change is also disrupting young people's education and daily lives. During ex-Tropical Cyclone Alfred, children lost a combined 2.3 million days of learning due to cyclone-related school closures in March 2025 across Queensland and NSW (Parents for Climate, 2025). Without further global action, research shows that a Gen Z Australian's lifetime income could be $165,000 lower by 2070, underscoring the lasting economic consequences of delayed climate action (Yetsenga et al., 2026).

To better understand young people's experience and priorities, the Commission convened a youth roundtable in July 2025 with representatives from 8 organisations across NSW. Participants stressed the importance of equity and fairness in climate action, while recognising the complexity of achieving a just transition. Young people highlighted the value of local community action and stronger engagement with local councils, as well as the need to equip young people with climate knowledge.

Participants also emphasised the importance of involving them during policy development, including exploring mechanisms such as a 'future generations' commissioner to ensure the interests of young people and those yet to be born are considered.

Figure 2: Net Zero Commission youth roundtable artist sketch – July 2025



This approach aligns with the work of the Future Council (2026), which aims to embed the interests and ideas of young people and future generations in climate decision-making. Climate policy responses need to consider young people's climate concerns, protect their education and wellbeing, and empower future generations to participate meaningfully in the transition.

1.3 The global transition is progressing, but needs to accelerate

The global transition to net zero is continuing, driven by stronger policy signals, rising clean energy investment and reducing technology costs. However, despite most countries continuing to pursue net zero targets, progress is uneven. Global headwinds, geopolitical instability, contested climate politics, and declining public trust are slowing momentum and making the transition more complex.

Globally, national emissions reduction targets are continuing to strengthen, with

67%

now embedded in law or formal policy, up from **52% in 2024**. The economics of clean energy continue to improve.

(Net Zero Tracker, 2025)

Globally in 2024,

91%

of new utility-scale renewable power projects were cheaper than any new fossil fuel alternatives, **with the price of solar decreasing by 88% over the past 15 years.**

(IRENA, 2025; Roser, 2025)

This has seen the share of solar and wind in global electricity production more than triple over the period from 2015 to 2025. Solar output alone doubled in the last 3 years (Fulghum et al., 2026). In 2026, renewable energy is expected to overtake coal as the world's largest electricity source for the first time (IEA, 2026a).

Investment patterns reflect this trend, with investment in clean energy outpacing fossil fuel investment since 2023 (Boehm & Schumer, 2025). In 2026, boosted by global fuel security concerns, global investment in clean energy, such as renewables, nuclear, grids, storage, low-emissions fuels, efficiency and electrification, is expected to reach US$2.2 trillion – twice the investment in fossil fuels (IEA, 2026b). Around 65% of the world's largest listed companies now have net zero commitments and are investing in clean energy supply chains (Net Zero Tracker, 2026). Investment in these clean energy supply chains grew 6% in 2025, reflecting recognition by companies of the importance of embedding energy security within their climate-related strategies (BloombergNEF, 2026a).

Policy and market signals are reinforcing the transition. The European Union's Carbon Border Adjustment Mechanism, which came into full effect in January 2026, signals an important shift toward lower-emissions production and trade (European Commission, 2026). In Australia, national decarbonisation efforts were strengthened in 2025 by several initiatives that aim to increase transparency and accountability and send clearer investment signals. Measures included the updated national 2035 emissions reduction target of 62–70% below 2005 levels, the Commonwealth Government's sector specific emissions reduction plans, the $22.7 billion Future Made in Australia package and the introduction of mandatory climate disclosure laws.

At the same time, decarbonisation in hard-to-abate sectors such as heavy industry, aviation and heavy-duty road freight faces technological constraints, with key technologies not yet mature or deployed at scale (IEA, 2025a).

Geopolitical instability is also presenting challenges. The US-Iran conflict has disrupted global oil and gas supplies. In Australia, it has exposed the nation's reliance on imported liquid fuels, more than 80% of which are sourced from overseas (CEFC & Deloitte, 2025). These developments have underscored the fragility of fossil-fuel dependent energy systems and highlighted the fact that countries can improve

their energy security by expanding renewable energy. However, in the short term, the price volatility and supply disruptions have prompted several Asian countries to increase coal-fired power generation to replace scarce and expensive gas (Surucu-Balci & Balci, 2026).

Policy uncertainty and social licence challenges for renewable energy and net zero policies are compounding these difficulties. Investors cite fragmented policy settings and shifting political narratives as barriers to long-term investment, despite recent reforms (IGCC, 2025). In some communities, mistrust in the transition is growing, with many feeling they are bearing the costs without seeing the benefits. These pressures are being amplified by the rise of orchestrated climate misinformation and disinformation, which are undermining public confidence and creating misunderstanding about climate risks and solutions.

A recent federal Senate inquiry into the prevalence and impacts of climate misinformation and disinformation found that coordinated and misleading campaigns are undermining public trust, delaying renewable energy projects and distorting community understanding of climate risks and solutions (Select Committee on Information Integrity on Climate Change and Energy, 2026).[3] The inquiry found that while outright climate science denial has declined, mis/disinformation has shifted to attacking solutions. This involves spreading false claims about the cost, reliability, or risks of renewable energy and other climate measures. This reinforces the importance of building trust in the energy transition and in supporting NSW communities to prepare for climate impacts, make informed decisions, participate confidently, and benefit from the transition.

Addressing these challenges early will better position NSW to realise the benefits that the energy transition presents. NSW is already experiencing substantial investment and is well-placed to attract further investment, with the NSW Treasurer recently observing that the energy transition is the biggest source of private capital coming into the state (Wade & Smith, 2024). The priorities and actions required to ensure a well-managed transition are further discussed throughout this report.

1.4 Recent developments in NSW

Several major climate policy reforms are now underway in NSW. These include the development of a Net Zero Plan to 2035 (announced in response to the Commission's 2024 Annual Report, see Section 2.2), the Environmental Protection Authority (EPA) new climate requirements for licensees (e.g. see Sections 2.7 and 2.10), NSW's first Climate Change Risk and Opportunity Assessment (see Chapter 3), and the proposed Climate Change and Natural Hazards State Environmental Planning Policy (discussed in Section 1.5). NSW Government agencies, businesses and universities are now required to disclose their emissions and material climate-related risks and opportunities through climate-related financial disclosures. The Commission welcomes these initiatives from the NSW Government.

Brinae Smith

3 The inquiry notes that disinformation is generally categorised as the 'deliberate spread of misleading information, crafted to deceive or manipulate' while misinformation is defined as the 'spreading of false information without intent'.

NSW climate action is underway and needs to accelerate and widen

The annual build rate for large-scale renewable development in NSW **doubled in the last 5 years**, rising from half a gigawatt in 2020 to a full gigawatt in 2025.

Source: Commission analysis of BloombergNEF's Power Assets database, 2026

Both large-scale and distributed clean energy capacity in NSW is growing, which is reducing electricity sector emissions. The state has a significant pipeline of renewable energy projects and new legislative measures to accelerate the build out towards meeting its 2030 renewable generation and storage targets. Utility and rooftop solar and wind together accounted for 36% of NSW's electricity generation in 2025 (26 TWh), an increase of 16% from 2024 (22 TWh; Open Electricity, 2026).

Household-level participation has been a highlight. Annual rooftop solar installations have grown more than 250 times, from around 300 projects installed in 2005 to over 70,000 in 2025 (Clean Energy Regulator, 2026b). NSW's installed consumer energy resources capacity has more than doubled in the last 5 years (AEMO, 2026b). This includes significant numbers of household batteries being installed in the second half of 2025 with the support of the Australian Government's Cheaper Home Batteries Program (see Section 2.3). Momentum is also building in electrified transport, particularly light vehicles. Recent fuel price and supply shocks due to the US-Iran conflict have strengthened the case for electric vehicles by highlighting the risks of reliance on imported fuels (see Section 2.4).

Despite these signs of progress, NSW is not on track to meet its legislated targets and delays in decarbonising will likely increase future costs (Net Zero Commission, 2026c). Efforts to rapidly scale renewable energy are constrained by slow planning approvals, delays in securing finance, workforce pressures, supply chain constraints and technical challenges in the construction phase, as well as transmission delays (see Section 2.3). Decisions about major infrastructure, industry investment and land-use choices made today will either accelerate emissions reductions or make them harder and more expensive. The NSW Productivity and Equality Commission has also emphasised that decarbonising the electricity sector must be a priority and warned any delays in decarbonisation will likely increase future costs (NSW Productivity and Equality Commission, 2024).

The energy transition also has direct implications for the structure of NSW's economy. Regions such as the Hunter, Illawarra, and Western Sydney are particularly exposed to both the risks and opportunities of decarbonisation, including the replacement of coal-fired generation, electrification of industrial heat, and expansion of Renewable Energy Zones (REZs). The pace and coordination of this transition will therefore play a critical role in shaping regional employment, infrastructure investment, and the long-term economic competitiveness of NSW.

Progress towards NSW's legislated emissions reduction targets in each of the economic sectors is explored further in Chapter 2.

NSW is beginning its journey towards climate resilience

Action within NSW to prepare for meeting the challenges of our changing climate is imperative, as future warming is already locked in, even if global emissions reduction goals are met. Investing early and strategically in local-and regional-scale resilience reduces long-term costs and supports healthier, safer communities. The impacts of climate change are driving profound systemic shifts across key sectors of the NSW economy and society. Responding to these challenges requires not only localised adaptation efforts, but coordinated, cross-sector transformation to build long-term resilience in the face of deep and accelerating change.

The NSW Government released its first Climate Change Adaptation Strategy in 2022, setting out 20 actions, supported by $93.7 million in funding to 2030, to help government, businesses and communities plan for and respond to climate risks. The establishment of the NSW Reconstruction Authority in the same year strengthened this effort, with responsibilities for disaster recovery, risk reduction and community resilience through initiatives such as the State Disaster Mitigation Plan (SDMP) and Disaster Adaptation Plans (DAPs).

Investment in resilience is heavily skewed towards reactive spending on disaster recovery and response rather than proactive spending on adaptation and disaster risk reduction. For example, 87% of Australian Government disaster spending has been on recovery programs (Colvin et al., 2024). Despite some investment in adaptation and disaster preparedness by the Australian Government and the NSW Government, this imbalance has continued in recent years. Rebalancing this investment is challenging but will be essential for reducing exposure to the long-term impacts of climate change for NSW.

The scale and speed of climate impacts mean there is still much more to do. Communities across the state are dealing with more frequent and severe natural disasters, and while many people, councils and agencies are working to adapt, limited resources and fragmented responsibilities often slow progress. This is further explored in Chapters 3 and 5.

1.5 Whole-of-government decisions drive the pace of climate action

Government decisions have significant, long-term implications for the state's ability to decarbonise and become more climate resilient. To support a credible pathway toward achieving its legislated targets, NSW Government must consider the Climate Change Act when designing and implementing policy across all government agencies.

A stronger whole-of-economy approach would also benefit from First Nations knowledge and Aboriginal systems thinking, which are grounded in a deep understanding of Country and the interconnections between land, water, plants, animals and people over millennia. This perspective reinforces the need to approach emissions reduction across NSW as a whole-of-economy task, with coordinated action across sectors rather than siloed responses.

Climate considerations must be embedded across government decision-making

Climate objectives need to shape decisions across infrastructure, transport, housing, industry, budgeting, procurement, and service delivery. Jurisdictions making stronger progress on climate action have supported this through formal cross-government portfolio accountability for emissions reductions and adaptation, coordinated implementation and regular public reporting.

NSW has taken important steps on climate change through legislating the Climate Change Act and preparing the next Net Zero Plan update.[4] However, meeting the Climate Change Act's objectives requires a coordinated, enforceable and measurable framework for decision-making. The International Court of Justice's Advisory Opinion emphasised the importance of regulatory mechanisms in achieving emissions reductions and delivering adaptation measures, accompanied by effective enforcement and monitoring to ensure implementation (International Court of Justice, 2025, para. 282).

Regulations could clarify cross-government ministerial responsibility, embed climate considerations in governance (for example, through budget reporting, as in Norway), and set clearer expectations for monitoring, reporting and Net Zero Plan updates. Regulations could also strengthen adaptation governance where responsibilities remain fragmented and key elements of delivery have been delayed, including the state-wide Climate Change Risk and Opportunity Assessment.

Planning decisions are critical to achieving NSW's legislated targets and adaptation objective

Planning decisions shape where development happens, what infrastructure is prioritised, what gets built and what standards apply. These decisions often lock in emissions for decades to come and can also affect the ability of communities to cope with the impacts of a worsening climate. For this reason, planning decisions are central to achieving the objectives of the Climate Change Act.

To reinforce the importance of the planning system to the state's legislated climate objectives, the Commission wrote to the Department of Planning, Housing and Infrastructure (DPHI) and the Independent Planning Commission (IPC) on 26 September 2025 (Net Zero Commission, 2025d, 2025c). The letters advised DPHI and the IPC to consider the findings of the Commission's annual progress reports, and for any proposal to:

- assess scope 1 emissions against NSW's legislated targets
- evaluate measures to reduce scope 2 emissions
- account for scope 3 emissions given their contribution to climate change and resulting local impacts in NSW
- examine the cumulative impact of multiple projects in one sector on the legislated targets, and
- assess the proposal's climate-resilience measures.

These considerations highlight that the planning system should both enable developments that support emissions reduction and resilience and apply stronger scrutiny to proposals that could increase emissions or climate risk.

4 Development of a new Net Zero Plan for NSW was confirmed in the NSW Government Response to the Commission's 2024 Annual Report and the Parliamentary inquiry report by the Joint Standing Committee on Net Zero Future (NSW DCCEEW, 2025c).

The planning system should support projects and investments that are important to emissions reduction, such as renewable energy generation, transmission and enabling infrastructure, while balancing environmental and community priorities. At the same time, developments likely to increase emissions should be cumulatively assessed against the legislated targets and required to implement mitigation measures. This is particularly relevant for proposals such as coal mine extensions or expansions and data centres. As noted in the Commission's Coal Mining Emissions Spotlight Report, continued extensions or expansions to coal mining in NSW are inconsistent with NSW's legislated targets (see Section 2.7 for further detail on coal mining emissions).

Planning decisions also need to support stronger adaptation outcomes. Development should ensure that built systems can withstand, respond to, and recover from climate shocks. For example, planning decisions for homes should ensure adequate thermal resilience and thermal safety. Without these measures, development outcomes could amplify the vulnerability to heat stress and impose higher health and energy costs on the communities least able to bear them (Net Zero Commission, 2026b).

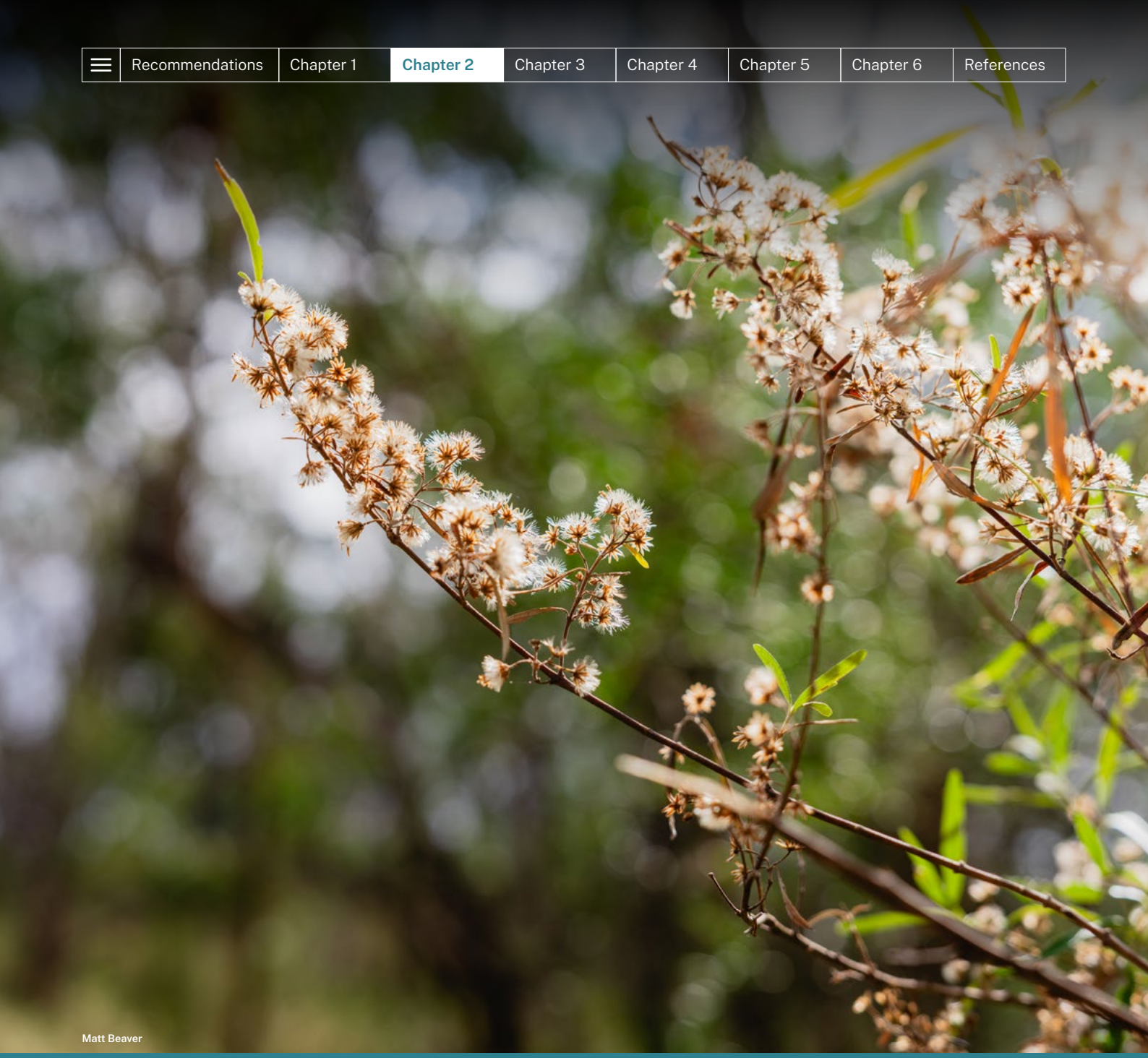
While there is more to be done, reform is already underway to embed climate considerations into the NSW planning system. In November 2025, the NSW Government amended the *Environmental Planning and Assessment Act 1979* (NSW) to add an objective to "promote resilience to climate change and natural disasters through adaptation, mitigation, preparedness and prevention". This is the first time climate resilience has been included in the state's land-use planning legislation.

In February 2026, the NSW Government sought feedback on a proposed Climate Change and Natural Hazards State Environmental Planning Policy (SEPP). The Commission's 2026 Heat Stress Spotlight Report identified the draft SEPP as a significant near-term opportunity to embed heat resilience as a core planning requirement, noting that elevating thermal safety through strategic planning reform and urban greening programs across all tiers of the planning system can reduce long-term health, energy and infrastructure costs (Net Zero Commission, 2026b).

How these reforms are implemented will have a material impact on whether NSW can achieve its 2050 net zero emissions target and adapt to a more volatile climate. Effective implementation can also help avoid costly retrofits, stranded assets, and higher costs for vulnerable communities.

Recommendation 1A: The NSW Government should prioritise planning approval for projects that will contribute to meeting emissions reduction targets, in particular renewable energy infrastructure and industrial decarbonisation projects.

Recommendation 1B: The NSW Government should ensure meaningful consideration of NSW's emissions reduction targets in all NSW Government decisions, particularly in planning assessments of coal mine extensions or expansions, and data centres.



Matt Beaver

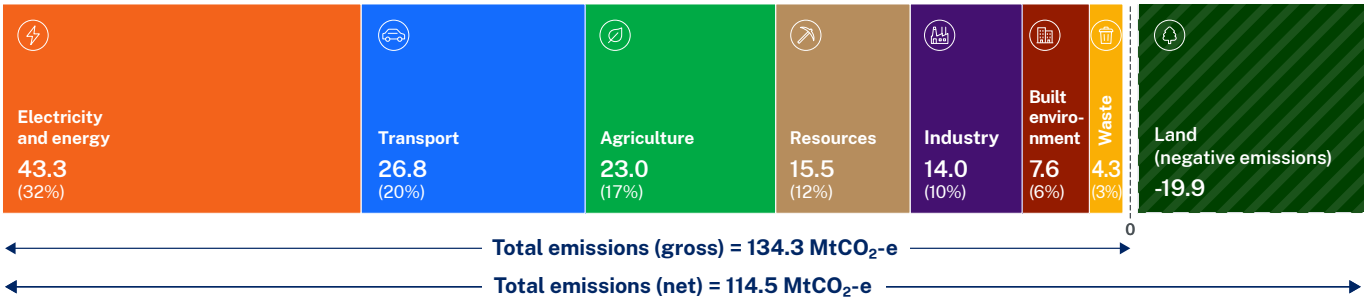
Chapter 2

Accelerating emissions reductions

2.1 Progress towards NSW's legislated emissions reduction targets

NSW is not on track to achieve its legislated targets

Figure 3: NSW whole-of-economy emissions by sector



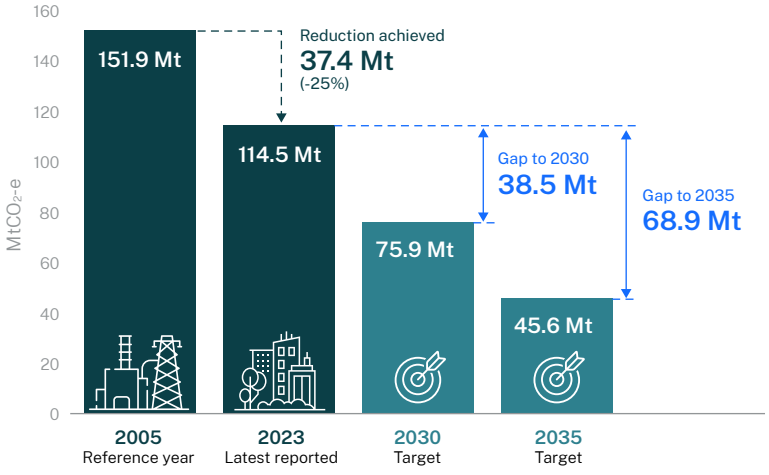
Source: Commission analysis of the 2022–23 inventory (Cth DCCEEW, 2025j).

In 2022–23, NSW's emissions were estimated at 134.3 $MtCO_2$-e excluding the land sector and 114.5 $MtCO_2$-e including the land sector (Figure 3).[5] This is approximately 25% of Australia's total emissions. The electricity and energy sector remained the largest source of emissions, followed by transport and agriculture. The land sector was estimated to have stored 19.9 $MtCO_2$-e of carbon in 2022–23.

The Climate Change Act sets emissions reduction targets for NSW of 50% by 2030 and 70% by 2035, compared with 2005 levels. According to the 2022–23 state and territory greenhouse gas inventories (the inventory), this means reducing annual emissions to 75.9 $MtCO_2$-e by 2030 and 45.6 $MtCO_2$-e by 2035, respectively (Figure 4). All emissions figures drawn from the inventory were calculated by the Commission and are rounded to 1 decimal place.

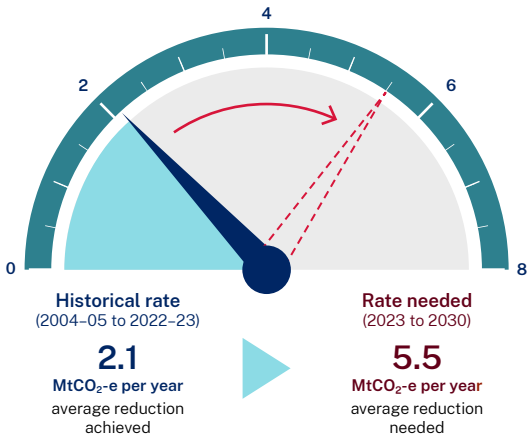
Figure 4: Current status and gaps to legislated targets for 2030 and 2035

NSW Emissions reduction progress and targets



Emissions need to reduce faster

Average decarbonisation rate ($MtCO_2$-e per year)



5 Commission analysis of the state and territory greenhouse gas inventory (Cth DCCEEW, 2025j). The inventory was restructured into the Commission's 8 sectors.

The pace of decarbonisation must urgently increase for NSW to achieve its 2030 target (Figure 4). An average reduction of 5.5 $MtCO_2$-e per year is needed between 2023 and 2030 to deliver the required reduction of 38.5 $MtCO_2$-e. This is 2.5 times faster than the average rate since 2005. A further 30.4 $MtCO_2$-e reduction is needed between 2030 and 2035 to achieve the 2035 target, approximately equivalent to the current combined emissions of the transport and built environment sectors.

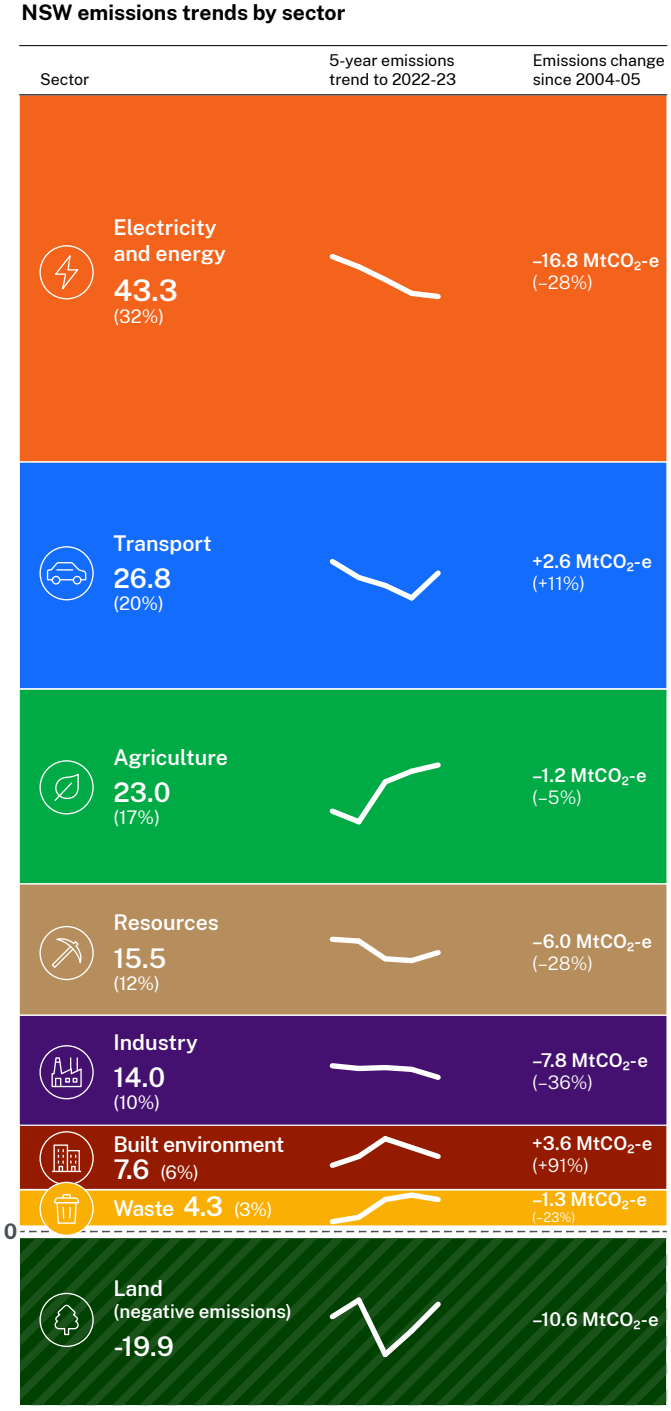
Recent emissions trends have not been in line with the legislated targets. Between 2021–22 and 2022–23, emissions in NSW increased by 7.0 $MtCO_2$-e (7%)[6] as emissions in the transport, resources and agriculture sectors grew and less carbon was stored in the land sector. The largest emissions reduction occurred in the industry sector. Figure 5 shows the breakdown of emissions by sector as reported in the inventory for selected years.

NSW policy needs to do more to bring legislated targets in reach

In the preparation of this report, the Commission reviewed around 200 state and federal policies. Combined with stakeholder consultation and benchmarking against other jurisdictions, the Commission developed a high-level, qualitative assessment of the policy environment in each sector (Figure 6). The assessment reflects the coverage of emission sources and breadth of policy mechanisms in place. The Commission will further develop its assessment methodology, including policy effectiveness, for future reports.

The Commission's assessment is that NSW emissions policy is more developed in some sectors than others, but that it does not yet deliver the rapid emissions reductions required. In some instances, strong policy signals are missing, while in others the commitments are appropriate but there are issues with the speed of implementation or the rollout of funding. These findings are discussed further throughout this chapter.

Figure 5: NSW emissions by sector in 2022–23, with 5-year trend and change from the 2004–05 reference year for legislated targets



Source: Commission analysis of the 2022–2023 inventory (Cth DCCEEW, 2025j).

6 In the 2023–24 inventory, the increase in emissions between 2021–22 and 2022–23 was amended to 14.1 $MtCO_2$-e (13%) (Cth DCCEEW, 2026a). See Box 2 for an explanation of the Commission's approach to assessing progress.

Figure 6: Summary of qualitative assessment of policy across emissions sectors

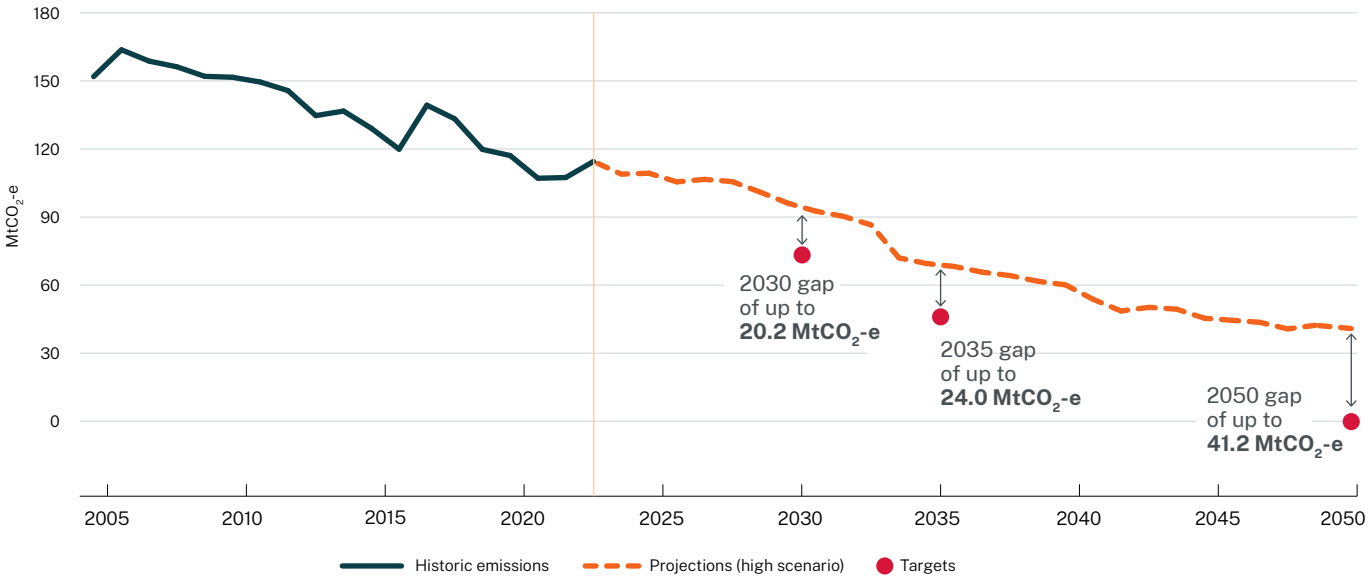
STRONG, ON TRACK	STRONG, DELAYED	PARTIAL	LIMITED
None	Electricity and energy	Transport Resources Industry Built environment Waste	Agriculture Land

NSW Government's emissions projections confirm that NSW is not on track

The NSW Government releases emissions projections annually. The emissions projections are the Government's estimate of potential future emissions and do not represent the view of the Commission.
The latest release of the projections (the 2025 projections) shows that NSW is further off track to meeting its 2030 and 2035 targets compared with the previous release (Figure 7) (NSW DCCEEW, 2026e).

The Government estimates a gap of 10 to 20 $MtCO_2$-e in 2030 and 21 to 24 $MtCO_2$-e in 2035. The previous release (the 2024 projections) estimated a gap of 7 $MtCO_2$-e in 2030, meaning that the NSW Government is forecasting a 2030 gap that has increased by 3 to 13 $MtCO_2$-e. This is mainly because of revised projected emissions in the electricity sector, which the NSW Government expects to deliver most of the emissions reductions to 2030 (NSW DCCEEW, 2026e). Section 2.3 discusses progress in the electricity sector in more detail.

Figure 7: Historical and projected NSW emissions and gap to target



Source: NSW DCCEEW, n.d., 2026e.

Box 2: Approach taken to assess progress

This report assesses progress towards the legislated emissions reduction targets at a whole-of-economy and sector level. The Commission's assessment was informed by the NSW figures from the 2022–23 inventory (Cth DCCEEW, 2025j), stakeholder engagement, and the Commission's research and analysis that includes advice provided during the reporting period. The inventory was recalculated into the Commission's 8 sectors.

Annual updates to the inventory include methodology changes that are applied to historical emissions. This means historical emissions figures may change, including figures for the 2004–05 reference year that NSW's legislated targets are measured against. The 2022–23 inventory updated historical emissions and therefore does not align with the 2021–22 inventory used for the Commission's 2024 Annual Report.

Emissions figures in this report are drawn from the 2022–23 inventory unless otherwise specified as it was the latest inventory available during the drafting of this report and forms the basis for the NSW Government's latest emissions projections (the 2025 projections). Consideration of the NSW Government's 2025 emissions projections, provided to the Commission in May 2026 (and unpublished as of 30 June 2026), has been limited. The 2023–24 inventory was released in May 2026 after the Commission's assessment was completed and was not considered in the development of this report.

The state's emissions are discussed by sector. Sectors are consistent with the Commission's 2024 Annual Report except that the industry and waste sectors are discussed separately. Any discussion of inventory figures refers to the Commission's recalculated sectors.

The Commission is in the process of developing its emissions monitoring framework including NSW decarbonisation pathways which will inform future assessments. This report introduces initial progress indicators and a qualitative assessment of policies to deliver emissions reductions in each sector. See Chapter 6 for more information about the monitoring framework.

Brinae Smith

2.2 Action needed to keep NSW's legislated targets in reach

The new Net Zero Plan must drive accelerated action

Current policies are insufficient to meet NSW's legislated targets. A comprehensive and strategic policy framework is needed to enable the transition to net zero. In 2020, the NSW Government released its Net Zero Plan: Stage 1 outlining key initiatives to drive emissions reductions over the decade to 2030. Programs announced under the plan are generally still underway but despite positive progress the 2025 projections show the plan is not expected to deliver the required step change in emissions by 2030 (NSW DCCEEW, 2026e).

In response to the Commission's 2024 Annual Report, the NSW Government confirmed that a new Net Zero Plan to 2035 will be developed in 2026 with a sector-by-sector approach (NSW DCCEEW, 2025c, 2025h).

This is an opportunity for the NSW Government to set out a comprehensive strategic policy framework for emissions reduction and explain how it plans to deliver it. The plan for each sector should set out the emissions reductions required and include appropriately resourced policy and programs to deliver these reductions, in consultation with communities and industry.

The Commission provided advice to the Minister for Climate Change to inform the development of the updated Net Zero Plan.[7] The Commission identified 3 priority areas where rapid emissions reductions could help keep the 2030 and 2035 targets within reach, and key actions needed to enable longer-term emissions reductions (Figure 8). These should form a core part of the Net Zero Plan and sector plans.

7 Provided in late 2025, the advice pointed to opportunities for accelerated emissions reductions and highlighted four key priorities across the electricity industry, electrification of fossil fuel use, methane emissions and enabling action for further emissions reductions post-2035 (Advice for the Net Zero Plan to 2035 | Net Zero Commission).

Figure 8: Key recommendations in this report for the NSW Government to accelerate emissions reductions

2 Accelerate the electricity sector transition

The electricity sector must deliver a large part of the 2030 and 2035 emissions reduction targets and low emissions electricity is a critical enabler for whole-of-economy decarbonisation.

Accelerating the build out of transmission infrastructure and renewable generation and storage capacity, including consumer energy resources and other types of distributed energy resources, is required to power NSW's net zero transition and facilitate timely coal-fired power station closures.

Eraring power station's closure has already been delayed twice from 2025 to 2027 and then 2029, and it is vital its closure is not postponed further to keep the 2030 target within reach.

Find out more in Section 2.3 Electricity and energy.

3 Accelerate uptake of existing electric alternatives for transport, industry and buildings

Technology to electrify transport, buildings and low to medium-temperature process heat is available and deployment can be accelerated to reduce fossil-fuel use and costs.

As well as reducing emissions, this would give more people access to lower energy bills, cleaner air, more comfortable homes and other benefits.

Find out more in Section 2.4 Transport, Section 2.8 Industry and Section 2.9 Built environment.

4 Significantly reduce methane emissions

Methane is a potent greenhouse gas and avoiding its release makes an outsized contribution, including to the state's emissions targets. Reducing methane emissions must be a key priority for emissions policy.

There are avoidance and abatement options available now for many methane sources. Emerging pollutant policy frameworks can be leveraged or reformed to reduce methane emissions from landfills, coal mines and livestock.

Find out more in Section 2.5 Agriculture, Section 2.7 Resources and Section 2.10 Waste.

5 Strengthen the policy environment for longer-term emissions reductions across sectors

The transition to net zero requires policy clarity, policy stability and strategic long-term planning. Across sectors, action is needed to develop technologies, policies and markets that enable NSW to achieve net zero by 2050.

Find out more in Section 2.2 and throughout Chapter 2.

Stronger policy is needed to achieve longer-term emissions reductions

> **"Innovation and R&D are critical to achieving net zero, but their value depends on system readiness, governance alignment, and the ability to scale outcomes equitably."**
>
> Individual submission to the Commission's 2025 consultation

NSW's transition to net zero is an opportunity to attract both domestic and international capital, establish new industries, drive job creation and support local and regional communities. Decarbonisation can benefit NSW but requires policy clarity and stability supported by sufficient resourcing.

In some industries, abatement technologies are not yet mature, such as feed additives for livestock or biofuels for aviation, and early policy signals and innovation support are needed to develop solutions (NSW DPIRD, 2025).
In others, clarity is needed on the level of ambition and timeframes for decarbonisation. Regions with ageing coal power stations or growing renewable energy developments will need support for structural transformation (NZEA, 2025; Community Power Agency, 2025). Across sectors, stakeholders noted the importance of enablers and effective support for decarbonisation technologies at different levels of commercial readiness.

Economy-wide, coordinated action is needed

The transition needs strong private sector investment support and skills development

To deliver the abatement required, investment in decarbonisation must increase rapidly. BloombergNEF analysis suggests that for Australia to achieve net zero by 2050, annual investment and spending on the energy transition will need to double between 2025 and 2030, with the most significant growth required in electrified transport and renewable energy (BloombergNEF, 2026b). Much of this spend will be required regardless of emissions reduction targets because ageing infrastructure, vehicles and equipment need to be replaced.

Private finance is crucial given the scale of innovation, commercialisation and investment necessary to drive economic growth and support the transition to net zero (Cth Treasury, 2024c). Experience from the electricity sector shows that transformational change requires a coordinated package of policies, targeted public investment and market interventions.

The key challenge is managing upfront costs and directing replacement towards low emissions options, while enabling NSW businesses to capture opportunities in green manufacturing and emerging low carbon supply chains (ECA, 2026; BZE, 2024). Investment in decarbonisation, including renewable energy projects, can support employment and regional outcomes, for example through income diversification and supporting an estimated 318,000 renewable energy jobs in NSW by 2050 (Accenture, 2023; Hay Shire Council & The Next Economy, 2026).

System upgrades, electrification and new low carbon industries will increase demand for skilled labour, particularly in engineering, electrical trades, construction and advanced manufacturing. This increases pressure on education and training systems to scale quickly and align skills with industry needs but is a key opportunity for fossil fuel workers to transition to skilled low-carbon careers (Accenture, 2023).

State and national policy must be aligned with emissions objectives

Harmonising Commonwealth, state and local government policy frameworks could improve the efficiency of, and unlock greater investment in, economy-wide decarbonisation (Productivity Commission, 2025b). This includes amending policies and incentives that may present barriers to emissions reductions and closing policy gaps.

> **“Harmonisation of policies, legislation and regulation between the federal government and NSW is critical to ensure emission reduction projects are effectively supported.”**
>
> LMS Energy submission to the Commission’s 2025 consultation

The Commonwealth Government’s funding, financing, investment attraction, tax settings, and regulatory powers will influence the NSW emissions trajectory and whether the transition is smooth, equitable and economically prosperous for NSW. The NSW Government should continue to advocate for reform of Commonwealth policies, settings and funding arrangements that supports its legislated targets and the adaptation objective. It has been successful at this in the past, including through the Energy and Climate Change Ministerial Council, such as for Minimum Energy Performance Standards.

The Safeguard Mechanism remains the primary Commonwealth policy constraining emissions from NSW’s large industrial facilities, mines, gas networks and landfills that emit more than 100,000 tCO_2-e per year. Reforms to the Safeguard in 2023 (Cth DCCEEW, 2025h) strengthened incentives for emissions reductions but requirements are not sufficient to achieve NSW targets. Compliance with the Safeguard does not always result in emissions reductions in NSW as facilities can use carbon credits which may originate from interstate.

An example of misaligned policy is the Commonwealth Fuel Tax Credit (FTC) scheme. By providing refunds for the tax (fuel excise) paid on fuel used in certain types of vehicles and machinery (ATO, 2024), the FTC scheme incentivises the use of emissions-intensive technology and slows the uptake of lower-emissions alternatives. This is particularly problematic in the transport and resources sectors and is discussed further in Sections 2.4 and 2.7 respectively.

Current FTC arrangements do not support NSW and Commonwealth emissions reduction targets. Both the Commonwealth Productivity Commission and the Organisation for Economic Co-operation and Development (OECD) have recommended reform to the FTC scheme (OECD, 2023a; Productivity Commission, 2025b). Scheme reform should consider the context of global oil price spikes associated with the Iran war and cost pass-through to consumers.

Recommendation 5E: The NSW Government should lead advocacy for Commonwealth policy changes that support and drive emissions reductions, such as fuel tax credit reform.

Emissions transparency must improve to deliver net zero plans

Delivering an ambitious emissions reduction plan depends on transparency about the emissions impacts of public, private sector and consumer decisions. Transparent emissions reporting through accurate, accessible and standardised methodologies can support action across sectors, such as on emissions embedded in building materials, and helps manage trade-offs (GBCA & TSA Riley, 2025; Romijn et al., 2018).

Better and more timely NSW emissions data is needed. Across sectors there are data gaps and much of the emissions inventory is based on modelling and estimates (Cth DCCEEW, 2025e, 2025f). Section 2.8 discusses gaps in the industry sector. Improved data would also support private and public entities' performance benchmarking and reporting, including climate-related financial disclosures (Vitali-Lawn, 2025). Due to changing methodology, estimates can also vary significantly from year to year, as discussed in Section 2.6. Initiatives such as the establishment of a NSW methane monitoring network and the Guarantee of Origin for electricity and selected industrial products do not provide sufficient coverage or are voluntary.

Recommendation 1C: The NSW Government should improve the availability of verified emissions data to enable more accurate monitoring and reporting across supply chains and better inform government and private sector decision-making.

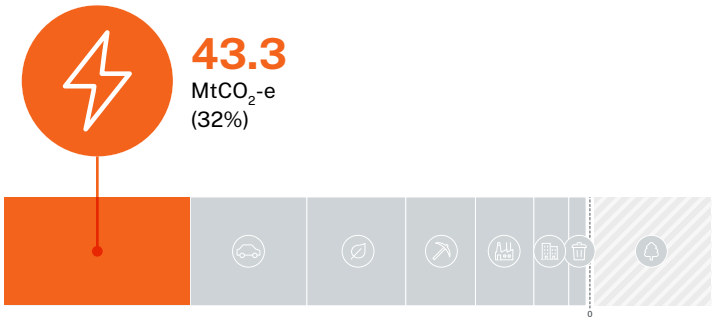
Current emissions policy does not include a plan for residual emissions

NSW should develop a plan to minimise and address any residual emissions that are not directly abated. This should include considering the role of engineered removals and whether policy measures are required to support them.

Land-based removals are constrained, uncertain and increasingly exposed to climate risk as set out in Section 2.6. NSW cannot rely on the land sector acting as a carbon sink to offset continued emissions in other sectors, because sequestration is vulnerable to reversal from fire, drought and ecosystem degradation.

Recommendation 5G: The NSW Government should develop a credible residual emissions strategy that prioritises avoidance and reduction, establishes a clear role for carbon removals and minimises the use of offsets by focusing on mechanisms to reduce direct emissions.

2.3 Electricity and energy sector

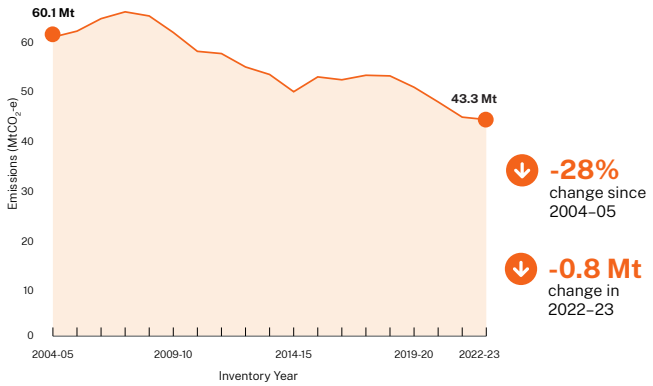


Emissions overview

Electricity is the largest source of emissions in NSW. The sector's emissions come almost entirely from fossil-fuel based electricity generation, most of which is from coal power generation. The Eraring Coal Power Station was the source of 27% (11.9 $MtCO_2$-e) of the electricity sector's emissions in 2022–23.

Emissions over time ($MtCO_2$-e)

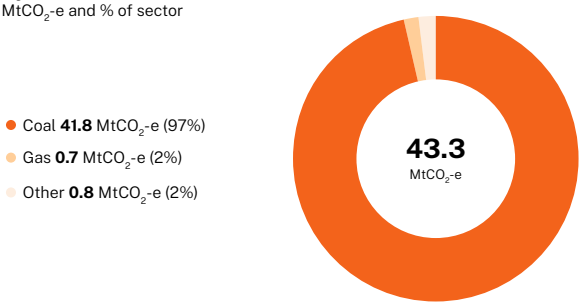
The electricity and energy sector generated 43.3 $MtCO_2$-e in emissions in 2022–23. Emissions have decreased by 16.8 $MtCO_2$-e since 2004–05 (a 28% reduction), and 0.8 $MtCO_2$-e (1.8%) from 2021–22. 2022–23 is the fifth consecutive year of decreasing emissions in the sector.



Source: Commission analysis of the 2022–23 inventory (Cth DCCEEW, 2025j).

Composition of 2022–23 Emissions

By Sub-sector
$MtCO_2$-e and % of sector



Sums may not add up to 100% due to rounding.

Coal power generated **97%** of the electricity and energy sector's emissions in 2022–23.

Source: Open Electricity (2026).

Electricity remains the largest source of emissions in NSW. It is also the sector that is projected to contribute the most to achieving the 2030 and 2035 legislated targets (NSW DCCEEW, n.d.). While emissions in the sector continued on a downward trajectory since the 2024 Annual Report, much more rapid decreases are required to keep NSW's legislated targets within reach. The electricity sector's transition away from fossil fuel-based generation also underpins emissions reductions in other sectors through electrification.


Eraring Power Station

Coal-fired power stations must close as soon as possible to achieve NSW's legislated emissions reduction targets

Of prime importance is the timely closure of the coal-fired power stations that generate the vast majority of the sector's emissions. In January 2026, the planned closure of Eraring Power Station was delayed from August 2027 to April 2029 (Origin Energy, 2026). The plant had originally been proposed for closure in 2025. This latest extension is likely to lead to significant additional emissions. Eraring was the source of 27% (11.9 $MtCO_2$-e) of the electricity sector's emissions in 2022–23,[8] and emissions were even higher in 2024–25, at 13.5 $MtCO_2$-e (Clean Energy Regulator, 2026a). It is crucial that there are no further delays to Eraring's closure.

Coal-fired power station closures depend on the construction and commissioning of sufficient alternative generation, storage and transmission to ensure electricity system reliability. There also needs to be new infrastructure to maintain system security and stability which were historically provided as a by-product of fossil-fuel based generation (AEMO, 2025b).[9]

More renewable generation and storage needs to be constructed

Consistent and significant increases in the pace of construction of renewable capacity year-on-year will be needed to facilitate the closure of fossil fuel-based generation and keep NSW's legislated targets within reach. Construction of storage also needs to accelerate to ensure power from renewable generation is available when needed. The Energy Security Corporation, established by the NSW Government in 2024 with $1 billion of seed funding to accelerate clean energy projects, announced its first investment of $100 million in 4 large-scale battery projects on 16 June 2026.[10] Deployment of the remaining seed funding could help projects secure finance.

Despite a supportive policy environment for renewable generation with the NSW Electricity Infrastructure Roadmap (Roadmap) and Commonwealth Capacity Investment Scheme, the build rate is slower than needed. As of December 2025, there was a 7.9 GW gap to the 2030 Roadmap target of 12 GW. Meeting the target will require the renewable generation commissioned each year to nearly double from current rates.[11]

8 Commission analysis of National Greenhouse and Energy Reporting electricity generation emissions data 2022–23. Proportions allocated to generation types using inventory data (Clean Energy Regulator, 2024; Cth DCCEEW, 2025j).

9 For example, Transgrid has shortlisted nine utility-scale battery storage projects totalling up to 2 GW to provide critical system strength services to the NSW transmission network. The grid-forming battery systems are expected to begin coming online in the second half of 2026 as part of Transgrid's broader System Strength Plan, which is targeting 5GW of grid-forming battery storage systems along with ten synchronous condensers on the backbone network. See Transgrid finalises system strength plan to unlock renewable energy rollout | Transgrid.

10 Energy Security Corporation's first investment backs major NSW battery platform | NSW Government.

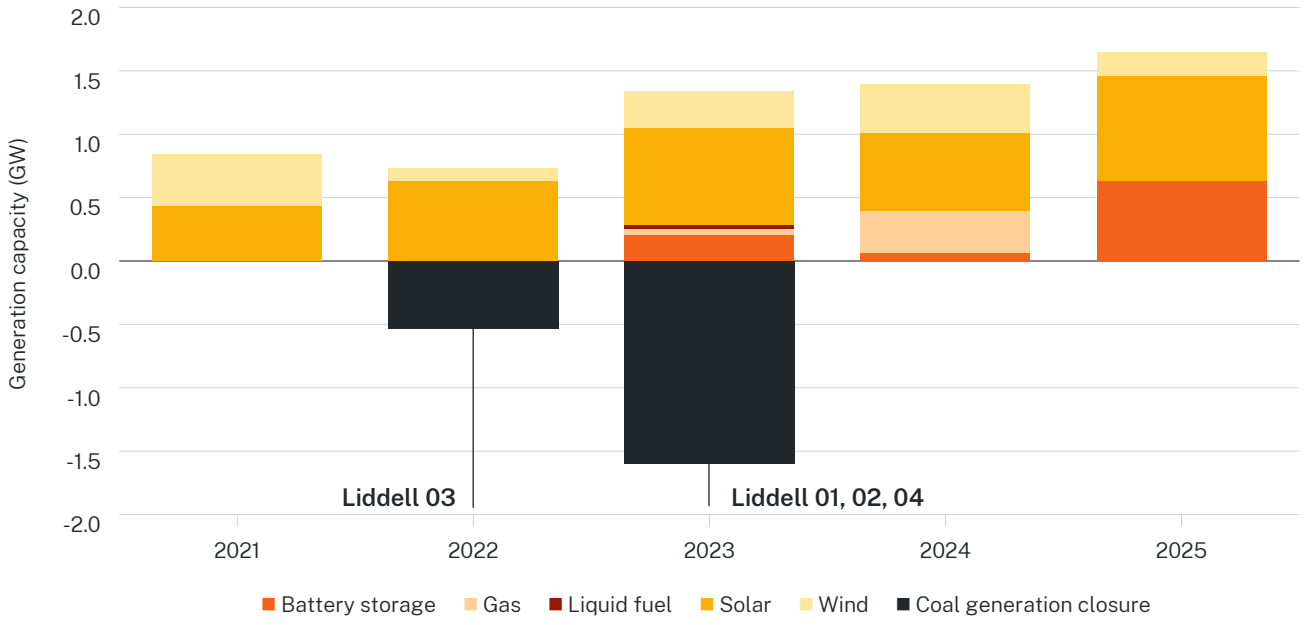
11 Commission analysis of NSW DCCEEW data.

Box 3: Clean energy capacity is growing, putting downward pressure on prices

In the 2 years from January 2024 to December 2025, 2,030 MW of new large-scale renewable generation capacity, 685 MW of battery storage and 330 MW of gas generation capacity started operating in NSW (Figure 9).[12] In 2025 the largest amount of large-scale renewable generation and storage capacity was brought into service to date, with a 55% increase compared with 2024.[13] In addition to emissions benefits, accelerating the renewable build out will also put downward pressure on electricity bills.[14]

Wholesale electricity prices fell by almost 50% in Q4 2025 compared with Q4 2024, due to continued record renewable output, higher battery discharge, and reduced reliance on coal and gas (AEMO, 2026b). Consistent with this, the maximum electricity price for NSW residential customers on standing offers set by the Default Market Offer will fall by 3.4–7.7% and for small business by 9–20.9% from 1 July 2026 (AER, 2026b). A recent study confirmed renewables remain the lowest-cost new generation in the National Electricity Market and that wholesale generation costs would be around 30–50% higher under a coal- and gas-only scenario (Simshauser & Gilmore, 2025).

Figure 9: NSW new and retired utility-scale generation and storage capacity 2021–2025



Source: NSW DCCEEW analysis.

12 Analysis by NSW DCCEEW.
13 Analysis by NSW DCCEEW.
14 The Productivity Commission estimated that at the national scale, a "one-year acceleration for new wind farms and key transmission could cut electricity bills by 7% over a decade" (Productivity Commission, 2025b, p. 1).

Intervention is required to speed up all project phases

Projects continue to face delays in securing planning approval, securing finance, and in construction and commissioning. This is in part driven by the large pipeline of increasingly complex projects under assessment and opposition from segments in the community. However, inflationary and supply chain pressures and reliance on transmission projects that have an uncertain delivery timeframe also play a role. Decisive action now is required to keep Roadmap targets within reach.

NSW planning assessments take longer than in other states

Calculations of planning approval timeframes vary, but there is consensus that NSW timeframes are slower than other states (CEIG, 2026). While planning assessments are generally completed within benchmark timeframes, more detailed planning requirements have led to projects needing longer to prepare proposals.[15]

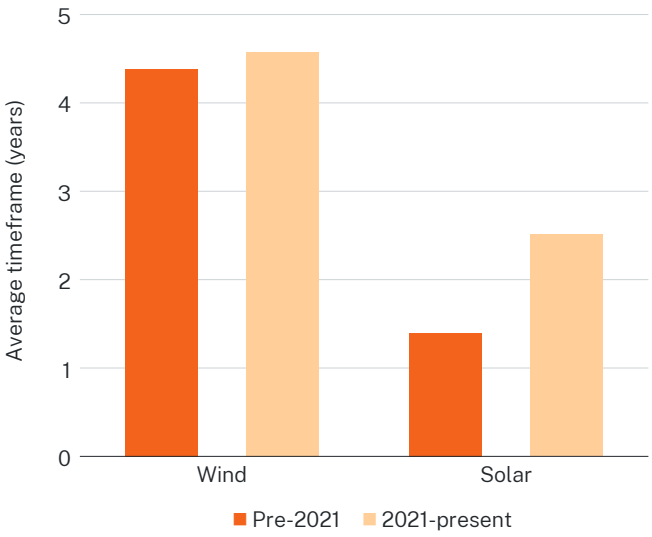
Since the Commission's 2024 Annual Report, the NSW Government introduced reforms to accelerate planning assessments for renewable energy projects. These include creating the Investment Delivery Authority and finalising the Renewable Energy Planning Framework in late 2024 (Investment NSW, 2025b; NSW DPHI, 2024b). An early survey suggests that the industry views the impacts of these reforms as neutral or positive (Herbert Smith Freehills Kramer, 2025).

In May 2026, the NSW Government introduced legislative amendments to support priority energy projects through the planning system via the *Energy Legislation Amendment (Prioritising Renewable Energy) Bill 2026* (NSW).[16] As of 30 June 2026, these amendments are still progressing through Parliament.

Delays in securing project finance slow down the transition

Projects face delays in securing finance after planning approval is granted, and some do not proceed. On average, solar projects since 2021 have taken more than 2 years to progress from planning approval to financial close – almost double the pre-2021 timeframe – while wind projects have consistently taken over 4 years (Figure 10).

Figure 10: Average wind and solar project completion time from planning approval to financial close in NSW, pre-2021 averages compared with 2021-present averages



Source: NSW DCCEEW analysis.

According to Nelson et al. (2025), developers require long-term contracts to secure finance, but electricity buyers are unwilling to make long-term commitments because of technological, regulatory and demand-related uncertainties. This is a particular challenge for wind projects. Over the last 3 years, power purchase agreements for wind projects in NSW have shifted toward smaller contracted volumes and shorter terms compared with earlier years, reducing long-term revenue certainty and in turn making securing finance more difficult.[17]

15 Preparation and submission of the Environmental Impact Statement (EIS) was cited as the cause of the greatest delay under the State Significant Development pathway by 47% of 58 survey respondents in a study conducted by Herbert Smith Freehills Kramer (Herbert Smith Freehills Kramer, 2025).

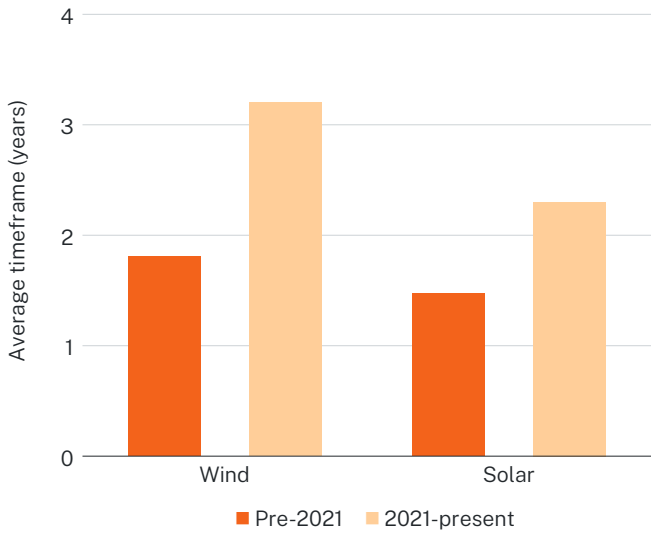
16 Schedule 1, clause [1], available at https://www.parliament.nsw.gov.au/bills/Pages/bill-details.aspx?pk=18899. Projects that can be declared as priority projects include transmission and distribution infrastructure, renewable energy generation, battery storage, pumped hydro and gas-fired firming generation.

17 Commission analysis of BloombergNEF Corporate Power Purchase Agreement data.

The average construction period has lengthened

Once projects reach financial close, supply chain constraints and technical challenges are also delaying construction. The Clean Energy Council found that solar projects in NSW took an average of 22 months, and onshore wind projects an average of 31 months between financial commitment and commissioning, similar to other states (Clean Energy Council, 2025). NSW DCCEEW calculated that since 2021, the average time between financial close and operation has lengthened for both wind and solar projects in NSW. During this period, solar projects have taken just over 2 years from financial close to operation on average, while wind projects have taken more than 3 years on average (Figure 11).[18]

Figure 11: Average wind and solar project completion time from financial close to commissioning in NSW, pre-2021 averages compared with 2021-present averages



Source: NSW DCCEEW analysis.

Transport logistics present a significant challenge, particularly for wind projects. In the Central-West Orana REZ (CWO REZ), road upgrades are required at 19 locations to allow transport of wind turbine components. They are expected to take around 15 months (Transport for NSW, 2024a). Uungula wind farm's 69 turbines will require more than 700 oversized journeys, some under NSW police escorts. This is expected to take another 12 months (Parkinson, 2026).

Workforce pressures and housing constraints add further delay risk. The Australian electricity sector workforce must double to 66,300 workers by 2029 under the Australian Energy Market Operator (AEMO) Step Change scenario and skills shortages are identified as a material risk to projects (Rutovitz et al., 2024). The NSW Government has acknowledged that a lack of suitable housing for construction workers in REZ regions threatens project delivery timelines (including for transmission projects, discussed further below). This prompted it to introduce a new planning pathway under the State Environmental Planning Policy (Housing) 2021 in late 2024 to streamline approval of worker housing (NSW DPHI, 2024c).

Delays to transmission projects continue to be a risk to emissions reductions

Renewable generation and storage projects depend on timely construction of transmission to secure financial backing, begin construction and export electricity to the grid. The Commission's 2024 Annual Report highlighted delays to transmission projects and they continue to be a significant bottleneck (Clean Energy Investor Group, 2025). All of the major transmission projects in or connecting to NSW have been delayed, including HumeLink (by 2 years), Project EnergyConnect (by 3 years), and the Victoria to NSW Interconnector West (by 2 years) (Clean Energy Investor Group, 2025).[19]

18 NSW DCCEEW analysis.

19 Construction of Project EnergyConnect has now been completed and is in the process of being energised. Source: EnergyConnect powers up as clean energy transition forges ahead | Transgrid (10 June 2026).

Matt Beaver

The CWO REZ transmission project is currently on track, but the project's expansion meant the original 3 GW planned capacity did not meet its target completion date of late 2025 (Clean Energy Investor Group, 2025; Net Zero Commission, 2024).

In April 2025, ACEREZ was awarded the contract to construct the CWO REZ transmission network, providing over 4.5 GW of new network capacity by 2028 to connect 7.7 GW of wind and solar in the CWO REZ to the grid (NSW DCCEEW, 2025g). However, the 5 GW Hunter Transmission Project must also be completed to allow customers in the Sydney Basin to access this capacity because of transmission transfer limits. This project is currently estimated to be in service by summer 2029–30 (NSW DCCEEW, 2025a). Its timely completion is required to allow Eraring Power Station to close. Further delays to transmission projects pose a significant risk to meeting the 2030 and 2035 legislated targets.

Recommendation 2A: The NSW Government should reduce barriers to renewable generation, storage and transmission delivery throughout planning, financing and construction phases.

Community acceptance remains a key challenge

> **"Community resistance to wind and solar farms remains a significant hurdle, and this resistance is often rooted in poorly executed consultation processes like those that are rushed, superficial, or fail to genuinely consider local concerns.**
>
> **When communities feel genuinely consulted and see tangible benefits [...] they are more likely to support projects rather than oppose them through legal or political channels."**
>
> The Climate Centre submission to the Commission's 2025 consultation

Community support underpins the success of renewable generation and transmission projects around Australia (ANU, 2024).[20] Polling indicates that 62 to 69% of people in regions identified for new energy development around Australia support renewables development (Renew Australia For All, 2025; 89 Degrees East, 2024; see also Archer & Matthee, 2025).

20 Cited by (Climate Change Authority, 2025), full source document no longer available.

Matt Beaver

But real community opposition to renewables development must also be acknowledged (Legislative Council Portfolio Committee No. 4 – Regional NSW, 2025; see also Buckley & Colvin, 2026). Any failure to ensure strong community engagement and social licence can lead to delays and increase project costs.

Since 2020, 80% of wind and 60% of solar proposals in NSW have received more than 50 unique opposing public submissions and been referred to the IPC as a result (Cotton et al., 2025). This adds additional time to the planning assessment process and proponents have argued that submissions from long distances away from the projects are significant in driving these referrals (Cropp & Macdonald-Smith, 2025; Karp, 2025).

In 2025, the NSW Government published the Strategic Benefit Payments Guidelines to establish a framework for eligible landholders who host transmission infrastructure to receive compensation, paid out over a 20–year period (EnergyCo, 2026b). In REZs, EnergyCo uses fees from generators and storage projects to fund community and engagement programs in the local area (EnergyCo, 2026c). It is not clear how successful these are in building community support. All governments have now endorsed the First Nations Clean Energy Strategy (Cth DCCEEW, 2024g) and NSW has developed guidance for how developers should engage with First Nations communities (NSW DCCEEW, 2026b) (see further discussion in Section 4.2). First Nations communities could play a greater role in renewable energy development (Dunn, 2025; NSW Aboriginal Land Council, 2025).

In the CWO REZ, the most advanced of the REZs, significant community concerns have been expressed about the economic, social and environmental impact of development as well as insufficient community consultation, planning and coordination (Legislative Council Portfolio Committee No. 4 – Regional NSW, 2025). NSW Government should monitor community sentiment and work to improve how developers engage with communities and address concerns. This could include innovative benefit sharing such as energy bill benefits for vulnerable households in REZs.

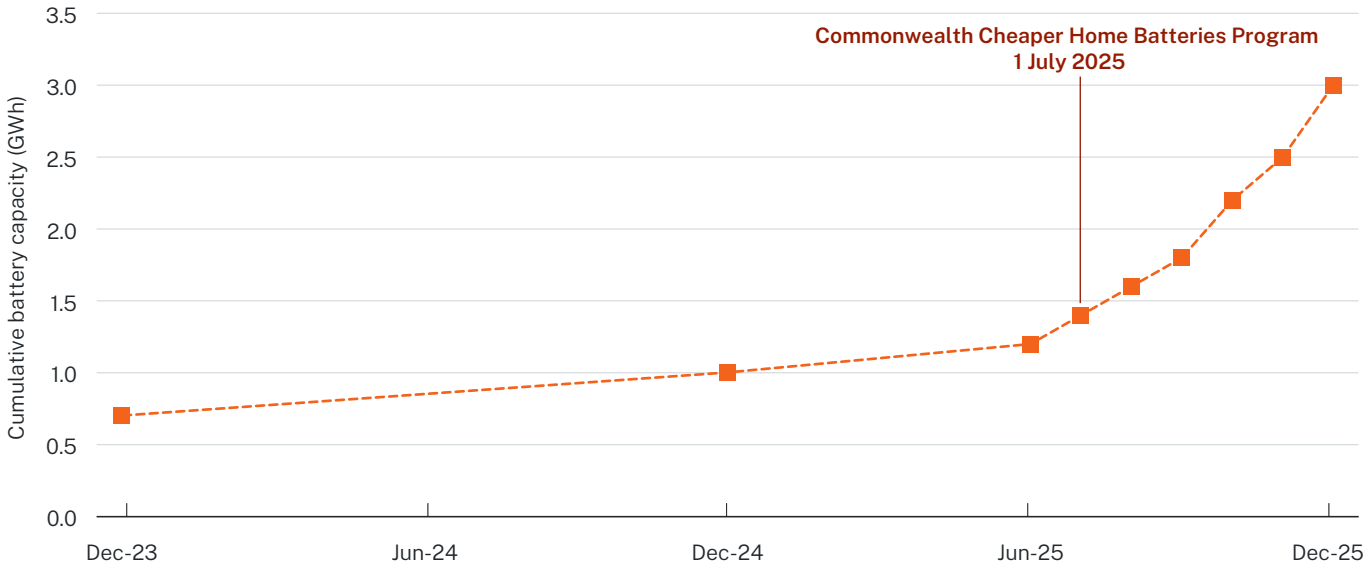
Recommendation 2B: The NSW Government should improve host communities' support for new renewable energy and transmission infrastructure, including by requiring meaningful engagement and ensuring benefits to the regions.

Uptake of consumer energy resources has increased and should continue to be supported

Consumer energy resources (CER) have absorbed most electricity demand growth in recent years (NSW EPA, 2025e). In Q1 2026, rooftop solar offset underlying electricity demand growth even as this demand reached a record high (AEMO, 2026a). The installed capacity of CER continues to grow. Rooftop solar contributed 13% of NSW's total generation in 2025 (Open Electricity, 2026). As of 30 April 2026, 8.3 GW of rooftop solar capacity has been installed in NSW since 2001, with approximately half of this (4.7 GW) installed between 2021 and 2025. However, the rate of new installations dropped from 1 GW in 2024 to around 800 MW in 2025.[21]

The idea of urban REZs could be further leveraged to promote CER integration. The Illawarra REZ is NSW's first urban REZ, building on a Memorandum of Understanding between EnergyCo and Endeavour Energy signed in May 2025 (EnergyCo, 2026a). The Committee for Sydney has proposed that Sydney be conceptualised as a REZ to leverage its potential to host significant CER and other types of distributed energy resources (DER)[22] capacity close to demand, using available capacity in the distribution network and reducing pressures on regional energy infrastructure (Committee for Sydney, 2025).

Figure 12: Cumulative household battery capacity in NSW (December 2023 to December 2025), showing impact of the Commonwealth's Cheaper Home Batteries Program



Source: NSW DCCEEW data and Clean Energy Regulator data (Clean Energy Regulator, 2026b).

21 NSW DCCEEW analysis of Clean Energy Regulator data (Clean Energy Regulator, 2026b).

22 Other types of DER are resources not owned by consumers, for example, community batteries or solar panels on leased industrial roof space.

There was a significant increase in household battery capacity installed in NSW in 2025, largely due to the Commonwealth's Cheaper Home Batteries Program (CHBP) which started on 1 July 2025 (Figure 12). Cumulative household battery capacity in NSW increased rapidly from 1.2 GWh in June 2025 to nearly 3 GWh as of 31 December 2025.[23] There were about 181,500 small scale batteries in NSW as of 31 December 2025, of which about 69,500 were installed between July and December after the CHBP became available.[24]

Orchestration of CER is an opportunity for system owners to generate revenue while supporting electricity reliability and security. NSW DCCEEW estimates that 17% (31,300) of NSW home and small business batteries were participating in dispatchable virtual power plant schemes with a total nominal dispatchable capacity of around 157 MW as of 31 December 2025.[25] Increasing participation, transparency, visibility and coordination of CER could be strengthened through existing mechanisms, such as the Consumer Energy Strategy and Peak Demand Reduction Scheme (PDRS).

Recommendation 2C: The NSW Government should improve energy efficiency of existing facilities and buildings, and accelerate uptake and orchestration of distributed energy resources to put downward pressure on energy bills and reduce the need for large-scale generation, storage and transmission.

23 Source: NSW DCCEEW data and Clean Energy Regulator data (Clean Energy Regulator, 2026b).
24 Source: NSW DCCEEW data and Clean Energy Regulator data (Clean Energy Regulator, 2026b).
25 Source: NSW DCCEEW data and Clean Energy Regulator data (Clean Energy Regulator, 2026b).

Box 4: Growing demand from data centres requires good policy design

Data centres are a new and fast-growing source of electricity demand that could have ramifications for the electricity sector's transition. By 2035, AEMO forecasts data centres will add 8 TWh to annual NSW electricity demand, equivalent to 13% of current demand.[26]

Good policy design can enable data centre growth in NSW while protecting progress towards legislated emissions targets, supporting the electricity transition, and safeguarding the interests of energy consumers and the broader community. The Commission recommends that the NSW Government introduces 4 principles to guide data centre development in NSW and advocates for their adoption as national principles.

1. Data centres should fund new renewable energy generation commensurate with their demand, ensuring genuine additionality.
2. Data centres should actively contribute to grid reliability by limiting energy consumption during peak periods and offering demand response capacity during system stress events.
3. Data centres should meet world-leading standards for energy and water efficiency, with ongoing public reporting to ensure compliance.
4. The most suitable location for data centres should be determined, with regional locations actively considered where workloads are not genuinely latency-sensitive.

It would be appropriate for these principles to apply to any major sources of new demand moving forward.

Recommendation 2D: The NSW Government should ensure new industrial loads, especially data centres, rely on additional renewable energy sources and support the timely closure of coal power stations.

Electricity and energy sector policy assessment

STRONG, ON TRACK | **STRONG, DELAYED** | PARTIAL | LIMITED

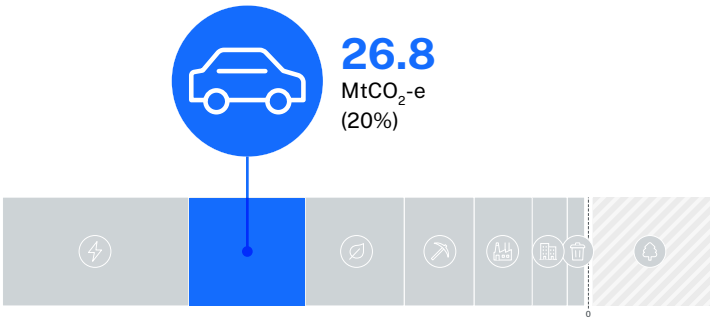
- ✓ Clear ambition and policy frameworks in place to support the construction of renewable generation, storage and transmission
- ✓ Uptake of CER has increased, but access remains uneven and orchestration would benefit consumers and the energy system
- ? Growing demand from data centres requires good policy design
- ✗ Despite policy support, large-scale renewable projects are being built more slowly than required, and transmission projects are significantly at risk
- ✗ Ongoing challenges in securing community support for renewables and transmission projects despite broad support for renewables in regional areas

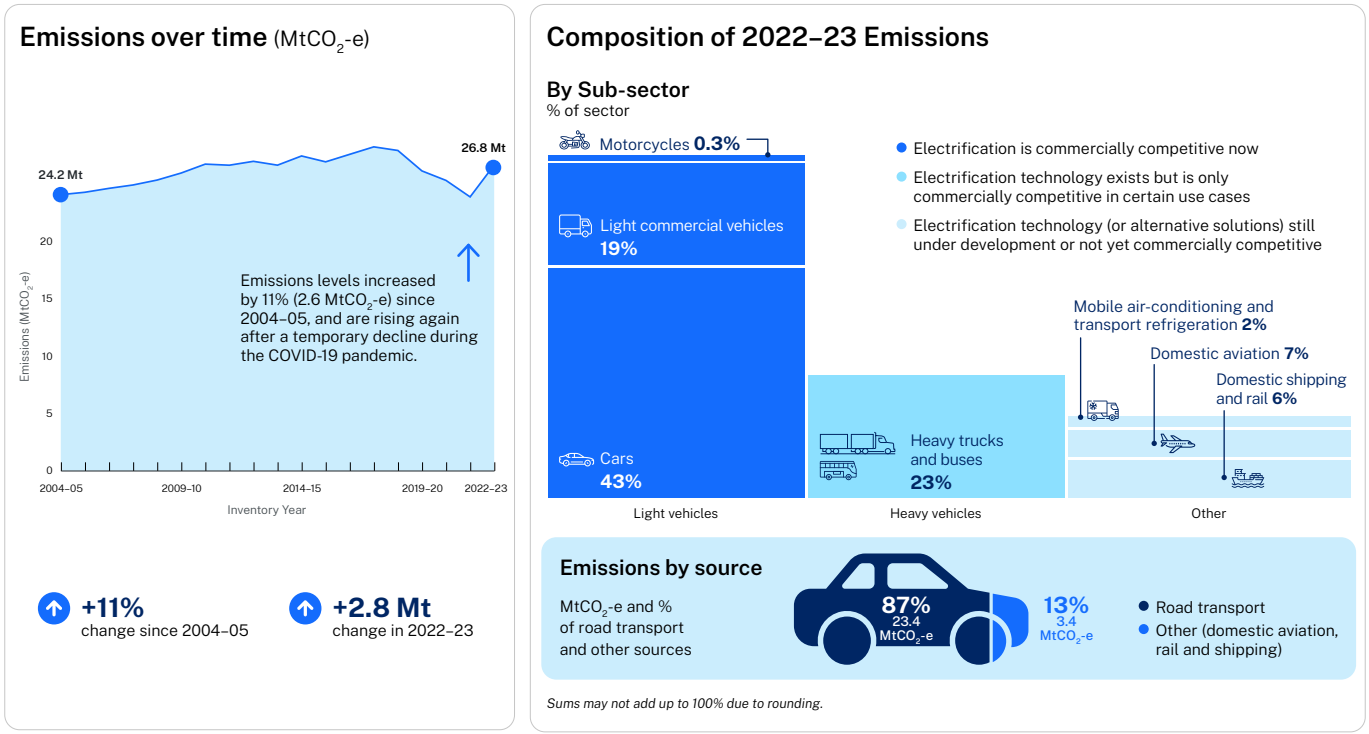
26 Commission analysis of AEMO's 'Step Change' scenario (AEMO, 2025a).

2.4 Transport sector

Emissions overview

Transport sector emissions are almost exclusively from the combustion of liquid fossil fuels (i.e. diesel and petrol), with the majority of those emissions from road transport.



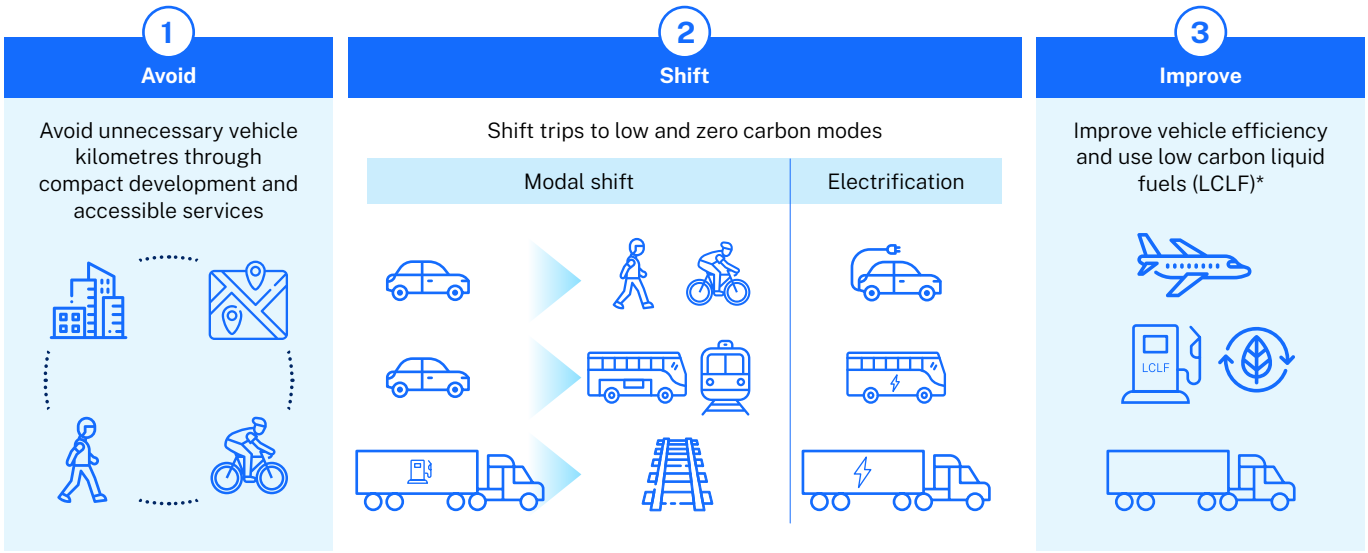


Source: Commission analysis of the 2022–23 inventory (Cth DCCEEW, 2025j).

NSW transport emissions have increased by 11% since 2004–05, reflecting the need for a holistic approach to decarbonising the transport sector. Most emissions are from light vehicles (63% or 16.8 $MtCO_2$-e), where electrification offers significant near-term decarbonisation potential. Outside of light vehicles, transport emissions come from heavy vehicles (23% or 6.1 $MtCO_2$-e), domestic shipping and rail (6% or almost 1.7 $MtCO_2$-e), domestic aviation (7% or 1.7 $MtCO_2$-e)[27] and mobile air-conditioning and transport refrigeration (2% or 0.5 $MtCO_2$-e). Reducing vehicle kilometres travelled through modal shift and better integration of transport and land-use planning is important to decarbonise the transport sector as a whole (Figure 13) (IPCC, 2023).

27 The similarity in reported emissions in $MtCO_2$-e between domestic aviation and domestic shipping and rail is due to rounding.

Figure 13: Holistic approach to reducing transport emissions



* Where electrification is not yet feasible

Source: Adapted from UN's global transport decarbonisation framework (UNECE Inland Transport Committee, 2024).

Electrification of light vehicles

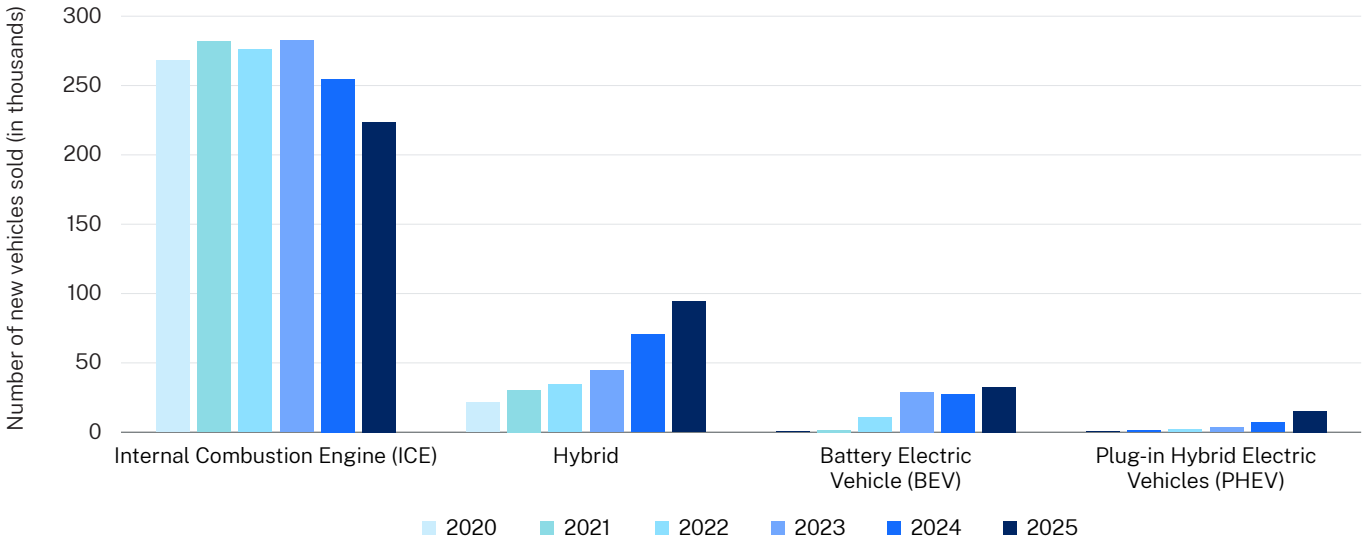
NSW's biggest near-term impact to reduce transport emissions is from accelerating the electrification of light vehicles

Light vehicles account for 63% of the transport sector's emissions and electrifying them is the largest near-term opportunity to cut emissions. Battery Electric Vehicle (BEV) sales increased more than 60-fold between 2020 and 2025 (511 sold in 2020 compared to 32,524 in 2025)[28] supported by a growing variety of models (Transport for NSW, 2019), improved performance and range and increasing cost competitiveness. There was a 17% decrease in new internal combustion engine (ICE) vehicle sales over the same period (Figure 14). However, ICE vehicles were still the vast majority of new car sales in NSW, followed by hybrid vehicles. In 2025, BEVs were only 9% of all new car sales and plug-in hybrid electric vehicles (PHEVs) 4%.[29]

28 TfNSW analysis of sales data from FCAI VFACTS and the EVCs Vehicle Sales Report.

29 TfNSW analysis of sales data from FCAI VFACTS and the EVCs Vehicle Sales Report.

Figure 14: New vehicle sales by fuel type in NSW, 2020–2025 (excludes hydrogen fuel cell vehicles)



Source: TfNSW analysis of sales data from FCAI VFACTS and the EVC Vehicle Sales Report

Pressure on global oil supply because of the US-Iran conflict has strengthened both consumer interest in electric vehicles (EVs) and the political case for faster electrification in NSW (Morris & Rimrod, 2026). Reflecting global fuel prices under pressure and international uncertainty, the NSW Government emphasised when releasing the 2026 NSW electric vehicle Strategy that accelerating EV uptake "has never been more important" (NSW Government, 2026d). The fuel price situation led to rapid growth in EV uptake in early 2026, with BEVs reaching a record ~17% of all new light vehicle sales in April 2026, more than double their 2025 share, and 7% higher than March 2026.[30] It is important that EV charging infrastructure keeps pace with rising demand.

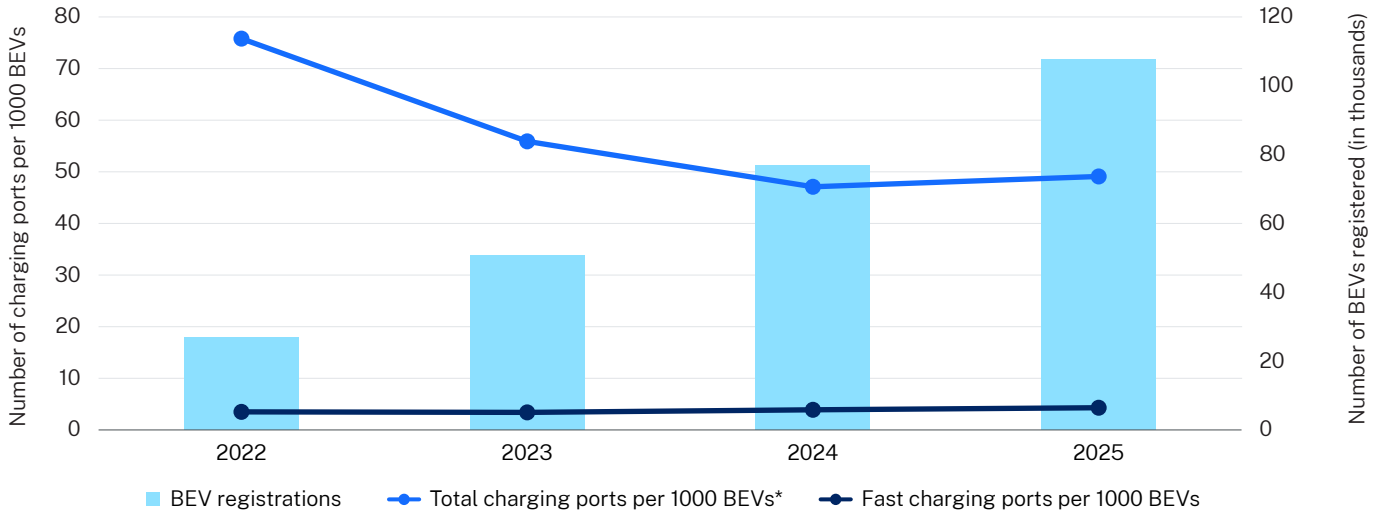
NSW needs to rapidly scale its public charging infrastructure rollout to support light EV uptake

Most EV charging takes place at home, but public charging availability is essential for those without private charging access and to enable long-distance intercity and regional travel (Electric Vehicle Council et al., 2024). In 2025, 684 public charging sites with 1,664 plugs were installed (including 165 fast charging sites with 607 plugs), bringing the cumulative total to 1,921 charging sites with 5,281 plugs, almost 4 times the 2021 level of 504 sites.[31] Despite this expansion, public charging infrastructure is not keeping pace with the growth in BEV numbers.

As BEV uptake has continued, the ratio of public charging ports to BEV registrations in NSW has declined from approximately 75 charging plugs per 1,000 BEVs in 2022 to around 50 charging plugs per 1,000 BEVs in 2025 (Figure 15). Many variables influence charging demand and utilisation (e.g. geographic coverage, charger types), nonetheless the NSW Government should ensure faster build out of the statewide public charging network to support the rapid uptake of BEVs and prevent infrastructure gaps from slowing the transition.

30 TfNSW analysis of sales data from FCAI VFACTS and the EVCs Vehicle Sales Report (sources not available online)
31 NSW DCCEEW analysis from Carloop, EVC and NSW DCCEEW data

Figure 15: Ratio of public charging ports to cumulative BEV registrations in NSW, 2022–2025



Source: NSW DCCEEW analysis of data from Carloop, EVC and NSW DCCEEW.
* Total charging ports includes fast charging ports.

A key ongoing challenge is ensuring sufficient coverage of chargers across the state, particularly in regional NSW. The NSW Government has committed to providing fast or ultrafast charging stations at least every 100 kilometres along major highways (NSW DCCEEW, 2026c). However, there is currently no comprehensive plan outlining how many and where chargers are required statewide beyond this interval-based target. At the same time, there is ongoing debate over the potential role of distribution network service providers to support accelerated roll out of chargers.

NSW and Commonwealth governments are signalling direction, but policy inconsistencies persist

The NSW EV Strategy, refreshed in 2026, primarily focuses on electrifying light vehicles in NSW. The strategy set targets for the uptake of BEVs (more than 50% of new car sales by 2030 and the vast majority by 2035), but sales are not currently on track to reach that target. The 2026 strategy refresh reprioritises $100 million towards five priorities: fast chargers in regional, remote and suburban blackspots, kerbside charging, electric truck uptake, EV workforce training, and better consumer information (NSW DCCEEW, 2026c). The Commission will monitor progress of the refreshed NSW EV Strategy through its annual reporting.

At the national level, initiatives such as the National EV Strategy, New Vehicle Efficiency Standard (NVES – see Box 5), and the Australian Government's fringe benefit tax (FBT) exemption for eligible electric vehicles under salary-packaging arrangements have materially improved EV uptake, model availability and fleet-wide efficiency. However, tax exemptions for light commercial vehicles tend to support heavier and higher emissions vehicles (Electric Vehicle Council, 2019).

Box 5: New Vehicle Efficiency Standard

Commencing on 1 January 2025, the NVES sets progressively tightening carbon dioxide emissions targets for new cars and light commercial vehicles sold in Australia (Cth DITRDCSA, 2025). Manufacturers and suppliers will need to offer lower-emissions models to meet these targets, giving Australians access to vehicles with lower running costs that also meet community environmental expectations (*New Vehicle Efficiency Standard Act 2024*). However, the reclassification of some vehicles from passenger cars to light commercial vehicles places them under less-stringent standards (NVES Regulator, 2024).

Figure 16: National cumulative emissions savings projected by the Commonwealth NVES Act

Source: Climate Council, 2024; Cth DITRDCSR, 2025.

Modal shift to active and public transport is an important complementary strategy

> **"Expand and connect walking, cycling, public transport and freight networks to reduce reliance on private vehicles and support mode shift across passenger and freight movements."**
>
> Randwick City Council submission to the Commission's 2025 consultation

Shifting trips from private cars to public or active transport can reduce emissions more quickly than measures that rely on fleet turnover such as electrification (Winkler et al., 2023).

By 2025, Sydney's public transport use had returned to pre-COVID levels, despite around 35% of the workforce continuing to work from home, supported by the light rail and new City and Southwest Metro line (BDO & Committee for Sydney, 2026). While planned metro expansions will add capacity, achieving large-scale modal shift will require sustained investment in service frequency and reliability, integrated land-use planning to shorten trip lengths, safe active transport infrastructure, and a broader package of financial incentives, infrastructure investment, and urban design measures that make public and active transport more convenient, affordable and prioritised than private vehicle use (Climateworks Centre, 2024; Creutzig et al., 2016). These investments towards modal shift should be delivered equitably across metropolitan areas, and where possible, extended to regional, rural and First Nations communities to help build social licence and ensure the benefits of transport decarbonisation are broadly shared.

Recommendation 3A: The NSW Government should enable and incentivise faster uptake of passenger and light commercial EVs in NSW, including by ensuring a rapid build out of the statewide charging network (public, residential and commercial), and expanding public transport, walking and cycling.

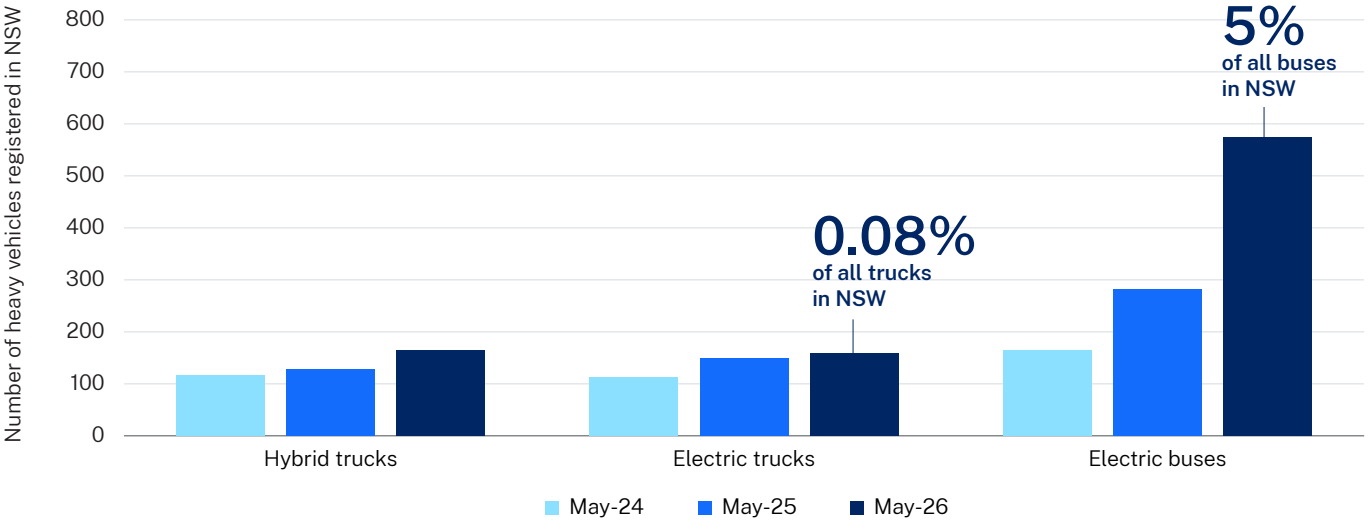
Electrification of heavy vehicles

Decarbonising heavy vehicles, shipping, long-distance rail and domestic aviation is more complex because technology options are less mature, costs are higher, and infrastructure needs are more demanding (IEA, 2021).

Increasing the electrification of heavy-duty trucks requires funding and support from NSW Government

Policy support for electrifying heavy-duty trucks in NSW remains far less developed than for light vehicles, despite some support in the 2026 EV Strategy. Bus electrification is more advanced, supported by the Net Zero Emissions Buses program. NSW has over 500 zero-emissions buses operating (Figure 17) and a long-term strategy to transition the 8,000-bus fleet by 2047.

Figure 17: Number of heavy vehicles in NSW, 2024–2026



Source: Commission analysis of Transport for NSW data (Transport for NSW, 2026).

* Electric buses only include public buses.

Road freight electrification is emerging first on metropolitan routes with access to depot charging. There are currently 153 electric and 165 hybrid trucks in operation (Figure 17). Recent demonstrations by zero-emissions trucking company New Energy Transport show the potential for electric trucks on key NSW freight routes,[32] alongside emerging battery-swap models being deployed by companies such as Janus Electric. However, widespread uptake remains constrained by limited model availability, higher upfront costs, and insufficient charging infrastructure (Moglia et al., 2025).

At the Commonwealth level, policy currently favours low-carbon liquid fuels as a "drop-in" solution over heavy vehicle electrification.[33] The availability of fuel tax credits (see Section 2.2) for heavy vehicles strongly incentivises the continued use of diesel-fuelled heavy vehicles and disincentivises the uptake of battery electric alternatives. However, recent Australian Renewable Energy Agency (ARENA) Driving the Nation projects signal growing federal support for electric-truck charging infrastructure. The Commonwealth Productivity Commission's recent review also highlights that establishing the electricity network connections for high-powered charging is a key barrier and will require active facilitation and investment by states and the Commonwealth Government, particularly at heavy vehicle rest areas (Productivity Commission, 2026).

Recommendation 3B: The NSW Government should plan for and incentivise electrification of trucks and buses, including charging infrastructure along freight corridors.

Recommendation 5E: The NSW Government should lead advocacy for Commonwealth policy changes that support and drive emissions reductions, such as fuel tax credit reform.

32 In 2025, New Energy Transport hauled 36 tonnes over a 480km round trip on a single charge. On the route, the Windrose electric prime mover cut 40 minutes from a typical diesel journey by maintaining higher speeds on gradient. New Energy Transport has also completed Sydney-Canberra distribution on a single charge (Fleet EV News, 2025; New Energy Transport, 2025, 2026).

33 The Commonwealth Government has committed substantial funding to low carbon liquid fuels, such as the $1.1 billion Cleaner Fuels Program and $250 million under the Future Made in Australia Innovation Fund (Cth Treasury, 2024b). Heavy vehicle electrification has been supported by comparatively modest grant funding through ARENA (primarily demonstration and feasibility work) and is entirely excluded from the new NVES regulatory framework.

Box 6: Electric trucks are becoming more competitive

There are signs of momentum in electric trucks, including rapid growth in deployment and improving performance, though progress remains uneven and at an early stage globally (Krishnan et al., 2025). Europe is funding heavy-duty charging and has set public-charging deployment targets (BloombergNEF, 2025c, 2025b). In China, government subsidies cover around 20-30% of upfront electric truck costs, helping drive sales growth of 167% year-on-year in the first 3 quarters of 2025 (BloombergNEF, 2025a). China is also investigating battery swapping to enable rapid turnaround in short-haul routes (Cui et al., 2023).

Figure 18: Electric truck running costs compared to diesel trucks, and total cost of ownership parity

~2–4 years*
Total cost of ownership parity

~50%
drop in upfront costs in the last 5 years

FTC APPLIED

Diesel truck

Pump price (inc. excise of 52.6¢/L)	186¢/L
Fuel use	32L/100km
Gross fuel cost per km	$0.60
FTC credit per km (20.5¢/L)	-$0.07
Net fuel cost per km	**$0.53**
Annual cost (100,000 km)	$53,000

NO EXCISE

Electric truck

Electricity rate	30¢/kWh
Energy use	130kWh/100km
Energy cost per km	**$0.39**
Annual cost (100,000 km)	$39,000
Annual saving vs diesel	**$14,000 saved**

* Route dependent

Note: Diesel net fuel cost/km calculated using the ATO's FTC rate as of Apr 2026, national average diesel pump price in 2025, and industry averages for fuel consumption. Electric truck net energy cost per km calculated using industry averages for energy use and commercial depot charging rates.

Sources: Australian Taxation Office, Fuel tax credit rates, 2026; Australian Institute of Petroleum, Annual retail price data, 2025.

Implications for NSW:

- Electric trucks are becoming competitive on a total cost of ownership basis, despite higher upfront costs (around 1.3 to 2.4 times a diesel equivalent) (Dia, 2026; Xie & Minjares, 2025).
- Ongoing improvements in battery technology and aerodynamics are extending range and improving efficiency, while charging capacity is scaling quickly, with fast charging systems having the potential to recharge heavy trucks in as little as 15 minutes (Krishnan et al., 2025).
- Fleet pilots and demonstration projects help build confidence and de-risk investment in charging hubs and grid upgrades.[34]

34 In December 2025, ARENA funded Australia's first off-site electric truck charging hub in Alexandria, Sydney that will host 22 DC fast chargers for up to 44 light commercial trucks (Cth DCCEEW, 2025o). A separate partnership between ARENA and major freight player, Linfox, will deploy 26 Volvo eFM Prime Movers, supported by 25 chargers across three existing Linfox sites nationally. This project aims to provide critical insights into the operation and performance of electric heavy-duty trucks in Australian conditions, helping to strengthen the trucking industry's broader understanding of real-world operations (ARENA, 2025).

The use of renewable fuels can support further transport decarbonisation where electrification is not feasible

For domestic shipping and aviation, and some heavy-duty trucks and vehicles where electrification is not currently feasible or will take time, emissions reductions are likely to rely on low-carbon liquid fuels (such as renewable diesel, biodiesel and sustainable aviation fuel) in the short to medium term.

Over time, synthetic fuels produced using green hydrogen may play a growing role, alongside efficiency improvements. Key barriers include cost premiums, supply availability, and the need for robust standards and supply chains (CEFC & Deloitte, 2025). Recent Commonwealth and NSW Government programs including the $1.1 billion Commonwealth Cleaner Fuels Program[35] and NSW Renewable Fuel Strategy aim to address these barriers (NSW DCCEEW, 2025e).

Modal shift from road to rail offers significant emissions reduction benefits for freight

Shifting freight from road to rail can deliver efficient emissions reductions and ease congestion and road impacts. The Transport for NSW freight policy reform report notes that "the most substantial immediate reduction in freight emissions would come from a shift from road to rail" (Transport for NSW, 2025), and reporting on Australia's freight task highlights the scale of the opportunity; for example, one train can move the equivalent freight of around 54 trucks (Claughton, 2024).

The Australian Logistics Council has similarly argued that achieving wider adoption of rail-based freight solutions will require reviewing regulatory and charging arrangements, which currently provide structural advantages to road transport despite the significantly lower emissions intensity of rail (Joint Standing Committee on Net Zero Future, 2025).

Realising the full emissions and congestion benefits of a road-to-rail shift will require NSW Government investment and continuing coordination with the Commonwealth Government to improve network efficiency, including through rail access, pricing and terminal infrastructure.

Complementing long-haul modal shift, last-mile optimisation is emerging as a key opportunity in urban freight. For example, the Transport for NSW last-mile trial is testing the use of inner-city micro-hubs and low-emissions delivery modes (including e-bikes and electric vehicles) to shorten delivery distances, reduce congestion and lower emissions in dense CBD and inner-ring areas (Transport for NSW, 2024b).

Recommendation 5B: The NSW Government should establish the platforms and new infrastructure for the decarbonisation of heavy freight, aviation and shipping, including options to scale alternative low carbon fuels for aviation and shipping, and shifting road freight to rail.

35 Cleaner Fuels Program: Powering low carbon liquid fuel production in Australia | Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts.

Transport sector policy assessment

STRONG, ON TRACK | STRONG, DELAYED | **PARTIAL** | LIMITED

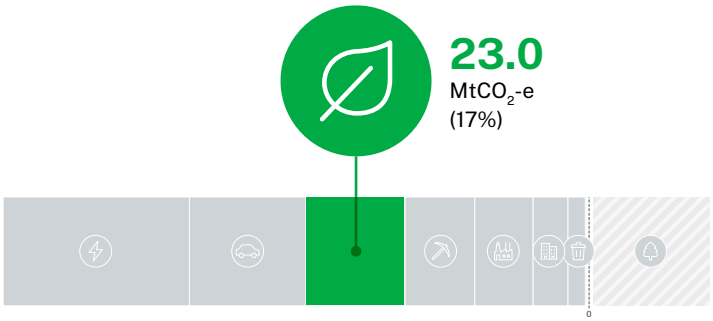
- ✓ Commonwealth New Vehicle Efficiency Standard sets a strong signal for car manufacturers to allocate lower emissions vehicles to Australia, and FBT exemption is encouraging uptake of EVs
- ✓ NSW EV Strategy sets targets for uptake and provides funding for charging infrastructure, although uptake lags targets
- ✓ Commonwealth and NSW governments provide funding for renewable fuels for aviation, shipping, and heavy vehicles where electrification is not feasible
- ✗ Tax incentives encourage heavier, higher-emitting vehicles, potentially undermining measures like the FBT exemption for BEVs
- ✗ Heavy vehicle electrification is more challenging, and policy frameworks are limited

2.5 Agriculture sector

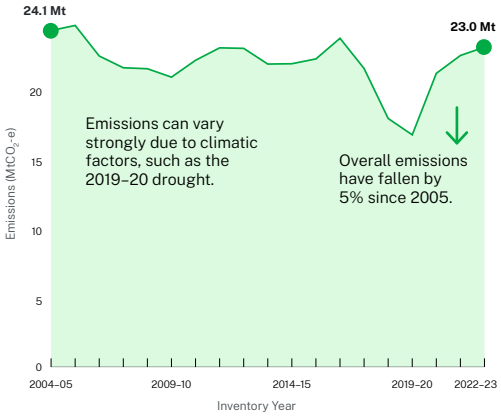
Emissions overview

The agriculture sector represents one of the most significant and complex challenges in the state's transition to net zero.

Most of the emissions are produced through biological processes. Currently, it stands as the third-highest source of emissions in NSW.



Emissions over time ($MtCO_2$-e)



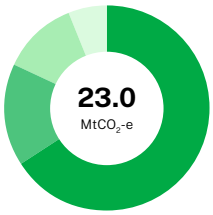
-5% change since 2004-05

+0.6 Mt change in 2022–23

Composition of 2022–23 Emissions

By Sub-sector

$MtCO_2$-e and % of sector



- Enteric Methane **15.2** $MtCO_2$-e (66%)
- Soils **3.6** $MtCO_2$-e (16%)
- Fuel **2.7** $MtCO_2$-e (12%)
- Manure **1.5** $MtCO_2$-e (7%)

Sums may not add up to 100% due to rounding.

In 2022–23, enteric methane from livestock digestion made up **66%** of CO_2–equivalent emissions from the agriculture sector.

Enteric Methane by source

60% Cattle **9.1** $MtCo_2$-e

39% Sheep **6.0** $MtCo_2$-e

1% Other **0.1** $MtCo_2$-e

By Greenhouse Gas

$MtCO_2$-e and % of sector

- Methane **16.9** $MtCO_2$-e (74%)
- Nitrous oxide **3.2** $MtCO_2$-e (14%)
- CO_2 **2.8** $MtCO_2$-e (12%)

Sums may differ from the total due to rounding.

Agriculture emissions are predominantly biological. Methane (CH_4) together with nitrous oxide (N_2O) make up **88%** of the sector's total emissions.

Source: Commission analysis of the 2022–23 inventory (Cth DCCEEW, 2025j).

New England Solar Farm

Mike Terry

Abatement technologies for agriculture are generally still at development and commercialisation stage

The agriculture sector's progress is mixed, with gains in efficiency and emissions intensity offset by ongoing challenges in reducing total emissions (Eckard & Grace, 2022).

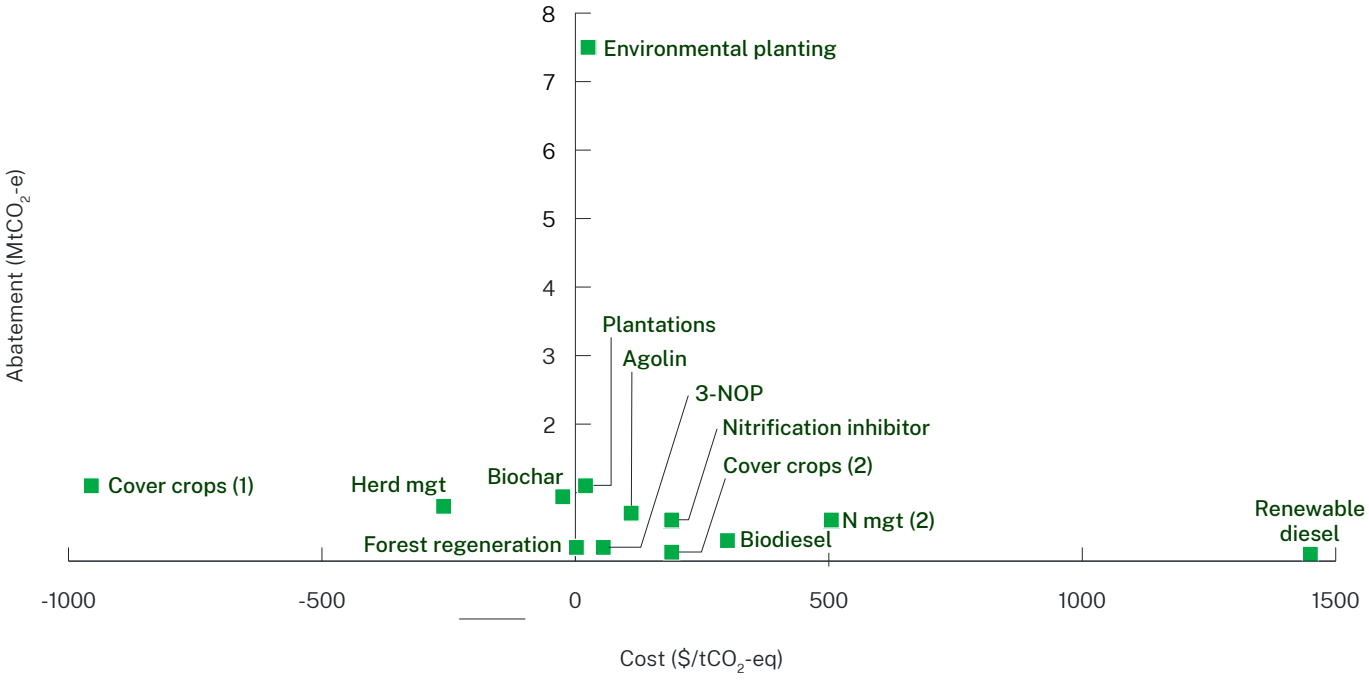
The emissions intensity of protein has declined, reflecting productivity gains in livestock systems (Harrison et al., 2026), including improvements in feed conversion efficiency, genetics, fertiliser optimisation and whole-farm management (Bhattarai et al., 2026).

The NSW Department of Primary Industries and Regional Development (DPIRD) has several research programs and policies underway that focus on near commercially viable abatement and sequestration measures at the farm and landscape scale (NSW DPIRD, 2023). The Low Emissions Agriculture project is investigating the benefits of early adoption of abatement to maintain resilient and competitive production systems. This is occurring in the context of increasingly volatile climate conditions affecting primary industries (NSW DPIRD, 2024a).

In 2025, DPIRD released a comprehensive assessment of 12 specific abatement measures, categorising them by their feasible potential and marginal cost (Figure 19) (NSW DPIRD, 2025). For the 2030 to 2035 timeframe, the most significant opportunities are expected to be:

- **Land-Based Sequestration:** This includes vegetation management, soil carbon management and the application of biochar
- **Herd Management:** Improving the efficiency of livestock production remains a key low-cost pathway
- **Fertiliser Optimisation:** This is identified as a high-priority, low-cost strategy. Improved fertiliser management can increase farm profitability while simultaneously delivering verifiable reductions in soil emissions
- **Feed Additives:** Anti-methanogenic feed additives (AMFAs) show substantial abatement potential; currently at a lower level of maturity nor cost-effective and scalable (Cth DCCEEW, 2025g).

Figure 19: Marginal abatement cost (MAC) vs feasible abatement potential for 12 abatement technologies in NSW*



Source: NSW DPIRD, 2025, p. 68, Table 4.

* The MAC shown is the average weighted cost of the measure where multiple options were evaluated. The lower bound of the 2030 abatement potential is used where a range is provided. The data point for 'N mgt (1)' is outside the range of this chart.

Data notes: Anti-methanogenic feed additives included in the analysis were Agolin and 3-NOP. Multiple scenarios were evaluated for N mgt and cover crops, as noted in brackets.

Large scale environmental planting, a form of vegetation management, is a longer-term option because it delivers emissions reductions slowly, competes strongly with productive land uses, and carries financial barriers and permanence risks (e.g. risks from drought and fire) compared to other land-based options (CSIRO, 2024a).

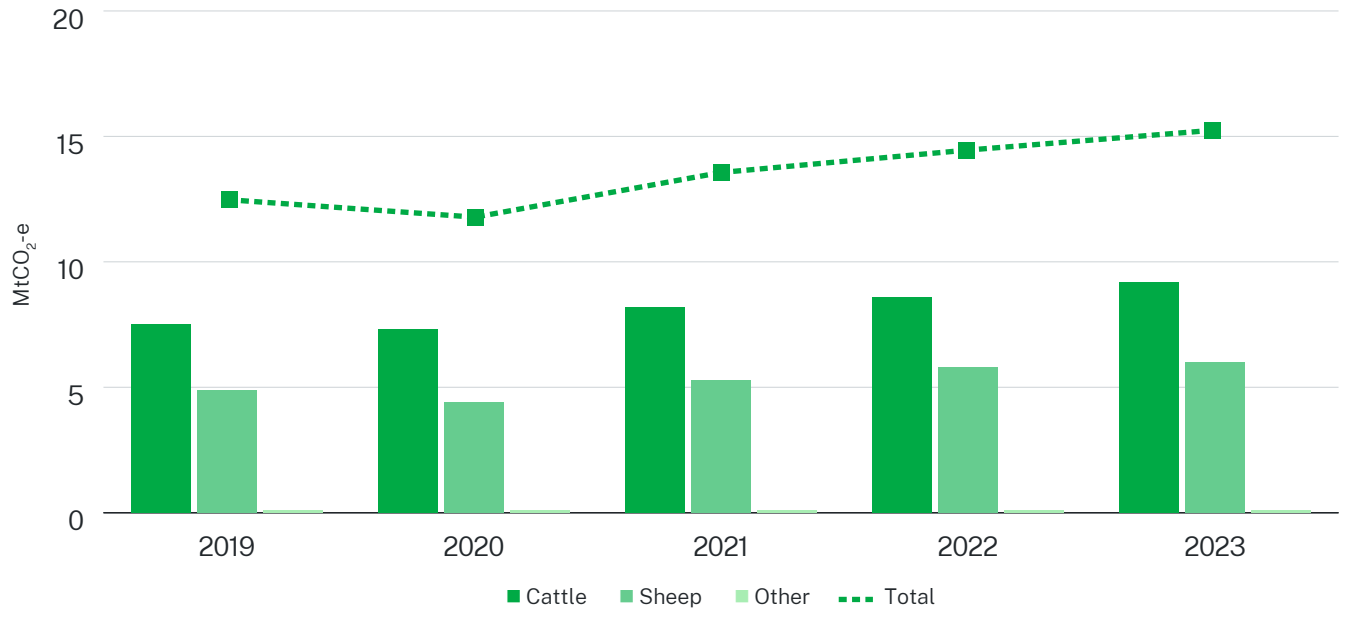
Through a collaboration with a Cross Industry Biochar Working Group, the Australia New Zealand Biochar Industry Group proposed a methodology for including biochar CO_2 removal under the ACCU Scheme (ANZBIG, 2025). However, the Emissions Reduction Assurance Committee specified support if or when resources permit and it has not progressed to date (Cth DCCEEW, 2024e). As a result, biochar activities remain ineligible to generate ACCUs, limiting commercial deployment. While biochar presents a potentially cost-effective abatement option on a per-tonne basis, with co-benefits for soil health, its commercial viability is currently limited by high production costs and an immature market, requiring financial support such as carbon crediting mechanisms (NSW DPIRD, 2025). Addressing this barrier will help unlock investment and enable biochar to contribute meaningfully to NSW legislated emissions reduction targets.

There is increasing interest in standardised farm-level greenhouse gas accounting driven by targeted government investment in skills, tools and advisory capacity as a measurement and business planning instrument rather than solely as a pathway to ACCU participation (AIA, 2023; NSW DPIRD, 2026a, 2026b). Ongoing investment in farm-level carbon measurement and management plans needs to continue to build landholder capability to address emissions.

Methane abatement is challenging and more research and development is required to prove, commercialise and deploy abatement options

Methane abatement represents one of the most significant biological challenges for the agriculture sector, particularly in grazing livestock systems. Methane is a highly potent greenhouse gas, approximately 80 times stronger than carbon dioxide over a 20-year timeframe, meaning its reduction provides an outsized benefit to overall emissions reductions (IPCC Working Group I, 2021). Enteric methane produced in the stomachs of livestock is a natural digestive byproduct that has shown a steady increase over the last 5 years (Figure 20).

Figure 20: Enteric methane in the agriculture sector, 2019–2023



Source: Commission analysis of the 2022–23 inventory (Cth DCCEEW, 2025j).

The challenge is exacerbated by the diversity of agricultural production systems for ruminants. While AMFAs show promise in intensive systems such as dairies and feedlots, they are not yet scalable for the 95% of NSW livestock (sheep and cattle) which graze freely on grass and other vegetation (Cth DCCEEW, 2025g). A major emerging opportunity lies in "technology stacking" (NSW DPIRD, 2025), where genetics, vaccines and improved feed bases are deployed together to achieve cumulative gains while supporting productivity and resilience outcomes (Hayes & Bradford, 2025). There is a need for targeted research and development focused on scalable commercial delivery of abatement options and technology stacking in localised settings, given the wide variability of landscape and climatic conditions across NSW.

In other areas, progress is more rapid. NSW is currently leading national trials in low-methane rice systems in the Northern Rivers, which have demonstrated the potential to significantly reduce methane emissions from rice production (Reading & Rose, 2025).

Increasing expectations from supply chains, financial institutions and climate policy frameworks, including Australia's participation in the Global Methane Pledge are placing growing pressure on producers to measure and manage methane emissions, with implications for market access, competitiveness and participation in emerging low-emissions supply chains (NSW DPIRD, 2025).

Recommendation 4B: The NSW Government should scale the low-cost abatement measures identified by DPIRD, including biochar, feed additives, manure management and herd management, alongside longer-term pathways for reducing livestock emissions.

Energy, electrification and bioenergy constraints

There are clear opportunities to electrify on-farm energy use. While the Energy Savings Scheme (ESS) was amended in 2021 to enable diesel-to-electric or solar switching, these activities are not yet included in the scheme rule and cannot generate certificates (NSW DPIRD, 2026c). Adding them would unlock an immediate, practical emissions reduction pathway while reducing exposure to fuel price volatility. The NSW Government could incentivise on-farm fuel switching through the ESS, but so far has not taken advantage of this.

Bioenergy, off-grid energy and waste-to-energy systems are recognised as potential pathways to reduce emissions and improve energy resilience in intensive agricultural systems, although deployment remains limited (ENEA & Deloitte, 2021).

Energy from waste projects in regional agricultural settings are proceeding too slowly to contribute materially to emissions reduction. Key constraints include slow planning, restrictive policy settings, unclear approval pathways and limited scalability despite strong potential for anaerobic digestion and bioenergy to reduce methane emissions, manage agricultural waste and boost regional productivity (EMM Consulting, 2025; ENEA & Deloitte, 2021) (See Section 2.10 and Recommendation 5F).

Stephen Thompson

An integrated landscape-scale policy approach has the potential to deliver mitigation, climate resilience and valuable co-benefits

Research through the Indian Agricultural Research Institute, James Cook University and Australian National University shows that integrating agriculture and land management can deliver emissions reduction, climate resilience and productivity gains within production systems (ANU, 2026; Rathore et al., 2022). Practices such as shelterbelts, environmental plantings, agroforestry and First Nations-led stewardship provide benefits for producers while also generating wider public co-benefits, including improved water quality and local amenity (Amichev et al., 2021; Bird, 2024).

The NSW Land and Primary Industries Emissions Reduction Options Report is a NSW Government assessment that identifies and evaluates practical emissions reduction opportunities across agriculture, forestry and fisheries, including their abatement potential, cost and readiness for deployment (NSW DPIRD, 2025).

Long-term investment in research and development, community confidence and fit-for-purpose finance for landholders are needed

While current policies build foundational capability, there is a risk that large-scale abatement in the agriculture sector will not be realised until after 2035, reflecting the time required for technology development, adoption and scaling. A strategic shift toward long-term, resilience-aligned innovation that balances production with net zero goals is needed.

To maintain competitiveness and meet evolving global investment requirements, landholders need access to funding and incentives to reduce emissions and build climate resilience, alongside clear, consistent regulatory settings and standardised greenhouse gas accounting (Cth DCCEEW, 2024b; Cth DAFF, 2026a; Climateworks Centre, 2026). Programs such as the Primary Industries Productivity and Abatement Program (PIPAP) could play a useful role in supporting early-stage pilots and demonstrating potential participation in carbon and nature markets (NSW DCCEEW, 2024g).

At approximately

$125 million

over eight years,

PIPAP provides targeted support for pilots and early-stage activities but is unlikely, on its own, to materially shift sector-wide emissions trajectories or investment behaviour (NSW DCCEEW, 2024g).

More significant capital deployment is occurring at the Commonwealth level, including through the Regional Investment Corporation (RIC), which provides large-scale concessional finance to farm businesses, and targeted programs supporting the development and deployment of methane emissions reduction technologies in livestock (Cth DCCEEW, 2025g).

While RIC funding focuses on resilience rather than emissions reduction, the scale of Commonwealth investment highlights the importance of federal mechanisms (Cth DAFF, 2026b). NSW should focus on enabling conditions such as market access and crediting frameworks to drive abatement at scale. Public finance should prioritise emissions reduction, with land-based carbon sequestration valued conservatively taking into account the risk of permanence and integrity (CSIRO, 2024a; IPCC, 2022b).

Recommendation 5C: The NSW Government should improve alignment across agriculture, land-use and climate policy frameworks to reduce emissions, focusing on protecting native forests, limiting land clearing, and ensuring land managers can access incentives and financial mechanisms to deliver abatement, resilience and other co-benefits.

Agriculture sector policy assessment

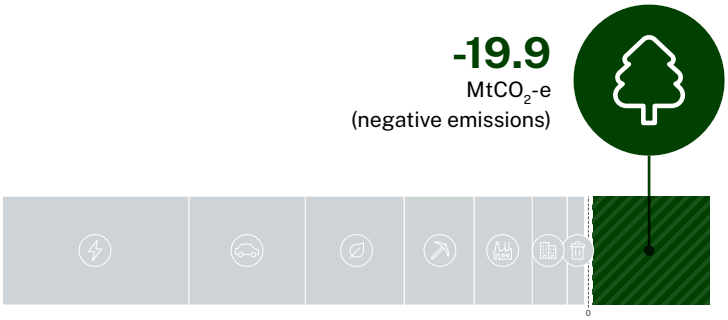
STRONG, ON TRACK | STRONG, DELAYED | PARTIAL | **LIMITED**

- ✓ DPIRD's NSW Land and Primary Industries Low Emissions Options set the strategic planning direction and policy development approach
- ? DPIRD programs deliver research and data to support emissions reductions. The commercialisation and deployment of most potential solutions are still in development
- ? PIPAP provides funding for capacity building and carbon market participation, although impacts are still to be demonstrated
- ? The method and timeframe in which research and capability building will translate into innovation and investments to drive uptake of mitigation is unclear
- ✗ Without long term continuity of research funding, abatement pathways for biological emissions are likely delayed beyond 2035

2.6 Land sector

Emissions overview

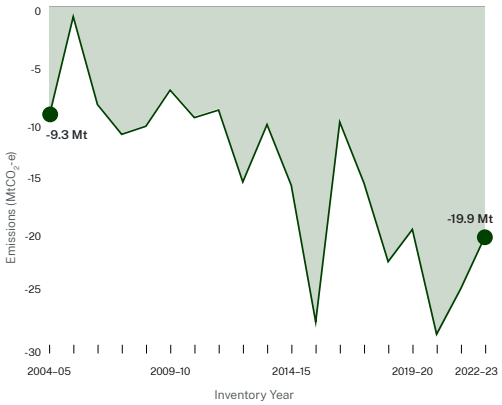
In 2022–23, the NSW land sector was estimated to be the most significant contributor to net emissions reductions across the state, operating as a substantial net carbon sink.



Emissions over time ($MtCO_2$-e)

As with agriculture, land-sector emissions and removals are shaped by climatic variability, biological cycles and highly diverse systems.

Sustained emissions reduction therefore depends on productivity improvements, adoption of low-emissions practices, and continued investment in research, extension, capability and regulation.

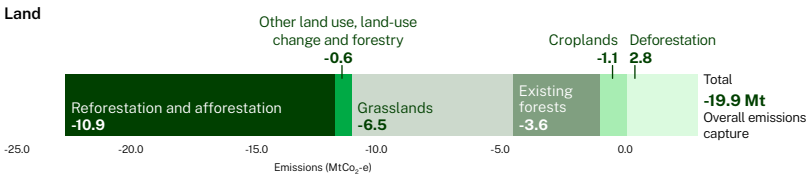


114% increase in net emissions sink in 2023 from 2004–05 levels

+4.5 Mt decrease in net emissions sink in 2022–23

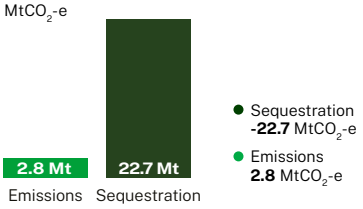
Composition of 2022–23 Emissions

By Sub-sector
$MtCO_2$-e



The NSW Government's emissions projections show that land will continue to deliver substantial annual negative emissions.

Emissions within the land sector
$MtCO_2$-e



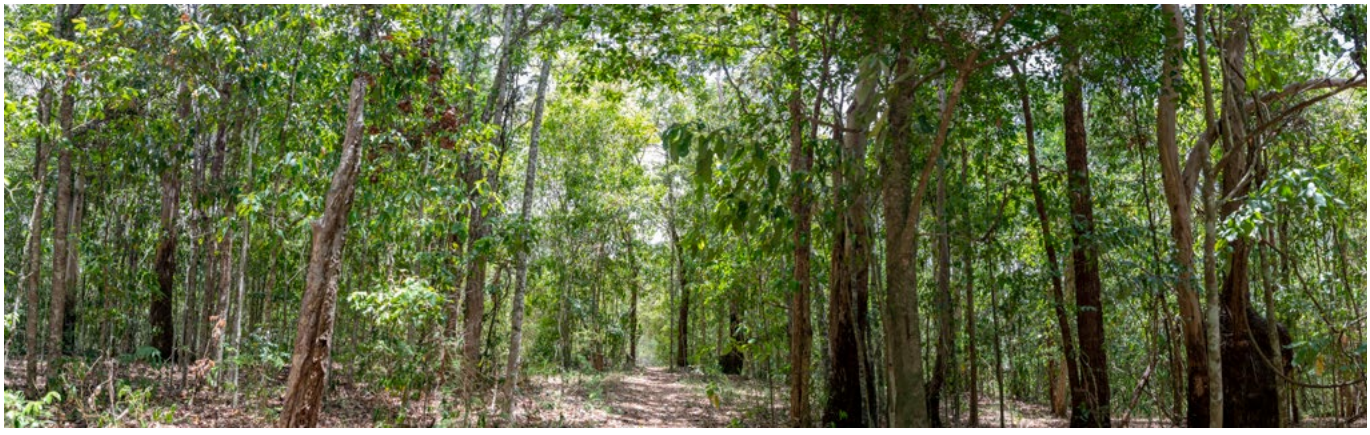
In 2022-23, the estimated carbon sequestration in the land sector was 8 times more than the sector's emissions

This storage capacity is a critcal component in meeting the state's legislated targets.

**The net carbon sink provided by the sector in 2022–23 was 4.5 $MtCO_2$-e less than the carbon sink achieved in 2021–22. This decline suggests that while the sector remains a vital sink, its performance is subject to fluctuations requiring careful monitoring.*

Source: Commission analysis of the 2022–23 inventory (Cth DCCEEW, 2025j).

Land sector emissions and removals are driven by climate variability, biological processes and ecosystem diversity, making them inherently less predictable and less controllable. Therefore, to sustain reductions, the sector needs to build resilience, manage climate risk and adopt lower-emissions practices.



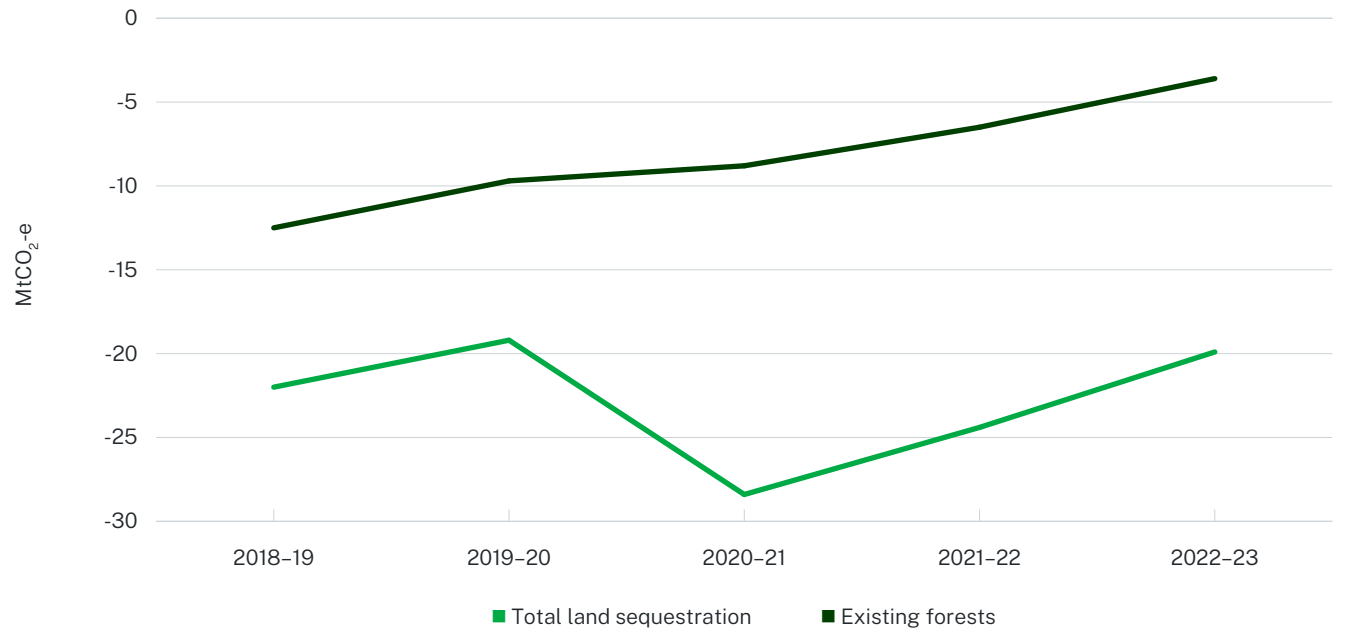
Reliance on land as a carbon sink carries risk due to climate change impacts and quantification uncertainties

The NSW Government projects that land will continue to deliver substantial annual negative emissions (NSW DCCEEW, n.d.). As shown in Figure 21 and the infographics above, accounting for uncertainty and increasing climate impacts mean reliance on the sector as a core contributor to the legislated targets represents a material risk. Also highlighted in the 2024 Annual Report (Net Zero Commission, 2024), the land sector's role is highly volatile. Extreme fire seasons (NSW DCCEEW, 2024f), warming, prolonged droughts and soil moisture variability are driving large year-on-year shifts in emissions. For example, in December 2019, bushfires in NSW released approximately 180 $MtCO_2$-e in a single month (Shiraishi & Hirata, 2021). Annual emissions figures reported in national inventories are substantially lower because large one-off bushfire emissions such as this are not fully reflected in annual totals, which assume post-fire forest regrowth absorbs much of the carbon over time (F. Li et al., 2021). With increasing fire risk due to climate change, coupled with increased frequency of extreme heat, the assumption that forests regrow after fire (and particularly after repeated fires) is increasingly uncertain (ANU, 2023).

These factors make the land sector unreliable for long-term net zero planning. NSW Government's Net Zero Plan should consider that, over time, the sector will deliver less carbon storage and will likely become a net emitter in some years (CSIRO, 2024b; CSIRO Carbon Water Observatory, 2013).

Changes in reporting methodology for emissions from the land sector can significantly alter the state's perceived progress toward the legislated targets without changes in actual abatement. For instance, the 2022 National Inventory Report introduced model updates for crop and grassland to reflect climate-driven growth effects, which necessitated retrospective changes to historical data (Cth DCCEEW, 2024c). Furthermore, the 2024 inventory update recalibrated historical removals upward, making the state's 2030 target appear 4% easier to reach (NSW DCCEEW, 2025d). This uncertainty underscores the need for robust data integration to ensure policy decisions are based on an accurate picture of land management and not just single model estimates with multiple uncertain assumptions as currently used (Cth DCCEEW, 2024b).

Figure 21: Existing forests' declining contribution to CO_2 sequestration



Source: Cth DCCEEW, 2024c.

Nationally, carbon storage is incentivised through the ACCU scheme. The land sector is currently the largest contributor to this scheme in NSW. As of February 2026, land-based ACCU projects account for the majority of credit generation in NSW, reflecting the dominance of vegetation and land management activities within the scheme (Clean Energy Regulator, 2026c). This dominance in the carbon market reflects years of continuous investment and the economic importance of the land sector. It also highlights the significant pressure on the land sector to deliver emissions reductions for other sectors struggling to decarbonise.

There are opportunities to strengthen sector performance

Under national inventory accounting (FullCAM), native forest harvesting is reflected as a reduction in net carbon stocks across forest biomass and harvested wood product pools. Indicative estimates suggest that ending native forest harvesting in NSW could avoid around 3.6 $MtCO_2$-e per year or approximately 3% of the state's 2022–23 emissions (ANU, 2022; Sanger, 2023; NSW DCCEEW, 2026f). While there are differing views on optimal forest management models (Raison, 2024; Ximenes et al., 2012, 2016), there is scientific evidence that the loss of existing forest carbon stocks through harvesting represents a material emissions risk, reducing land sector sink capacity and affecting progress toward legislated emissions targets (IPCC, 2022b).

Building climate resilience requires a strategic shift toward protecting and managing existing carbon stocks rather than merely focusing on new growth. This involves prioritising the maintenance of native forests, restricting further land clearing and allowing regrowth to reach maturity while building soil carbon (CEFC, 2026).

A key component should involve First Nations-led initiatives, including cultural fire, hazard reduction and broad landscape stewardship. These practices offer more than just the potential for carbon sequestration; they provide essential biodiversity and community co-benefits that strengthen the social fabric of regional NSW, although results vary depending on ecosystem, scale and application (University of Wollongong, 2024). Integrating these techniques is potentially helpful for a land sector that is more resilient to a warming world while delivering meaningful environmental outcomes for all stakeholders involved. More information on cultural fire is in Section 4.2.

Carbon markets and co-benefits can deliver value for landholder

Carbon markets and co-benefits can deliver value for landholders, with ACCU prices typically in the ~$30–$40 per tonne of CO_2-e avoided or removed range in recent years. There is evidence that high-integrity projects with verified biodiversity and social outcomes attract price premiums, improving revenue and resilience (Clean Energy Regulator, 2025b; CORE Markets, 2026).

Circular economy principles provide a scalable decarbonisation pathway for the land sector, with waste-to-value systems, nutrient cycling and biomass reuse shown to reduce emissions, lower input costs and improve farm productivity and resilience (Cth DCCEEW, 2024a; Productivity Commission, 2025a).

Furthermore, nature-based solutions including reforestation, wetland restoration and protection of native forests offer a mechanism to stack value for landholders. These solutions provide ecosystem services such as carbon storage, biodiversity enhancement and water regulation (Cth DCCEEW, 2025k). The NSW Plan for Nature (NSW Cabinet Office, 2024) and the state's commitment to a "nature positive" agenda are central to this transition, alongside the National Parks and Wildlife Service's goal to be "Carbon Positive by 2028" (NSW DCCEEW, 2024e).

NSW must align its regulatory frameworks with the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) reforms, set out within the *Environment Protection Reform Bill 2025* (Reform Bill) particularly regarding "Net Gain" and "Unacceptable Impacts" tests. Alignment reduces duplication and regulatory uncertainty, supports streamlined Commonwealth–state approvals, and signals nationally consistent, credible environmental standards that lower project risk and improve investor confidence and financing viability (Cth DCCEEW, 2024f, 2026b; NSW Cabinet Office, 2024).

Additionally, there is a need for fit-for-purpose green finance and incentives to support investment in on-farm sequestration and stewardship. This shift is necessary to ensure that participation in carbon and nature markets is accessible and profitable for regional producers across the entire state.

The increasing use of the land for carbon abatement is contributing to growing competition between carbon sequestration, agricultural production and other land uses, reflecting competing demands for a finite land base (Searchinger et al., 2023; Gurgel et al., 2024). As the population grows and agricultural requirements increase, the need to balance food production, carbon storage, and nature repair becomes more acute (Cth DAFF, 2026a; Foxl & McRobert, 2024). Land-use change is influenced by a range of economic, policy and environmental factors (Climateworks Centre, 2026). In the absence of coordinated monitoring and policy alignment, these market forces could shift land values in ways that redistribute risk rather than delivering improved environmental resilience (Davis, 2023). Integrated management is therefore essential to ensure that interactions between carbon farming, agricultural production and environmental outcomes are understood, and that trade-offs are made explicit (Climate Change Authority, 2024; Cth DAFF, 2025, 2026a; NSW Agriculture Commissioner, 2022).

Recommendation 5C: The NSW Government should improve alignment across agriculture, land-use and climate policy frameworks to reduce emissions, focusing on protecting native forests, limiting land clearing, and ensuring land managers can access incentives and financial mechanisms to deliver abatement, resilience and other co-benefits.

Land sector policy assessment

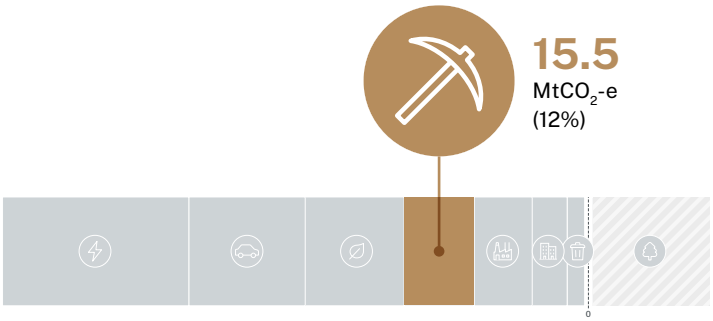
STRONG, ON TRACK	STRONG, DELAYED	PARTIAL	LIMITED

- ✓ Progress on NSW Plan for Nature and Nature Repair Market and reviews of *NSW Biodiversity Act* and *Commonwealth EPBC Act* are promising developments to support co-benefits and value stacking
- ? PIPAP provides funding for capacity building and carbon market participation, although impacts are still to be demonstrated
- ✗ Uncertainty about treatment of highly variable land sector emissions in legislated emissions reduction targets and policy development
- ✗ Lack of policies aiming to protect carbon stored in land
- ✗ Continued logging of old growth forest

2.7 Resources sector

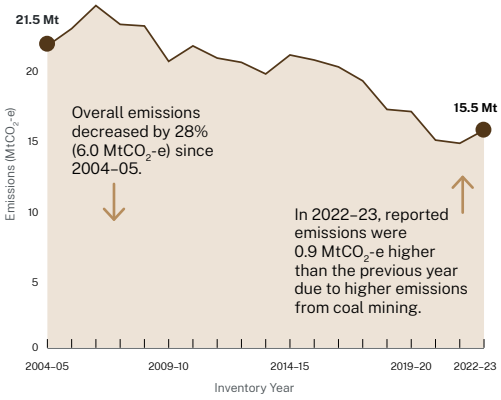
Emissions overview

The resources sector includes fugitive and fuel combustion emissions from coal mining and oil and gas projects, and fuel combustion emissions from other mining and quarries.



Emissions over time ($MtCO_2$-e)

Reductions in reported emissions from the resources sector since 2004–05 have been driven by the closure of large, gassy underground mines.



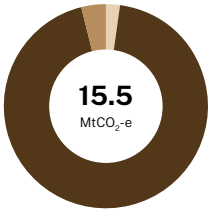
-28% change since 2004–05

+0.9 Mt change in 2022–23

NSW Government projections expect emissions to continue increasing after 2022–23. Peak emissions projected for 2028–29.

Composition of 2022–23 Emissions

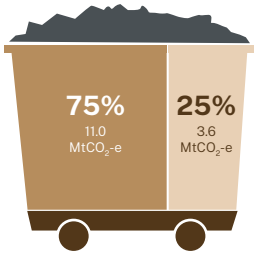
By Sub-sector
$MtCO_2$-e and % of sector



- Coal mining **14.6** $MtCO_2$-e (94%)
- Oil and gas **0.6** $MtCO_2$-e (4%)
- Other mining and quarries **0.4** $MtCO_2$-e (2%)

Coal mines produced **94%** of resources sector emissions in 2022–23.*

Coal Mining Emissions by source
$MtCO_2$-e and % of coal mining emissions



- Fugitives
- Fuel combustion

91% (9.9 $MtCO_2$-e) of coal mining fugitive emissions are methane (CH_4).

By Greenhouse Gas
$MtCO_2$-e and % of sector

- Carbon Dioxide (CO_2) **5.1** $MtCO_2$-e (33%)
- Methane (CH_4) **10.4** $MtCO_2$-e (67%)
- Nitrous oxide **0.1** $MtCO_2$-e (<1%)

Methane has a larger short-term warming impact per molecule than carbon dioxide.

Sums may differ from the total due to rounding.

Source: Commission analysis of the 2022–23 inventory (Cth DCCEEW, 2025j).

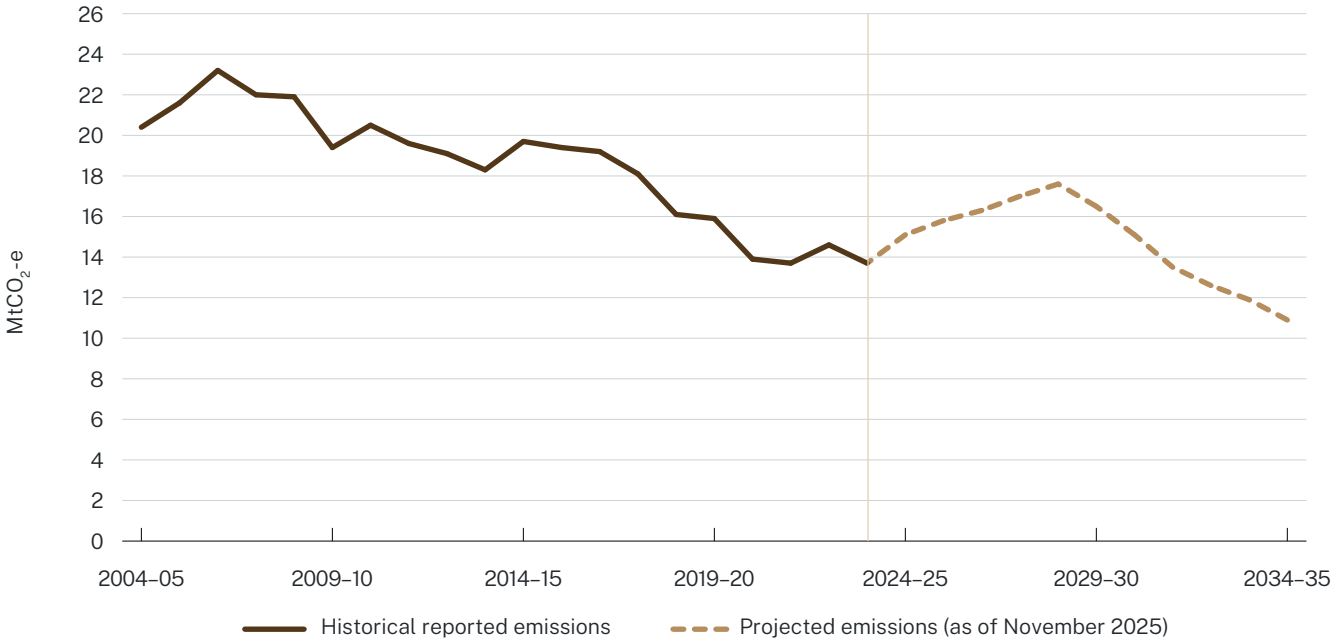
* The Commission's Coal Mining Emissions Spotlight Report (December 2025) stated that coal mining emissions comprised 96% of resources sector emissions in 2022–23. Updated Commission methods for apportioning sectoral emissions have produced higher total resources sector emissions and so a lower percentage (94%) is attributable to coal mines (Net Zero Commission, 2025a).


Bulga Coal mine, located near Broke NSW

Coal mining emissions are set to increase and remain the most material source of resources sector emissions

According to NSW Government projections, annual coal mining emissions are expected to increase year on year from 2024–25, peaking in 2028–29 (Figure 22). This would reverse the historical trend of falling emissions from resources at a time when emissions across the economy need to reduce if NSW is to meet the legislated 2030 and 2035 targets (NSW DCCEEW, n.d., 2026e).

Figure 22: Historical reported emissions and NSW Government projected emissions from coal mines



Source: Projected coal mining emissions under current policy scenario (NSW DCCEEW, 2026e, p.75, Figure 26).

In 2029–30, 0.3 $MtCO_2$-e of on-site abatement is assumed to be delivered by mines covered by the Commonwealth's Safeguard Mechanism (Safeguard) (NSW DCCEEW, 2026e). Total coal mining emissions are forecast to return below 2023–24 levels in 2031–32, following goaf sealing and gas drainage at mines, and continue to decline as ventilation air methane (VAM) abatement is undertaken at gassy underground mines starting in 2032–33 (NSW DCCEEW, n.d., 2026e). By 2035, the projections assume 1.4 $MtCO_2$-e of on-site abatement from fugitive emissions abatement at Safeguard-covered mines (NSW DCCEEW, 2026e).

The Commission's Coal Mining Emissions Spotlight Report (Box 7) highlighted the important role the coal mining industry plays in meeting NSW's legislated targets and Australia's international obligations under the Paris Agreement.

Box 7: Findings from the Coal Mining Emissions Spotlight Report

1. In order for NSW emissions targets to remain achievable, on-site abatement at existing mines is essential, particularly to reduce fugitive emissions. Additional regulatory measures will be required to achieve measurable on-site abatement.
2. The Commonwealth and NSW Governments are working to improve the accuracy of fugitive emissions reporting at open cut coal mines. Collaboration across these efforts could accelerate and strengthen outcomes.
3. Consistent with the objectives of the Climate Change Act, NSW consent authorities need to meaningfully consider greenhouse gas emissions and their impacts in all planning decisions, including those for additional coal mining.
4. Continued extensions or expansions to coal mining in NSW are not consistent with the emissions reduction targets in the Climate Change Act or the Paris Agreement temperature goals it gives effect to.
5. NSW Government will need to prioritise its consideration of policies that systematically prepare for the decline of coal extraction and provide for a just and orderly transition for coal-producing communities and impacted regional economies.

New requirements for underground mines to address fugitive methane are welcome but more action is needed, including at open cut coal mines

The EPA released its Greenhouse Gas Mitigation Guide for NSW Coal Mines (Coal Guide) in March 2026. The Coal Guide sets out the greenhouse gas mitigation measures that existing coal mines (licensees) and proponents of new coal mining projects and modifications must consider as part of their climate change mitigation and adaptation plans and planning applications.[36] The Coal Guide also introduces requirements for on-site abatement of fugitive emissions from drainage gas and old mine workings at underground mines beginning in 2027. Requirements for VAM abatement at gassy underground mines will be phased in from 2030, beginning with the highest-emitting group of mines (NSW EPA, 2026).

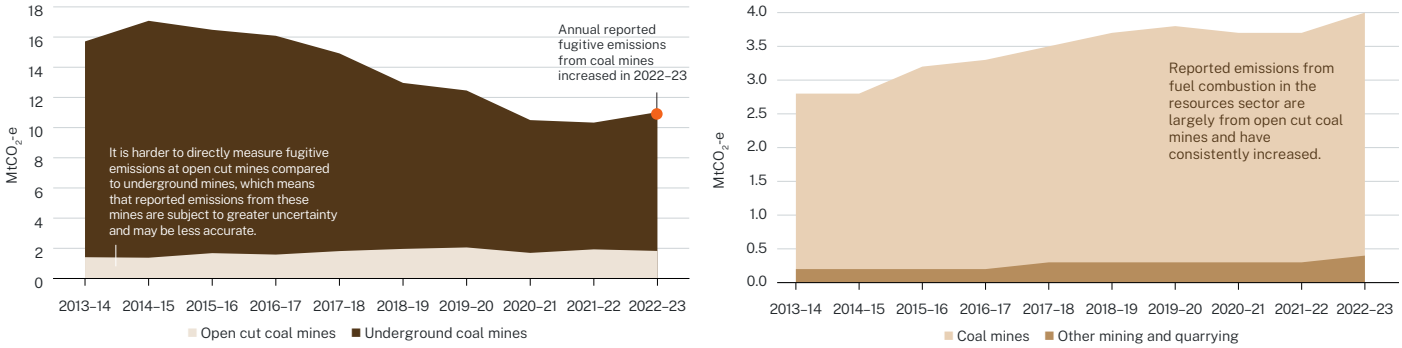
The Coal Guide strengthens policy settings for on-site abatement, however it is unclear how much additional abatement its requirements will support. The EPA itself notes that the guide is insufficient to reduce fossil methane in line with 2030 and 2035 targets (NSW EPA, 2026).

There are challenges to VAM abatement at NSW coal mines, but the Commission considers that these are surmountable. More effective collaboration between the NSW Resources Regulator and EPA is needed. Assistance from the Resources Regulator in demonstrating how regenerative thermal oxidisation (RTO) technology can be safely deployed in NSW will be particularly important (Net Zero Commission, 2025a).[37] The planned demonstration project at GM3's Appin mine in partnership with Anguil Environmental and Gasco will provide valuable local insight (GM3, 2024).

36 Note the EPA Coal Guide was not included in the 2025 projections policy scenario as it was published after modelling was complete.

37 The safe deployment of RTOs in a range of contexts at coal mines overseas indicates VAM abatement can be deployed in NSW (UNECE, 2025; Walddörfer, 2024). NSW previously also had a successful VAM-to-power facility at the West Cliff mine involving 4 RTOs and running from 2007 to 2017 (NSW EPA, 2026).

Figure 23: NSW coal mining fugitive emissions (chart on the left) and fuel combustion emissions (chart on the right)



Source: Commission analysis of the 2022–23 inventory (Cth DCCEEW, 2025j).

Though it notes that all coal mines should minimise fugitive methane emissions, the Coal Guide does not introduce requirements for open cut mines. This is a significant gap, given NSW coal mining fuel combustion emissions rose 37% between 2013–14 and 2022–23, driven by diesel use at open cut mines (Figure 23). These mines have fewer options for addressing fugitive emissions, however on-site abatement options such as gas pre-drainage are emerging.[38]

While open cut coal mines are understood to be less gassy than underground operations, studies have suggested their fugitive emissions may be underreported (Climate Change Authority, 2023; Shen et al., 2023). Following the launch of a pilot network in the Hunter region, the NSW Government is establishing a regional monitoring network for greenhouse gases to help validate bottom-up fugitive emissions reporting (NSW EPA, 2025c; NSW Government, 2026e). This will reduce uncertainty and improve the accuracy of emissions reporting at open cut mines (Net Zero Commission, 2025a). It is important for the NSW Government to progress this work and engage with Commonwealth efforts to incorporate atmospheric measurement into emissions reporting.[39]

Fuel combustion emissions have risen across the mining industry, driven by open cut coal mining (Figure 23). Electrifying heavy machinery is challenging but solutions are emerging.[40] In the short term, on-site operational changes could improve fuel efficiency and reduce diesel combustion emissions at coal mines, as could retrofitting internal combustion equipment and vehicles with hybrid engines (Aytaç & Erkayaoğlu, 2025).[41] As discussed in Section 2.2, the Commission considers that reform of the Commonwealth FTC scheme could enhance signals for mine operators to reduce diesel use.[42] Fuel tax credit refunds in the resources sector are material. Commission analysis indicates that NSW's 37 coal mines received an estimated $500 million in FTCs in 2022–23, the same year that coal mining fuel combustion emissions rose to a record high.[43] A change to this national policy could have a significant effect on NSW's emissions from diesel use.

Recommendation 5E: The NSW Government should lead advocacy for Commonwealth policy changes that support and drive emissions reductions, such as fuel tax credit reform.

38 New Hope Group is investigating gas pre-drainage at its open cut Bengalla Mine (New Hope Group, 2024).

39 Following advice from the Climate Change Authority, the Commonwealth Government is reviewing fugitive emissions reporting methods for open cut coal mines and has commissioned an expert panel to advise on the top-down approaches to fugitive emissions reporting, including atmospheric measurement (Cth DCCEEW, 2025n).

40 Epiroc has a range of electric mining trucks for underground applications, while BHP and Rio Tinto have partnered to trial Komatsu and Caterpillar electric haul trucks for their iron ore mining operations in the Pilbara (BHP, 2024; Epiroc, 2026).

41 Commission consultation with mining OEMs revealed hybrid retrofit engines significantly improve fuel efficiency.

42 One model for FTC reform proposed by Climate Energy Finance and supported by Fortescue suggests introducing an annual $50 million cap on FTC claims, with credits paid on the condition that the receiving entity invests in decarbonisation capex projects. The OECD has also called for the consideration of FTC reform for off-road vehicles and machinery (OECD, 2023a; Pollard & Buckley, 2025).

43 Calculated using ATO data on FTC rates and Australian Energy Statistics diesel conversion factors and data on NSW coal mining diesel use (Australian Government, 2026; Cth DCCEEW, 2025b, 2025l Table F).

The Safeguard, which was reformed in 2023 and generally requires emitters to reduce annual net emissions by 4.9% on an emissions intensity basis, covered 92% of NSW coal mining emissions in 2022–23 (Cth DCCEEW, 2025h).[44] Annual emissions from Safeguard-covered NSW coal mines have remained relatively stable since 2023, reducing by 0.5 $MtCO_2$-e in 2023–24 and then increasing by 0.4 $MtCO_2$-e in 2024–25 (Clean Energy Regulator, 2025a).

Safeguard facility ACCU surrender statements from the 2024–25 reporting year indicate that some covered NSW coal mines are considering opportunities for additional on-site abatement in future years and the 2025 NSW Government projections assume the Safeguard will drive some on-site abatement from 2032–33.[45] However, the projections forecast that most Safeguard obligations will be met through carbon credits or other flexibility mechanisms, which are projected to make up 96% of required emissions reductions in 2029-30 and 77% in 2034-35 (NSW DCCEEW, 2026e, Figure 26). The Safeguard is therefore unlikely to drive on-site abatement in line with NSW's 2030 and 2035 legislated targets. A Commonwealth review of Safeguard settings is scheduled for 2026–27 and could provide an opportunity to tighten emissions reduction requirements (Cth DCCEEW, 2025h).

Given NSW coal mining emissions are likely to increase even with policy settings supporting some additional on-site abatement, it is critical that consent authorities meaningfully consider emissions when assessing applications to expand or extend mining (Box 7) (Net Zero Commission, 2025a).

Continued approval of coal mining extensions and expansions is a barrier to resources sector decarbonisation and achievement of legislated targets

The Coal Mining Emissions Spotlight Report found continued extensions and expansions to coal mining in NSW are inconsistent with NSW's legislated targets (Box 7). All emissions associated with these projects make achieving the emissions reduction targets harder.

In March 2026 the NSW Government published NSW Coal Industry 2026–50, updating its whole-of-government position on coal mining.[46] The new position includes an expectation that emissions from the coal industry will decline consistent with NSW's targets. It is unclear how this will be achieved, because coal mine extensions and expansions will still be considered and NSW Government expects employment from these will continue "for decades to come" (NSW Government, 2026b, p. 6).

The document prohibits greenfield coal mining, but as no mines of this type have been approved since 2018, this prohibition is more symbolic than material.[47] The Commission therefore considers the NSW planning system as a critical point of intervention to support the legislated emissions reduction targets in the Climate Change Act. The Commission wrote to the Secretary of DPHI in May 2026 to ask how the NSW Government's new position will inform assessment of coal mining extension and expansion applications and offer its support to develop guidance that would improve the consideration of emissions in these assessments (Net Zero Commission, 2026a).[48]

44 Commission calculation using 2022–23 total NSW coal mining emissions in 2024 NSW inventory data and 2022–23 Safeguard Mechanism baselines and emissions data (Clean Energy Regulator, 2025c; Cth DCCEEW, 2025h; NSW DCCEEW, n.d.).

45 Companies with facilities that meet 30% or more of their Safeguard baselines using ACCUs are required to publish ACCU surrender statements that explain why more on-site abatement was not achieved (Clean Energy Regulator, 2025a). 2024–25 Safeguard reporting year ACCU surrender statements from Ashton Coal Mine (Underground), Bengalla Operations, DEN01, Narrabri Underground Mine and Warkworth Mine indicate that mine owners are considering upgrades and other opportunities that could increase on-site abatement in future years.

46 NSW Coal Industry 2026–50 updates the previous government's Strategic Statement on Coal Exploration and Mining in NSW (Department of Regional NSW, 2020; NSW Government, 2026b).

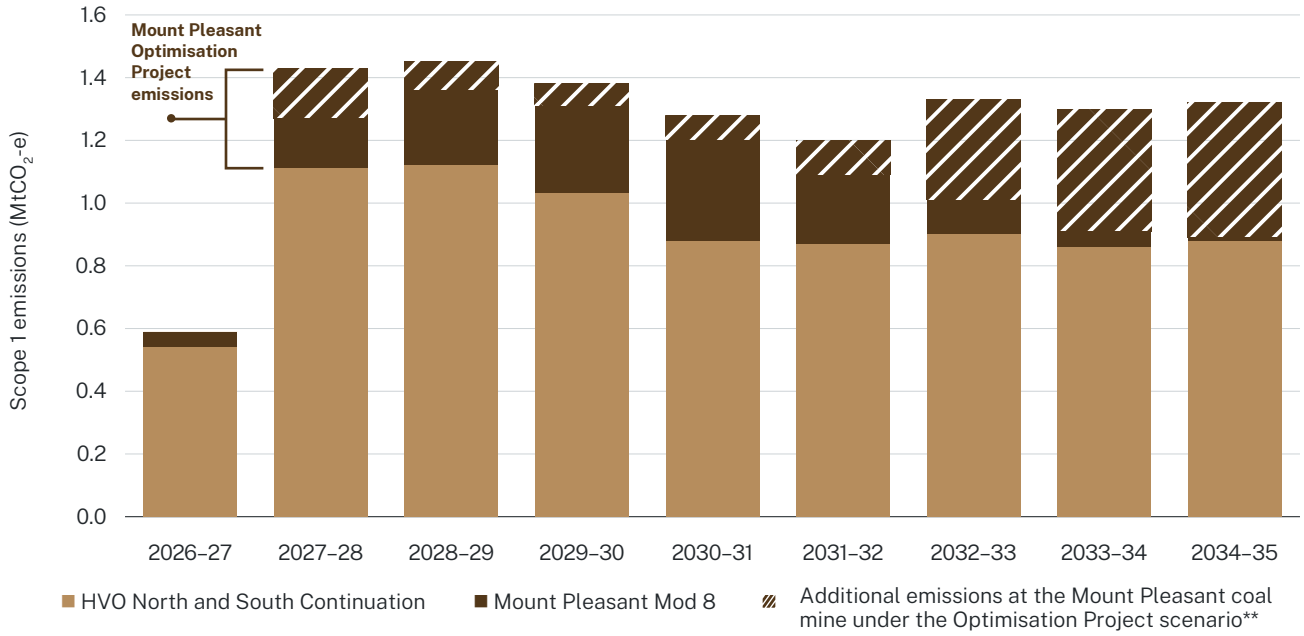
47 Commission analysis of coal mine projects via the NSW Major Projects Planning Portal indicates that the Wallarah 2 Coal Mine was the last greenfield coal mine approved in NSW in 2018 (NSW DPHI, 2018).

48 This correspondence follows the Commission's letters to DPHI and the IPC in September 2025, which included recommendations for consent authorities to integrate emissions considerations into planning approvals and assessment reports (Net Zero Commission, 2025c, 2025d).

There were 20 coal mining expansion and extension projects in the planning system as of 1 June 2026.[49] According to project documents, scope 1 (project-only) emissions from Hunter Valley Operations North and South Open Cut Continuation Project and Mount Pleasant Modification 8 alone could add 1.3 $MtCO_2$-e to NSW emissions in the 2030 target year and 0.9 $MtCO_2$-e in the 2035 target year (Figure 24).

The total contributions of the Mount Pleasant coal mine to NSW's emissions in 2029–30 and 2034–35 could be higher if the approval of the Mount Pleasant Optimisation Project is reinstated (see Figure 24). The 2025 projections forecast a 10–20 $MtCO_2$-e economy-wide overshoot in 2030 and a 21–24 $MtCO_2$-e economy-wide overshoot in 2035 (NSW DCCEEW, 2026e).

Figure 24: Estimated scope 1 emissions from proposed expansions or extensions to Hunter Valley Operations and Mount Pleasant* coal mines



Source: Annual project-only scope 1 gross emissions, according to project documents (Hunter Valley Operations, 2025, Annexure D, Table D.1; MACHEnergy, 2021 Attachment A, Table 2-3, 2025, Attachment A, table 2-7).[50]

* At time of publication, the approval of the Mount Pleasant Optimisation Project is subject to ongoing litigation.

** Mod 8 and the Optimisation Project are two alternative project scenarios for Mount Pleasant Coal Mine. Mod 8 would modify the existing development consent to extend operations until 2032, while the Optimisation Project would rely on a new development consent, extending the mine's life to 2048.

Overseas emissions from the combustion of NSW coal have local impacts

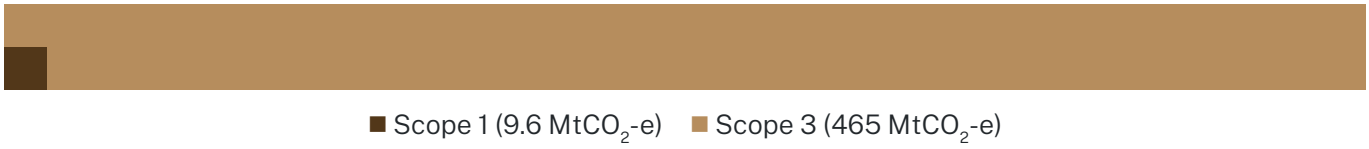
Eighty-seven per cent of NSW coal is burnt overseas and the emissions released during this combustion are significant and make up the majority of coal mining scope 3 emissions (Montoya, 2025). Cumulative downstream emissions from the end use of coal associated with HVO North and South Continuation and Mount Pleasant Modification 8 would total 465 $MtCO_2$-e between 2026–27 and 2034–35 (Figure 25). This is almost 4 times NSW's 2022–23 economy-wide greenhouse gas emissions (Cth DCCEEW, 2025j).

49 Search of Major Projects Planning Portal on 1 June 2026.

50 Note on emissions from Mount Pleasant Optimisation Project: Emissions in Figure 24 are adopted from the project's Greenhouse Gas Assessment (Appendix S to its EIS) (MACHEnergy, 2021, Attachment A, Table 2-3). Figures from a revised emissions estimate dated 31 March 2022 were not used because that document did not provide annualised, updated project scope 1 emissions. (MACHEnergy, 2022). As the project is not operational at time of publication, the project's first year of operation and associated emissions is assumed to be 2027–28, instead of 2022–23 as presented in the EIS.

Note on emissions from Mount Pleasant Mod 8: As the project is undergoing assessment and not operational at time of publication, the project's first year of operation and associated emissions is assumed to be 2026–27, instead of 2025–26 as presented in the project document (MACHEnergy, 2025, Attachment A, Table 2-7).

Figure 25: Project documents indicate scope 3 emissions from the downstream combustion of coal would be 48 times bigger than scope 1 emissions for HVO North and South Continuation and Mount Pleasant Mod 8 projects between 2025–26 and 2034–35



Source: Project-only scope 1 emissions and scope 3 emissions from the downstream combustion of coal according to planning documents (Hunter Valley Operations, 2025, Annexure D, Table D.1,D.2; MACHEnergy, 2025, Attachment A, Table 2-7). See footnote on Figure 24 for key project emissions-related assumptions.

Overseas downstream emissions do not directly impact NSW's legislated targets, but they contribute to rising temperatures and climate instability both globally and locally. This makes it harder to respond to climate impacts and for NSW to fulfil its legislated adaptation objective to improve climate resilience (Lee et al., 2023; Net Zero Commission, 2025a).

In July 2025, the NSW Court of Appeal overturned the approval of the Mount Pleasant Optimisation Project, which proposes extending the operational lifetime of the Mount Pleasant mine to 2048. The court found that the IPC failed to consider the local impacts of climate change resulting from the project's emissions, particularly scope 3 emissions.[51] The project proponent has appealed to the High Court and, as of 30 June 2026, its decision is pending.[52] Reforms to NSW's planning framework are needed so that consent authorities are required to meaningfully consider greenhouse gas emissions from such projects, as highlighted by the Commission's Coal Mining Emissions Spotlight Report (Finding 3, Box 7).

Declining coal demand exposes certain regions of NSW to socio-economic risks that will need to be managed

After reaching around 200 Mt in 2019–20, NSW's coal production declined for several years before increasing slightly in 2023–24 (Figure 26) (Cth DCCEEW, 2025l). Australian Government forecasts indicate that Australia's thermal and metallurgical coal export volumes will remain relatively stable in the short term (Cth DISR, 2025, p. 14 Table 1.2). Global coal demand is expected to decline over the medium to longer term. All International Energy Agency scenarios project global coal use to peak and begin declining before the end of the decade, before falling by 22–92% by 2050 (IEA, 2025b).

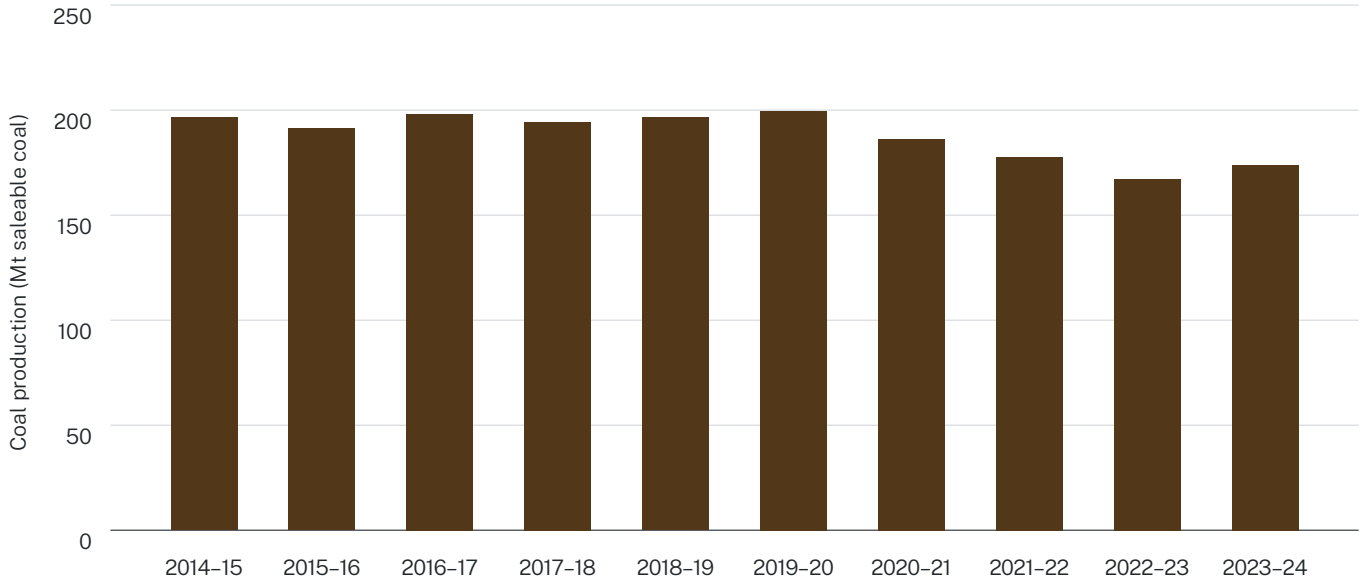
The projected decline of thermal coal demand exposes communities in coal-producing regions and the wider state to economic risks, as 88% of coal mined in NSW is thermal coal.[53] Policies that systematically prepare for declining coal extraction can support a just and orderly transition (Cth Treasury, 2025a; Net Zero Commission, 2025a). The NSW Government is establishing the Future Jobs and Investment Authority to support coal-producing regions secure their long-term economic future as global demand declines (NSW Government, 2026a). Complementary supply-side policies building on the NSW Government's prohibition of greenfield coal mining would improve preparedness.

51 *Denman Aberdeen Muswellbrook Scone Healthy Environment Group Inc v MACH Energy Australia Pty Ltd* [2025] NSWCA 163.

52 *MACH Energy Australia Pty Ltd ABN 34608495441 v Denman Aberdeen Muswellbrook Scone Healthy Environment Group Inc & Anor* (S174/2025).

53 Japan, China, Taiwan and South Korea buy 75% of coal mined in NSW. Japan and Taiwan have net zero 2050 targets, South Korea has a 2050 carbon neutrality target and China has a net zero 2060 target (Net Zero Commission, 2025a; NSW Treasury, 2024).

Figure 26: NSW annual coal production



Source: Cth DCCEEW, 2025l, Table P.

Recommendation 4A: The NSW Government should develop and deliver policies that implement the findings of the Commission's Coal Mining Emissions Spotlight Report, in particular the need for consent authorities to meaningfully consider project emissions and their impacts in planning decisions (Finding 3).

Resources sector emissions outside coal mining are small but could increase

Emissions from other mining and quarrying, such as gold and copper mines, were small in 2022–23 but are increasing. Commonwealth and NSW Government policies highlight ambitions to expand the production of emerging 'critical' minerals for the energy transition, energy security, defence and economic security (Cth DISR, 2023; NSW DPIRD, 2024b).

The Commission will continue to monitor trends in emissions from emerging mineral and metal mining projects. Policies and programs to foster investment in new industries should seek to minimise associated emissions and ecological impacts, and ensure project benefits flow to local communities, including First Nations communities.

Emissions from NSW's oil and gas industry remained low in 2022–23.[54] These will increase if the Narrabri Gas project, which is among the first tranche of projects endorsed by the Investment Delivery Authority, goes ahead.[55] Project planning documents estimate that emissions from the Narrabri Gas Project in a typical operating year would be 0.53 $MtCO_2$-e.[56] This represents over 3% of resources sector emissions in 2022–23 and is almost equivalent to total direct emissions from the NSW oil and gas sub-sector.

54 Commission analysis of the 2022–23 inventory (Cth DCCEEW, 2025j).

55 Full operation of Narrabri Gas project will be contingent on the construction of the Queensland-Hunter Gas Pipeline and Narrabri Lateral Pipeline. As of 26 March 2026, the Narrabri Gas project and Queensland-Hunter Gas Pipeline have been approved. The Narrabri Lateral Pipeline is undergoing planning assessment (NSW DPHI, 2019, 2020b, 2026a; NSW Government, 2026c).

56 IPC Statement of Reasons suggests total project emissions would be 15.5 $MtCO_2$-e. This indicates the project would use grid-sourced electricity, using typical operating year emissions from Santos's Option 2 (O'Connor et al., 2020; Santos, 2016).

Resources sector policy assessment

STRONG, ON TRACK | STRONG, DELAYED | **PARTIAL** | LIMITED

- ✓ EPA Coal Guide introduces regulatory, timebound requirements for on-site emissions reduction at underground coal mines, starting with highest emitting mines first
- ✓ Prohibition of future greenfield coal development
- ? The Future Jobs and Investment Authority will support transition for coal-producing regions as demand for coal declines, but a proactive approach to managing these risks and transitioning regional economies to new industries is needed
- ✗ Commonwealth Safeguard Mechanism is insufficient to incentivise on-site abatement at NSW coal mines in line with NSW legislated emissions reduction targets and Commonwealth fuel tax credits disincentivise electrification
- ✗ No specific NSW requirements for the resources sector to reduce emissions from fuel combustion or at open cut mines
- ✗ NSW consent authorities have no explicit legal obligation to assess coal mining projects' contributions to emissions against the state's legislated targets, nor do they have formal guidance to assess the downstream impact of emissions from coal once it is burnt

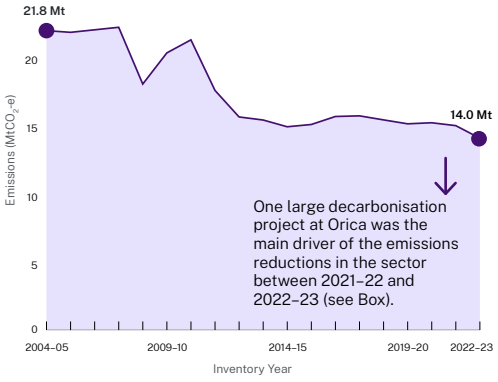
2.8 Industry sector

Emissions overview

In NSW, 6 industrial facilities were covered by the Safeguard Mechanism and accounted for 71% (10.0 $MtCO_2$-e) of industry sector emissions. The remaining 29% (4.0 $MtCO_2$-e) came from a diverse mix of facilities of all scales.

Emissions over time ($MtCO_2$-e)

The industry sector generated 10% (14.0 $MtCO_2$-e) of NSW's total emissions in 2022–23. Since 2005, emission levels have decreased by 36% (7.8 $MtCO_2$-e), largely due to declining production and incremental efficiency improvements, rather than structural decarbonisation.



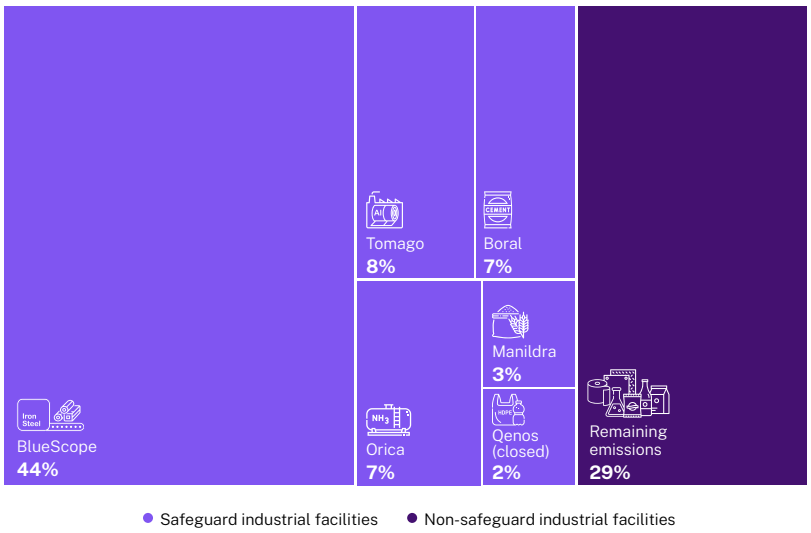
-36% change since 2004–05

-0.9 Mt change in 2022–23

Source: Commission analysis of the 2022–23 inventory (Cth DCCEEW, 2025j).

Composition of 2022–23 Emissions

By Sub-sector
% of sector



Source: Clean Energy Regulator, 2025a.

Adam McLean

Large facilities have plans for decarbonisation, but delivery is constrained by technology readiness and commercial realities

Many high-emitting industrial facilities have sustainability targets for 2030 and 2035 and plans to reach net zero by 2050.[57] Electrification is already feasible for many low and some medium-temperature processes. However, delivering deep abatement in heavy industry is difficult because a large share of emissions comes from high temperature process heat. Decarbonising the production of steel, cement, bricks, and ammonia will likely require green hydrogen,[58] bioenergy or new electric technologies (such as electric smelting furnaces) that are not yet commercially available (IEA, 2025a; CSIRO, 2026). These barriers are amplified by long asset lifetimes, high capital costs and uncertain access to low-cost renewable energy and enabling infrastructure (Bocca, 2024). Overall, significant reductions in emissions from heavy industry are likely to occur only as technology and enabling infrastructure mature, supported by coordinated policy and investment frameworks.

The cases of the BlueScope steelworks and Tomago Aluminium illustrate these challenges. BlueScope has set interim targets for 2030 and a net zero scope 1 and scope 2 target by 2050, but notes its pathway depends on technology readiness, renewable electricity and hydrogen. BlueScope's preferred options: electric smelting furnaces; hydrogen-based direct reduced iron (with natural gas as an interim step before green hydrogen); and process efficiency and circularity, require significant capital investment and supporting infrastructure and have decade-long planning and development timeframes (BlueScope, 2025b, 2025a).

Similarly, Tomago, which consumes around 10% of NSW's electricity, has emissions largely driven by electricity use. Its commitment to sourcing 100% renewable electricity by 2035 could reduce emissions by around 85% (The Australian Mining Review, 2024) but depends on securing long-term, firmed renewable energy at stable prices ahead of its current electricity contract expiring in 2028 (Tomago Aluminium, 2025). Together, these cases highlight the need for coordinated government and industry action.

At the same time, where technologies are proven and enabling conditions are in place, rapid progress is possible. Orica's decarbonisation pathway demonstrates how clear technology choices, aligned infrastructure and policy support can enable projects to move quickly from funding to delivery, resulting in material emissions reductions (see Box 8).

Box 8: Orica case study

Orica cut emissions at its Kooragang Island site in Newcastle by 48% between 2019 and 2024 due to state and Commonwealth financial support, reducing Australia's total chemical industry process emissions by 11% (CEFC, 2025).[59]

Orica reports that abatement across the site's nitric acid plants improved plant performance and cut process emissions by 95% in 2024 compared to 2019 levels (Net Zero Economy Authority, 2025) and is expected to abate about 0.5 $MtCO_2$-e per year (CEFC, 2025).

This first step has created a platform for further decarbonisation options, such as carbon capture technology development (Orica, 2026), stronger low carbon supplier partnerships, and pathways to low-emissions ammonia, including the creation of a Newcastle hydrogen hub (CSIRO, 2025).

57 Information on sustainability and net zero commitments accessed on 26 March 2026 from the following webpages: Boral; Orica; Manildra; BlueScope; Rio Tinto – Tomago.

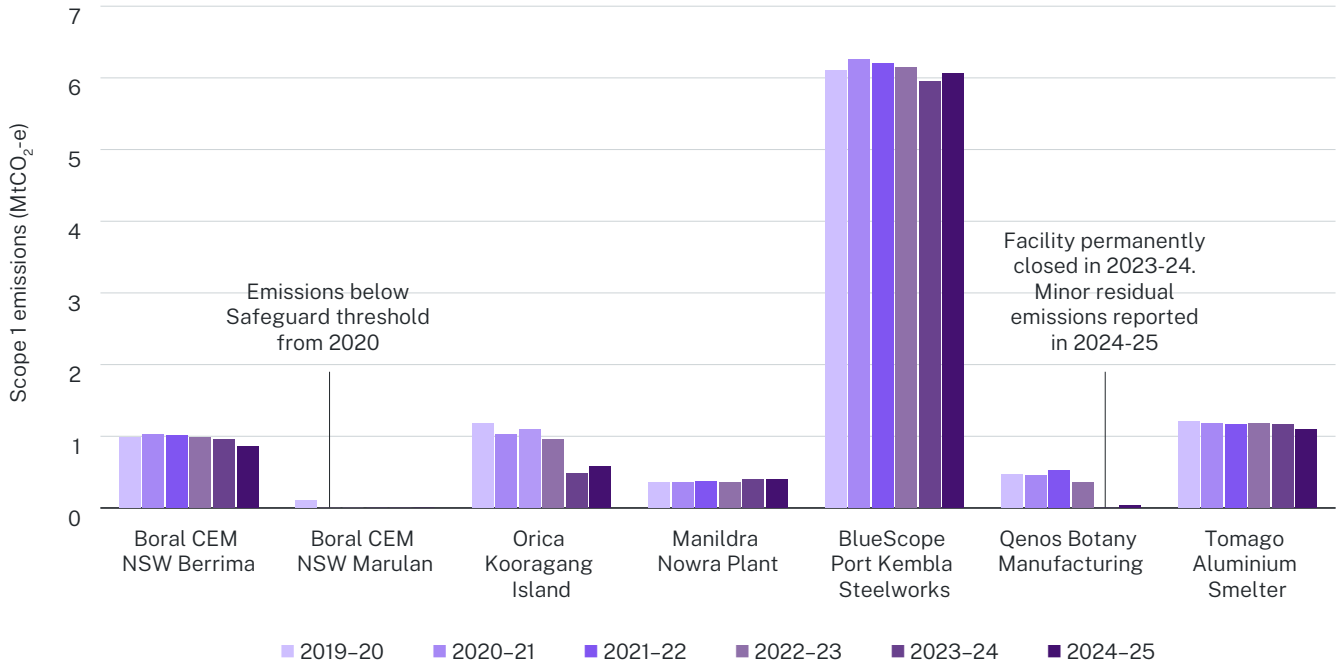
58 There has been uncertainty about the supply of green hydrogen in NSW, as illustrated by the recent delays and changes in green hydrogen projects in the Hunter (Maryniak, 2025; Origin Energy, 2024).

59 Orica received $13 million from the NSW Government's Net Zero Industry and Innovation Program and $24 million financing from the Commonwealth's Clean Energy Finance Corporation in 2021 (CEFC, 2023).

Despite compliance with the Safeguard Mechanism, large-scale abatement to date has been limited

The Safeguard Mechanism is the primary Commonwealth policy to reduce emissions from industrial facilities that emit more than 100,000 tCO_2-e per year. In NSW, 6 operating industrial facilities were covered in 2022–23 and most reduced their emissions only modestly to meet their baselines between 2019 and 2025 (Figure 27).[60] However, Safeguard baselines are not in line with NSW's 2030 and 2035 targets.

Figure 27: Scope 1 emissions from industrial sector facilities covered by the Safeguard Mechanism, 2019–2025



Source: Clean Energy Regulator, 2025a.

While some stakeholder submissions to the Commission's 2025 consultation called for more ambitious requirements on industrial facilities, others highlighted the risk of reduced international competitiveness (Net Zero Commission, 2025b). The Commonwealth's Carbon Leakage Review acknowledges the risk that strict emissions reduction requirements could shift production (and emissions) offshore (Cth DCCEEW, 2025a). It recommends a Border Carbon Adjustment similar in intent to the EU's Carbon Border Adjustment Mechanism. This could materially change investment signals for trade-exposed NSW facilities, such as BlueScope, by rewarding early movers and accelerating abatement (Cth DCCEEW, 2025a).

60 Noting that BlueScope and Orica's emissions increased slightly between 2023–24 and 2024–25, due to increased production volumes.

The Safeguard Mechanism must be backed by coordinated Commonwealth and NSW funding programs

To accelerate industrial decarbonisation, further coordinated policy action is needed across all levels of government. In September 2025, the Commonwealth Government released the Industry Sector Plan, which relies heavily on the Safeguard Mechanism to drive emissions reductions. Over the longer term, the plan includes supply-side funding measures to help commercialise and deploy new technologies and scale key enablers such as hydrogen and alternative fuels to replace natural gas. Key measures include the Future Made in Australia Innovation Fund and the Net Zero Fund (Cth DISR & Cth DCCEEW, 2025). These programs represent substantial announced public investment but are at an early stage, and as such, their effectiveness is yet to be demonstrated (Climate Change Authority, 2025).

In NSW, the Net Zero Industry and Innovation Program under the Net Zero Plan: Stage 1 is the main support mechanism for emissions reductions at high-emitting facilities. Funding for high-emitting facilities is now referred to as the Industrial Decarbonisation Initiative, with two funding agreements executed with Safeguard facilities to date.[61] Clean fuel supply is being supported through the Renewable Gas Production Program[62] and Hydrogen Hubs Initiative,[63] which co-fund infrastructure and early hydrogen projects to de-risk investment. However, these programs remain relatively small in scale and focused on demonstration and early deployment, rather that the system-wide rollout needed to support industrial fuel switching at scale.

Government support may need to extend beyond capital grants to ongoing operational support, such as electricity supply agreements or production credits (such as the Commonwealth's Green Aluminium Production Credit) (Cth DCCEEW, 2025c; Denis-Ryan, 2026), noting that the design and fiscal implications of any production credits remain unclear and could be material for taxpayers. Support should be tightly targeted to industries with a durable, long-term competitive advantage in NSW (Cth Treasury, 2024b).

Process heat decarbonisation needs targeted support beyond the Safeguard Mechanism

In 2024 most natural gas use for industrial process heat in NSW came from facilities covered by the Safeguard. Non-Safeguard facilities (largely small and medium enterprises) account for a smaller share of gas use and emissions while representing the majority of industrial businesses and jobs in NSW (DETA Consulting, 2026).

Decarbonisation options vary significantly among industrial sub-sectors because they operate across a wide range of process temperatures (Figure 28). Low-to-medium temperature processes, common in food processing and pulp and paper, can be more readily electrified using commercially available technologies such as industrial heat pumps, often supported by thermal storage (IEA, 2025). While these technologies are increasingly cost competitive with gas on a levelised cost-of-heat basis, adoption is hindered by capital costs, electricity tariff structures and limited technical capability (Rubenach & Adams, 2026).

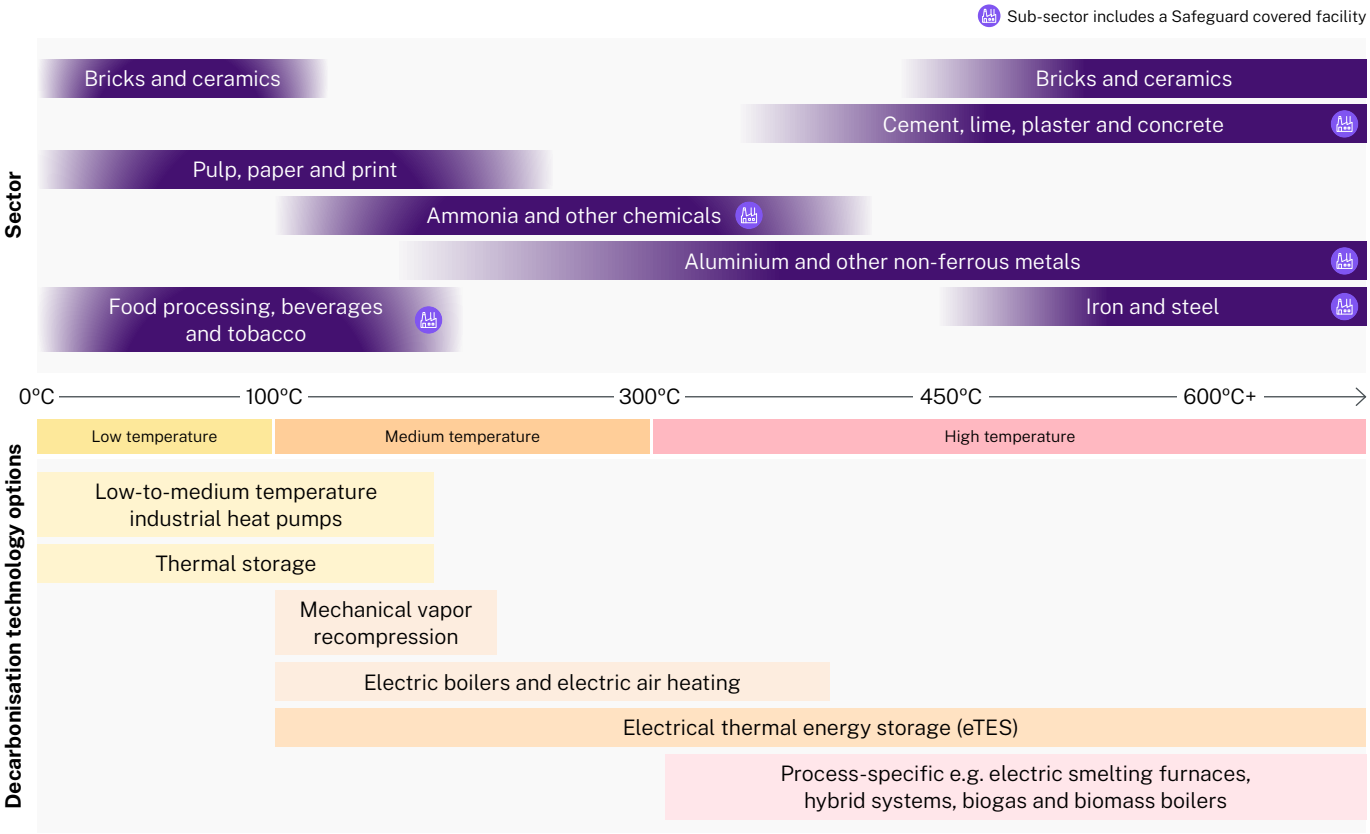
61 Orica Kooragang Island received ~$13 million to deliver its tertiary abatement project. Approx. $25 million has been allocated to Boral Cement to convert its cement kiln from coal to waste-derived fuels.

62 Renewable Gas Production Program | NSW Government

63 Hydrogen hubs in NSW | NSW Climate and Energy Action

Tailored policy support and funding is required to help small and medium facilities overcome barriers to electrification and fuel switching. The NSW Government could leverage existing mechanisms such as the ESS and the PDRS to address upfront cost barriers for readily deployable technologies like low-to medium-temperature industrial heat pumps. Complementary reforms, including place-based coordination with electricity networks and tariff reform, could further improve the economic case for decarbonisation for more energy-intensive sub-sectors.

Figure 28: Decarbonisation technology options across different process heat temperatures and sectors



Source: DETA Consulting, 2026; EnergyLink, 2025; ITP, 2025.

Recommendation 3E: The NSW Government should incentivise electrification of low-to-medium temperature process heat, including by helping businesses understand and adopt electric options and reforming existing schemes to reduce financial barriers.

A regional approach could unlock system-wide abatement beyond individual facilities

> **Instead of a facility-by-facility approach, funding should lean towards backbone infrastructure that serves multiple facilities in precincts."**
>
> Beyond Zero Emissions submission to the Commission's 2025 consultation

Decarbonisation could potentially progress faster in areas with concentrated industrial activity, where large energy users may support the deployment of shared energy infrastructure for electricity, hydrogen or heat storage systems (ITP, 2025). Such industrial precincts could provide an opportunity to shift NSW up global value chains, diversify the economy, and support the development of higher-value industries that generate high-wage jobs.

> **The Hunter Region has a capable, sophisticated and growing collection of clean energy and manufacturing focused companies some which already provide a variety of capabilities and services to the resources and energy, defence and other sectors"**
>
> NEW E-Cluster submission to the Commission's 2025 consultation

The NSW Government has some existing initiatives, including the NSW Industry Policy, regional Special Activation Precincts (SAPs), and decarbonisation studies (unpublished) for the Hunter and Illawarra (NSW DCCEEW, 2023; NSW Government, 2023; Investment NSW, 2025a). These initiatives aim to connect emissions reduction, advanced manufacturing, circular economy infrastructure, renewable energy and regional economic development that benefits local communities. While these initiatives establish an important foundation for regional industrial decarbonisation, progress to date has largely focused on planning and pathway development, with the delivery of shared infrastructure, coordinated investment and measurable emissions outcomes still emerging. In regions where the transition drives significant structural change, benefits should also be shared equitably with local communities, including First Nations peoples, through genuine participation, opportunities and long-term community benefit.

There is a need to develop a comprehensive, long-term plan for industrial decarbonisation in NSW

> **“To support NSW businesses where electrification is viable, a combination of education, technical guidance, and financial support – to help manage the high upfront cost of replacing fossil fuel-using equipment – is needed. Better quality data on fossil fuel use would help policymakers and the private sector deliver more industrial heat electrification”**
>
> Energy Efficiency Council submission to the Commission’s 2025 consultation

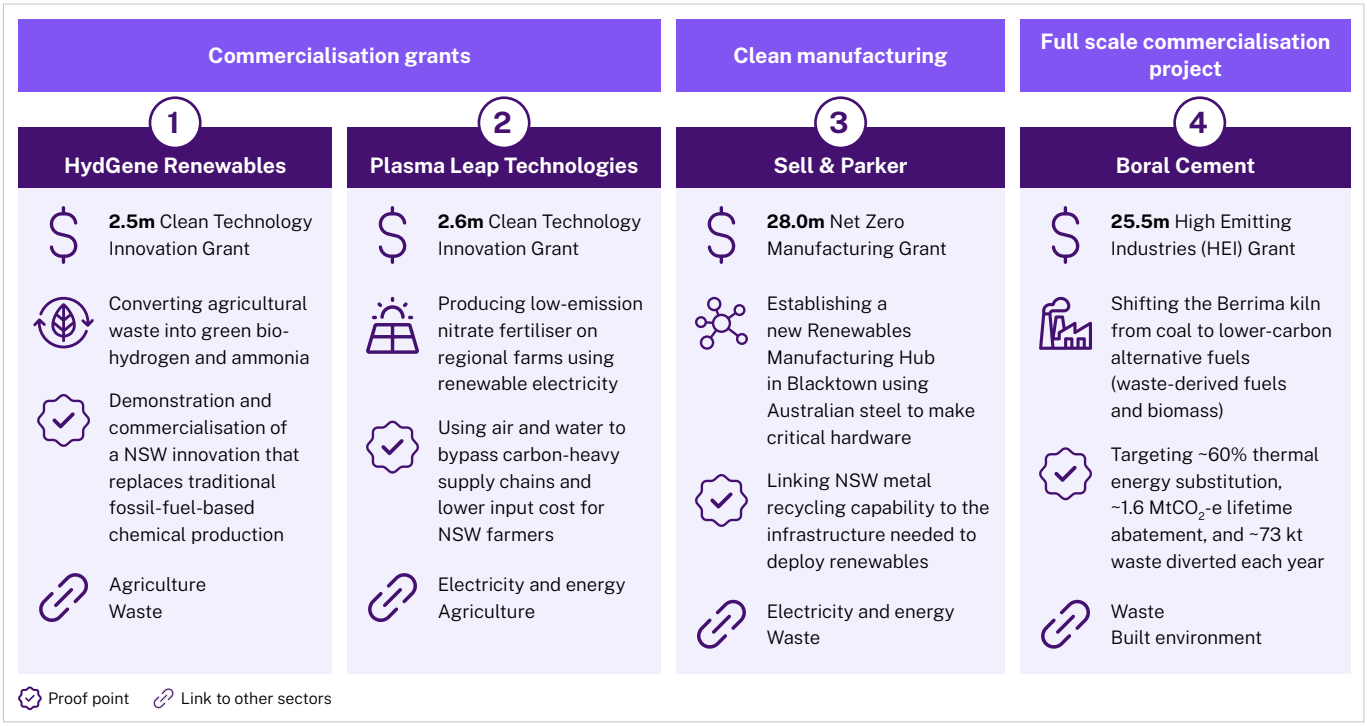
NSW does not currently have a long-term, place-based decarbonisation and investment plan for industry, nor a consistent approach to supporting facilities across the full decarbonisation journey. Limited visibility of facility-level energy, emissions and process data makes targeted, coordinated action difficult (DETA Consulting, 2026). Improving data transparency would enable better decision-making, more tailored support, and progress tracking.

A state-wide plan would provide clarity for industry and investors, align policy and funding over time, and support action from early innovation and capacity-building through to deployment and scale-up. It should account for the diverse starting points across industry and prioritise support for small and medium enterprises. The plan could also leverage existing programs, including the Industrial Decarbonisation Initiative and Net Zero Manufacturing Initiative, to drive further investment in established industrial clusters with strong capabilities and infrastructure such as the Hunter and Illawarra, while supporting growth in locations with new competitive strengths, such as REZs and SAPs. The UK’s Humber Industrial Cluster Plan demonstrates the value of this approach by integrating regional emissions data, infrastructure planning and industry collaboration to coordinate investment, and reduce delivery risk across multiple projects within a single industrial region (UK Research and Innovation, 2022).

For NSW, the plan could also be complemented by a stronger focus on export market development, recognising that domestic demand alone is unlikely to sustain globally competitive clean-technology industries and that integrating NSW firms, including small and regional businesses, into global value chains is critical to long-term productivity and growth.

Figure 29 shows examples of NSW Government support at different stages, from innovation through to commercialisation, for projects of varying scales and decarbonisation priorities (NSW DCCEEW, 2025i, 2025j, 2025k).

Figure 29: Examples of NSW funding for different decarbonisation priorities



Source: NSW DCCEEW, 2025i, 2025j, 2025k.

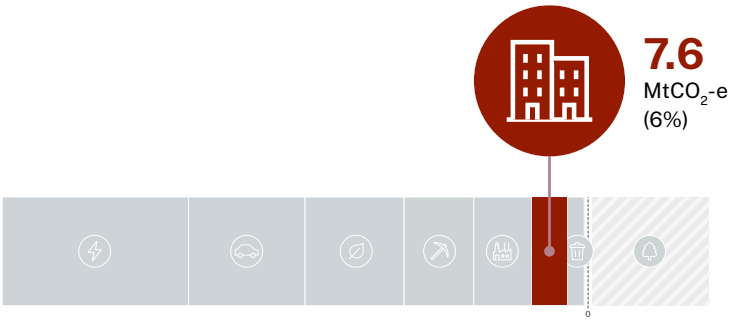
Recommendation 5A: The NSW Government should focus policy on existing and new industries that will be competitive in a net zero future and communicate priorities clearly to attract private sector investment, including through supporting innovation, demonstration and scale-up.

Industry sector policy assessment

STRONG, ON TRACK	STRONG, DELAYED	**PARTIAL**	LIMITED

- ✓ Safeguard Mechanism creates a policy framework for most sector emissions
- ✓ Sector plans, and Commonwealth and NSW funding programs support high-capital cost initiatives where competitiveness and first mover risks exist
- ✗ Facilities below the Safeguard threshold are not consistently supported or incentivised to decarbonise and the Safeguard baselines are not aligned with NSW's legislated targets
- ✗ The scale of government initiatives falls short of the investment required, particularly given competitiveness and energy supply challenges, including for emerging hydrogen and renewable electricity supply

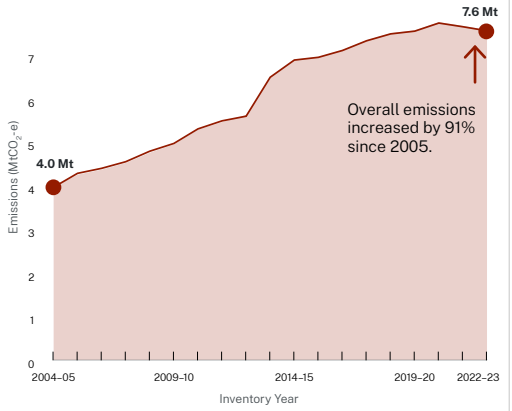
2.9 Built environment sector



Emissions overview

The built environment's direct emissions include combustion of fossil fuels in appliances and fugitive emissions from refrigerant use in all building typologies. Remaining sources are mostly fossil fuel use in construction machinery.

Emissions over time ($MtCO_2$-e)

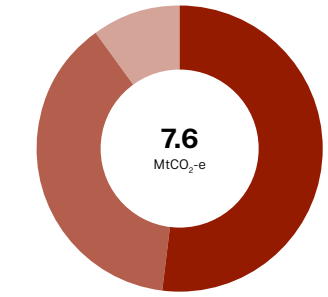


Emissions were driven by refrigerants, which increased **32%** in the last decade.

Emissions from fossil fuel usage remained largely stable.

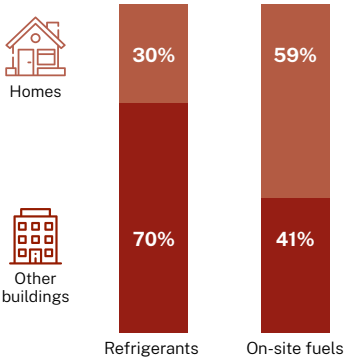
Composition of 2022–23 Emissions

By Sub-sector
$MtCO_2$-e and % of sector



On-site fuels **3.9** (52%)
Refrigerants **2.9** (38%)
Other sources **0.8** (10%)

By building type
% of sub-sector



The main source of emissions is the use of fuels. **52%**
This is mainly due to gas use for water and space heating, primarily in homes.

The second largest source of emissions is refrigerants, the majority from non-residential air-conditioning and refrigeration. **38%**

Other sources, mostly fuels used in construction, account for remaining emissions. **10%**

Source: Commission analysis of the 2022–23 inventory (Cth DCCEEW, 2025j).

Brinae Smith

The built environment is a small but fast-growing emissions source where solutions to reduce emissions are available

The built environment sector is responsible for a small but fast-growing and largely preventable share of NSW's emissions. The main emissions sources for this sector have commercially available low-or zero-emissions alternatives. Policy and development decisions made now can have lasting impact as building stock will be in operation for decades. NSW is not currently maximising this opportunity.

NSW can reduce emissions by lifting building performance beyond national standards and ending new gas connections

The latest update to the National Construction Code (NCC) was not as ambitious as it could have been due to perceived conflicts with goals to accelerate housing delivery (Cth DCCEEW, 2025m). The update introduced higher energy efficiency standards for commercial buildings including mandatory photovoltaic systems, but changes to residential standards were paused until 2029 (Australian Building Codes Board, 2026; Cth Treasury, 2025b). This is a missed opportunity to improve the standards of the homes being built towards the National Housing Accord targets (Cth Treasury, 2024a).

NSW can use existing frameworks such as the Sustainable Buildings SEPP and the Building Sustainability Index (BASIX) to close the gaps in national standards, enabling the delivery of healthier and thermally resilient buildings, and ensuring buildings are adapted to the future climate while also reducing emissions (see Box 9).

> **"The NSW Government should consider the merits of phasing out gas connections and appliances, which would not only support emissions reductions but encourage more modern, healthy, and affordable energy solutions in the built environment"**
>
> AGL submission to the Commission's 2025 consultation

NSW policy is already driving outcomes in new buildings but there is opportunity to go further and unlock bill savings for households and businesses. The Sustainable Buildings SEPP requires some new commercial buildings to be all-electric by 2035 (NSW DPHI, 2026b) and the highest BASIX energy scores can only be achieved by all-electric homes (NSW DPHI, 2025). Meanwhile, the NSW Government's land and property developer Landcom moved to all-electric developments in 2021 (Landcom, 2023). Victoria, the ACT and several overseas jurisdictions have mandated all-electric new buildings (ACT Government, 2021; Victoria Government, 2025), but NSW lacks an assertive policy on new and existing gas connections.

An electrification strategy for all buildings will avoid stranded gas assets and higher costs

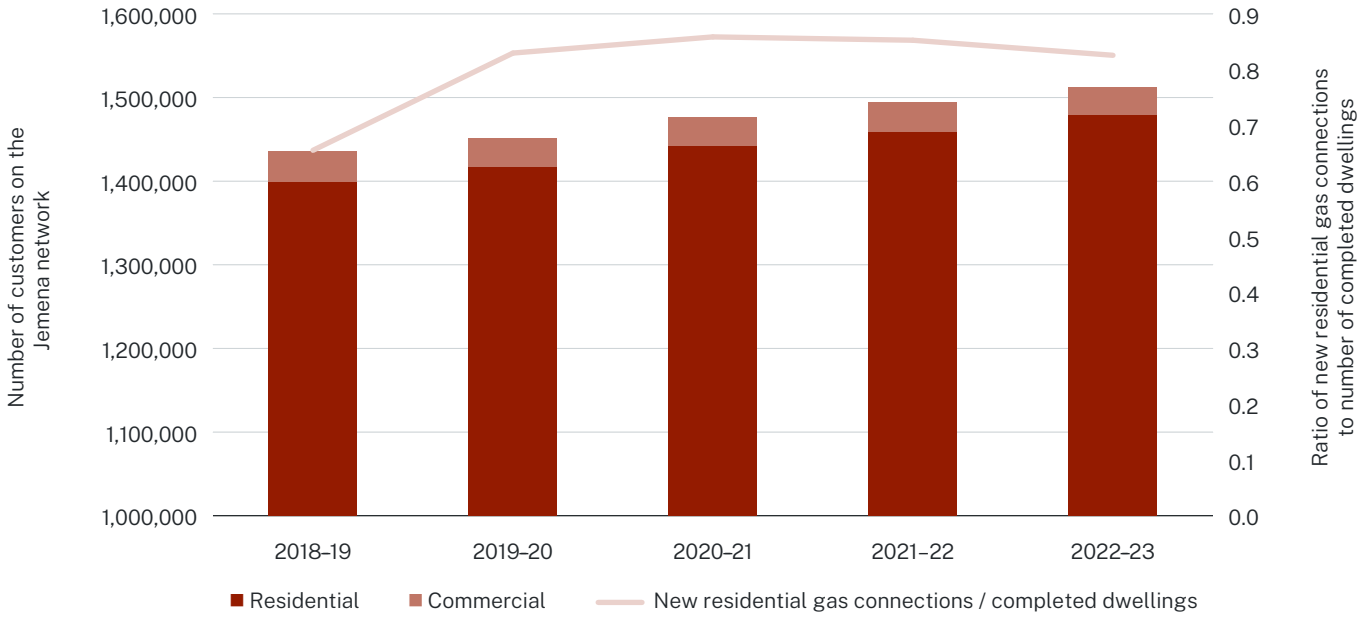
Around half of existing households in NSW are connected to gas. The number of residential and commercial customers on the Jemena gas network, the largest gas distribution network in NSW, increased by 7% between 2018–19 and 2023–24. The ratio of new dwellings to new gas connections has stayed relatively constant (Figure 30). The lack of both a ban on new gas connections and an orderly gas transition strategy for existing buildings will result in future stranded gas network assets and higher costs for customers remaining on the network (Dynamic Analysis, 2024; Graham et al., 2023). All-electric homes reduce ongoing costs and are healthier and safer (Monash Climate Change Communication Research Hub, 2023).

The Consumer Energy Strategy (NSW DCCEEW, 2024c) should encourage rapid, orderly electrification and increased energy efficiency of existing buildings, with clear targets, timelines and equitable outcomes for renters and low-income households.[64] Electrification of social housing should be a government priority. Barriers to uptake of electrification, EV charging, energy efficiency and renewable energy upgrades in apartment buildings should be addressed.

As customers leave the gas network, renters and low-income households will be left to pay a growing share of gas network costs as these households either cannot control their building's energy infrastructure or do not have the money to electrify. The NSW Government should fund and facilitate appliance transition programs timed to natural replacement cycles, with particular focus on low-income households. It should also consider introducing a mandate for all current gas-based appliances to be replaced at the end of their life with low-emission substitutes.

> **"Residents in private rentals or public housing have limited ability or incentive to upgrade their homes to make them more energy efficient. Among those who do own their homes, there are high rates of more mortgage stress. Where government incentives to upgrade homes to improve energy efficiency are available, these are still not viable for many families was struggling to pay their bills."**
>
> Jesuit Social Services submission to the Commission's 2025 consultation

Figure 30: Residential and commercial NSW customers on the Jemena gas network and ratio of new residential gas connections to completed dwellings per year



Source: Commission analysis of AER and ABS data (ABS, 2026; AER, 2026a). In the absence of a public dataset across all gas networks in NSW, data from Jemena was used as a proxy.

64 Several actions have been progressed under this strategy to date, including the recently announced $557 million Home Energy Saver initiative providing interest-free loans and discounts for CER and energy efficiency upgrades to eligible households.

Refrigerant emissions can be reduced through higher standards and product stewardship

As electrification accelerates and the use of refrigerants increases, it is critical that refrigerants with a low global warming-potential (GWP) are used, and that these also avoid long-lasting, toxic chemicals (e.g. per- and polyfluoroalkyl substances, or PFAS). The number of heat pumps installed in NSW alone have increased more than 500% since 2019 (Figure 31) (Clean Energy Regulator, 2026b). This increase correlates with the introduction of government incentives, which currently have no refrigerant requirements for eligible equipment.

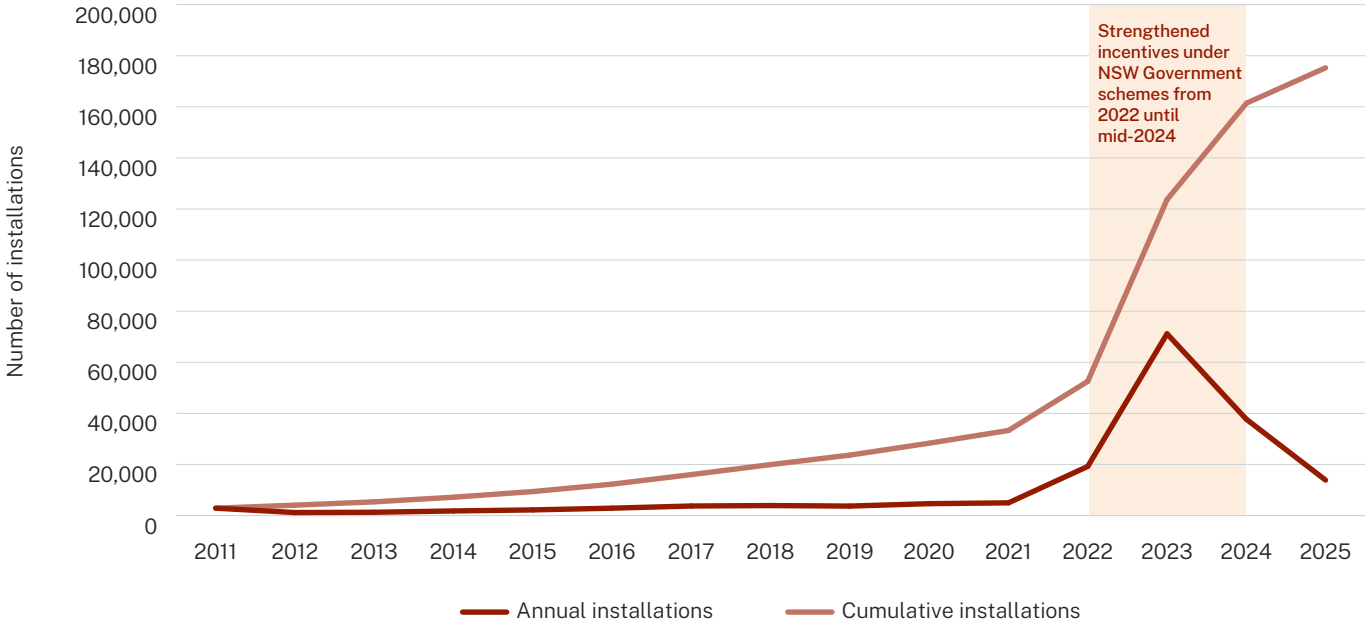
Refrigerants with a GWP below 10 kg CO_2-e/kg are already available. The phase-out of high-GWP refrigerants at the national level is not comprehensive and is progressing at a pace that will lock in emissions from increasing uptake of air conditioning and heat pump hot water systems. The EU and some states in the USA provide good examples of accelerated, comprehensive phase-outs (European Commission, 2024; Gotzler et al., 2024).

The NSW Government should ensure new and replacement cooling equipment uses low-impact refrigerants across all building types, driven by its own procurement, planning, building and rental standards, and incentives and retrofit programs. NSW Government should strengthen leakage and end-of-life management regulations and expand the installer workforce through training and national advocacy.

Delaying action on refrigerants means that more systems will rely on refrigerants that are progressively restricted through import bans. Over time, this will make servicing and retrofits more expensive or unfeasible (GBCA & AIRAH, 2025), which could increase risks from extreme heat events (Net Zero Commission, 2026b) particularly for vulnerable households.

Recommendation 3C: The NSW Government should phase out gas use in existing buildings and require all-electric new buildings while considering vulnerable people and regulating refrigerants to reduce their climate impact and avoid long-lasting, toxic chemicals.

Figure 31: Number of heat pump hot water systems installed in NSW 2011–2025 (annual and cumulative)



Source: Clean Energy Regulator, 2026b.

Mandatory energy performance disclosure at sale or lease must enable improvements of existing homes

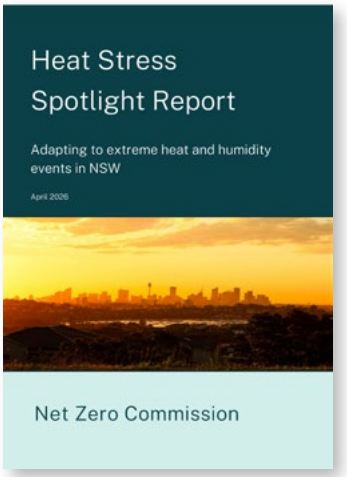
Through the Consumer Energy Strategy, the NSW Government is delivering a nationally agreed voluntary energy performance rating scheme for existing homes (Cth DCCEEW, 2025d). Both the Commission and the Joint Standing Committee on Net Zero Future recommend mandatory disclosures at the point of sale or lease to lift the performance of existing homes (Joint Standing Committee on Net Zero Future, 2025; Net Zero Commission, 2024).

Voluntary disclosures need to be progressed to a mandatory approach and include measures that enable renters and low-income households to act on the information and share in the benefits. A progression to minimum standards is essential to combat energy hardship and improve the energy efficiency and thermal safety of existing homes (Daniel et al., 2020; Net Zero Commission, 2026b).

Recommendation 3D: The NSW Government should drive energy efficiency and improved thermal resilience through mandatory disclosure of performance for all new and existing homes at the point of sale or lease, and minimum standards that support health and thermal safety in a changing climate.

Box 9: Improving thermal resilience through energy-efficient buildings

The Commission's Heat Stress Spotlight Report explored NSW's preparedness for the increasing impacts of extreme heat and humidity events, particularly on human health. Two findings relate to the built environment.



Finding 5: Strengthening how heat stress is addressed across all levels of the NSW Planning System would ensure our neighbourhoods are designed and built to reduce the risk of increasing heat stress into the future.

The Commission therefore advises the NSW Government to:

- Embed thermal resilience across the planning hierarchy from strategic land use planning to local planning controls
- Drive the consideration of future climate projections within national and state sustainability standards.

Finding 6: Current policies and regulations, especially for social, Aboriginal, and rental housing, should be revised to offer sufficient protections to their tenants and decrease their vulnerability to heat stress.

The Commission therefore advises the NSW Government to:

- Stage the introduction of minimum thermal safety and resilience requirements, prioritising rental, social and Aboriginal housing.

City of Ryde residential suburbs

NSW should move beyond disclosure and strengthen embodied carbon requirements for buildings and infrastructure

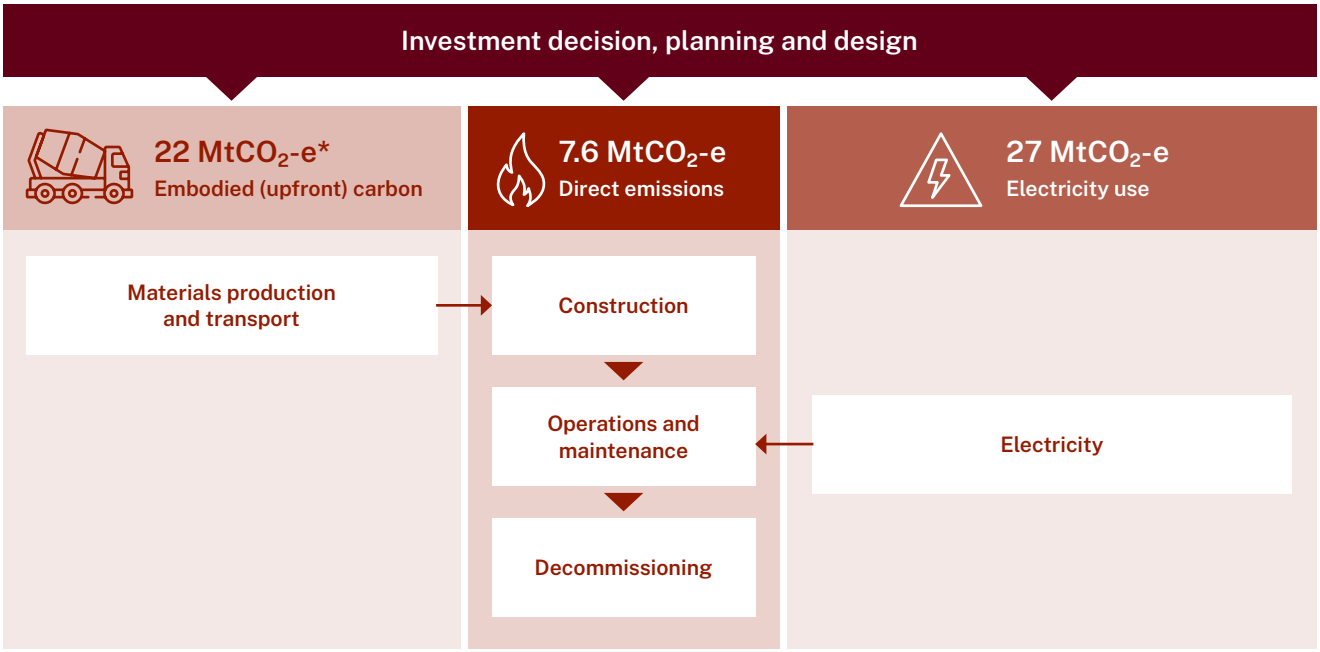
The Commission previously noted opportunities to strengthen embodied carbon policies beyond the current requirements focused on disclosure (Net Zero Commission, 2024). Acknowledging the complexity of embodied carbon measurement, the Commission recommends that foundational work is carried out to improve transparency and accuracy, based on robust carbon tracking and accounting. Further work is also needed to map the main sources of embodied emissions, including the contribution of locally manufactured construction materials, to better understand where policy settings could have the greatest impact.

Minimum embodied carbon standards are under consideration for the NCC update 2028 (Cth DISR, 2024). NSW should leverage the Sustainable Buildings SEPP and the NSW Decarbonising Infrastructure Delivery Policy (Infrastructure NSW, 2024) to phase in embodied carbon limits for buildings and infrastructure well ahead of 2050 (Box 10). This should be accompanied by continued support for low-carbon products and circular design (Alaux et al., 2024; CEFC, 2021).

Recommendation 5D: The NSW Government should advocate for more transparent and accurate reporting on embodied emissions in the built environment sector, supported by robust carbon tracking and accounting at the product level throughout supply chains.

Box 10: The built environment influences the equivalent of 50% of the state's direct emissions

Figure 32: Annual emissions profile for the built environment



Compares NSW direct (scope 1) emissions in 2022–23 with scope 2 emissions from electricity used in residential and commercial buildings in 2022–23 and the estimated upfront embodied emissions associated with buildings and infrastructure delivered in 2023–24 in NSW (*these embodied emissions may occur outside NSW). This is not a whole-of-life emissions profile for individual buildings.

When the indirect emissions from electricity and construction supply chains are included, the built environment's influence extends to the equivalent of 50% of the state's direct emissions (Figure 32). Buildings are the largest driver of electricity demand in NSW, responsible for 57% (and growing) of the state's electricity use and associated emissions in 2022–23 (Cth DCCEEW, 2025i). See Section 2.3 for how CER can drive the reduction of these emissions and benefit the energy transition.

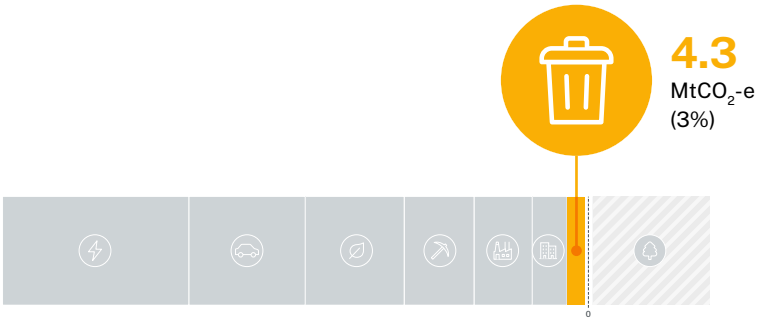
The second largest share of indirect emissions from the sector are the embodied carbon of new buildings and infrastructure: an estimated 22 $MtCO_2$-e in 2023–24 (Infrastructure Australia, 2024). This means the sector has a material influence on the emissions of industry through the manufacturing of construction materials. This indirect footprint is deeply influenced by decisions made in the planning and design stages of buildings and infrastructure (BSI, 2023).

Built environment sector policy assessment

STRONG, ON TRACK | STRONG, DELAYED | **PARTIAL** | LIMITED

- ✓ Policy frameworks exist to target sector emissions and disclose embodied carbon
- ✓ There are incentives for energy saving technologies, with strong recent uptake (e.g. heat pump hot water systems)
- ✗ No state-wide policy banning new gas connections in all buildings
- ✗ Refrigerant policies have gaps and the lack of GWP limits in the Energy Savings Scheme is a lost opportunity to direct subsidies towards lower-emissions and less harmful refrigerants

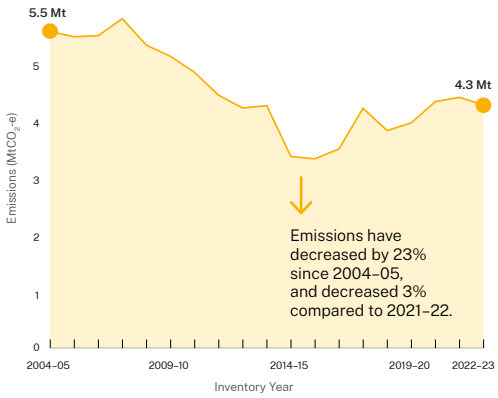
2.10 Waste sector



Emissions overview

The waste sector includes fugitive emissions from solid waste treatment and wastewater treatment. The two main drivers of emissions are existing waste in landfills and new methane-generating waste entering landfill.

Emissions over time ($MtCO_2$-e)



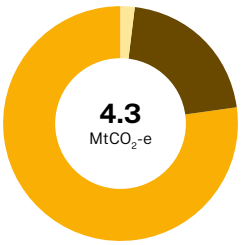
-23% change since 2004–05

+12% change since 2018–19

Emissions reductions since 2004–05 were driven by new landfill gas capture projects. However, over the last 5 years emissions from the sector have risen **12%**, mainly from landfills.

Composition of 2022–23 Emissions

By Sub-sector
$MtCO_2$-e and % of sector



- Solid waste disposal in landfill **3.3** $MtCO_2$-e (77%)
- Wastewater treatment **0.9** $MtCO_2$-e (21%)
- Other sources **0.1** $MtCO_2$-e (2%)

Solid waste disposed in landfill generated **77%** of the sector's emissions.

By Greenhouse Gas
$MtCO_2$-e and % of sector

- Methane **4.2** $MtCO_2$-e (98%)
- Nitrous oxide **0.1** $MtCO_2$-e (2%)
- Carbon dioxide **0.004** $MtCO_2$-e (0.1%)

Sums may differ from the total due to rounding.

About **98%** of the sector emissions are methane, primarily from landfills

2% of emissions are nitrous oxide from wastewater treatment plants.

Source: Commission analysis of the 2022–23 inventory (Cth DCCEEW, 2025j).

Emissions trends since 2004–05, as well as the NSW Government's projections, show that the waste sector is not decarbonising across its main emission sources of landfills and wastewater (Cth DCCEEW, 2025j; NSW DCCEEW, n.d.). These sources can be addressed with existing technologies.

Coordinated policy action is required to reduce methane at landfills through gas capture

The rate of landfill gas capture in NSW was 40% in 2022–23, down from 46% in 2020–21 (NSW DCCEEW, 2024d, 2025d). National market-based incentives, in the form of ACCUs and large-scale generation certificates, provide income to the third-party contractors who operate most landfill gas capture projects. The key challenges in increasing the rate of landfill gas capture are commerciality considerations for contractors and limited internal capability and/or capacity of councils to progress such projects. This is particularly the case in regional areas and for smaller facilities (Central NSW Joint Organisation, 2026).

In the 2021 Waste and Sustainable Materials Strategy, the former NSW Government committed to mandating landfill gas capture (NSW DPIE, 2021). The current NSW Government has not implemented the mandate. However, the NSW EPA has commenced a capability building program and is phasing in requirements from 2027 for landfill licensees to report annual emissions, estimate future emissions, and publish Climate Change Mitigation and Adaptation Plans (NSW EPA, 2025d, 2025g). The EPA is also proposing new standards for new landfill licensees, including requiring that landfills demonstrate how they contribute to the state's net zero targets and the use of progressive landfill gas management technologies (NSW EPA, 2025b).

> **"Landfills will continue to be significant greenhouse gas emissions sources for the foreseeable future, and generally the largest source of emissions for any individual council who operates such a facility. (...) While large landfill gas capture systems are viable for major sites, smaller facilities lack financial feasibility under current market conditions"**
>
> Hunter Joint Organisation submission to the Commission's 2025 consultation

Increasing landfill gas capture at scale requires coordinated policy action. This includes establishing long-term partnerships to build emissions management capability across landfills of all sizes, providing stable financial incentives through mechanisms such as ACCUs or targeted funding, and accounting for the resourcing and geographic constraints faced by regional councils.

The 2025 Waste and Circular Economy Infrastructure Plan shows that the NSW Government is rethinking its policy settings for waste management (NSW EPA, 2025f). Policy developed in light of the Plan should embed on-site abatement of landfill emissions more effectively.

Requiring separation of food and garden organics is a strong start, and other methane-generating waste also needs to be diverted from landfill

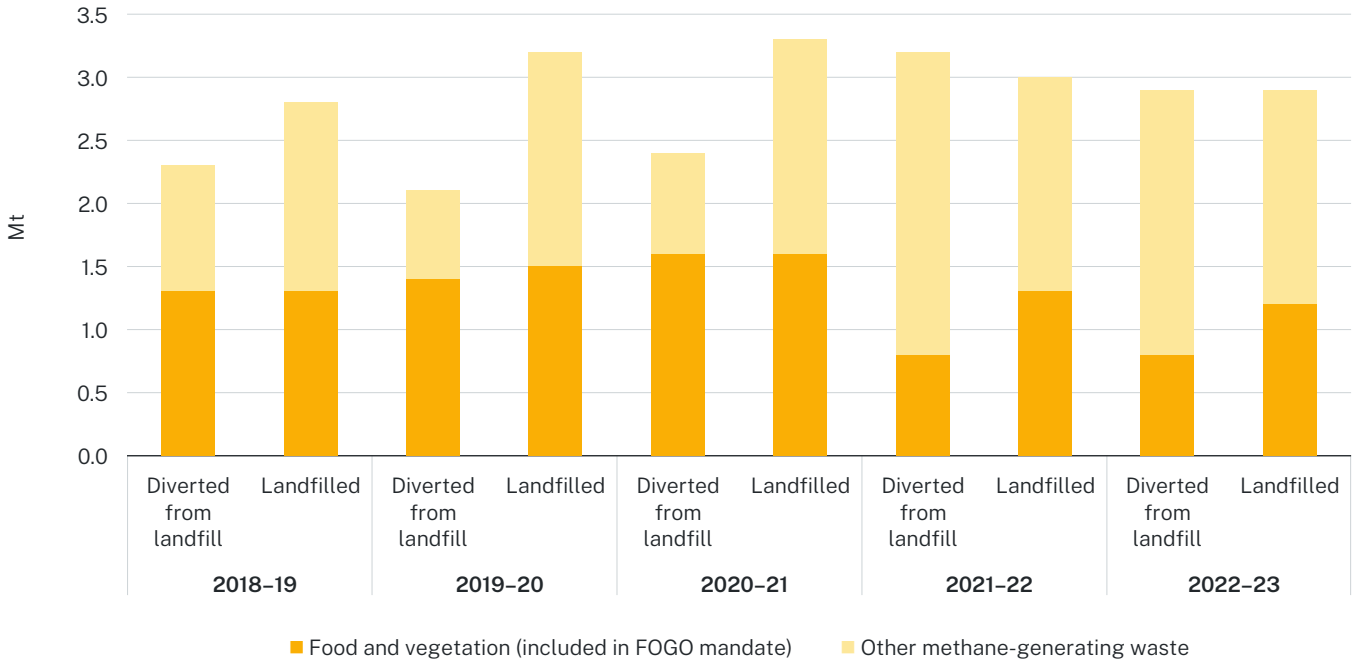
Action is needed to divert methane-generating waste from landfill. Each person in NSW is generating more emissions-intensive waste on average than 5 years ago.[65] It is encouraging that legislation commenced in March 2025 to mandate the separation of food organics and garden organics (FOGO) waste,[66] supported by funding for infrastructure, contamination audits, community education programs, and staffing (NSW DCCEEW, 2025f). Under this legislation, businesses that sell or handle food must separate FOGO waste from July 2026, and households from July 2030.

To be successful, the NSW Government needs to commit adequate and dedicated support to deliver the FOGO mandates. This should be accompanied by a complementary strategy to reduce the generation of FOGO waste in the first place – creating less waste is the most effective way to reduce emissions from waste.

While progress is being made on FOGO, it makes up only around one third of methane-generating waste currently going to landfills, by volume (Figure 33).[67] The other two-thirds are other putrescible waste and paper and cardboard, which are not covered by the FOGO legislation. This indicates that further diversion and overall waste reduction beyond current mandates could have strong emissions benefits.[68]

Recommendation 4C: The NSW Government should reduce waste emissions by maximising landfill gas capture, reducing total waste generation, and diverting other methane-generating waste from landfills (beyond FOGO mandates).

Figure 33: Total methane-generating waste diverted from landfill and disposed in landfill per financial year



Source: Commission analysis of the 2024 National Waste Resource Recovery Database (Cth DCCEEW, 2024d).

65 Increases in methane-generating waste have outpaced population growth in NSW (15% increase in methane-generating waste including a 4% increase in methane-generating waste going to landfill versus 3% population growth). Here, methane-generating waste is comprised of the waste streams that are reported in the National Waste Resource Recovery Database and that are considered to generate methane in the National Greenhouse Gas Accounts Factors (food, vegetation, paper and cardboard, and textiles, leather and rubber) and the general organics category (ABS, 2018, 2022; Cth DCCEEW, 2024d).

66 Protection of the Environment Legislation Amendment (FOGO Recycling) Bill was approved in 2024.

67 The Commission's analysis of the 2024 National Waste Resource Recovery Database (Cth DCCEEW, 2024d).

68 Non-FOGO methane-generating waste streams can generate as much or more emissions per tonne of waste than FOGO when disposed of in landfill (Cth DCCEEW, 2020).

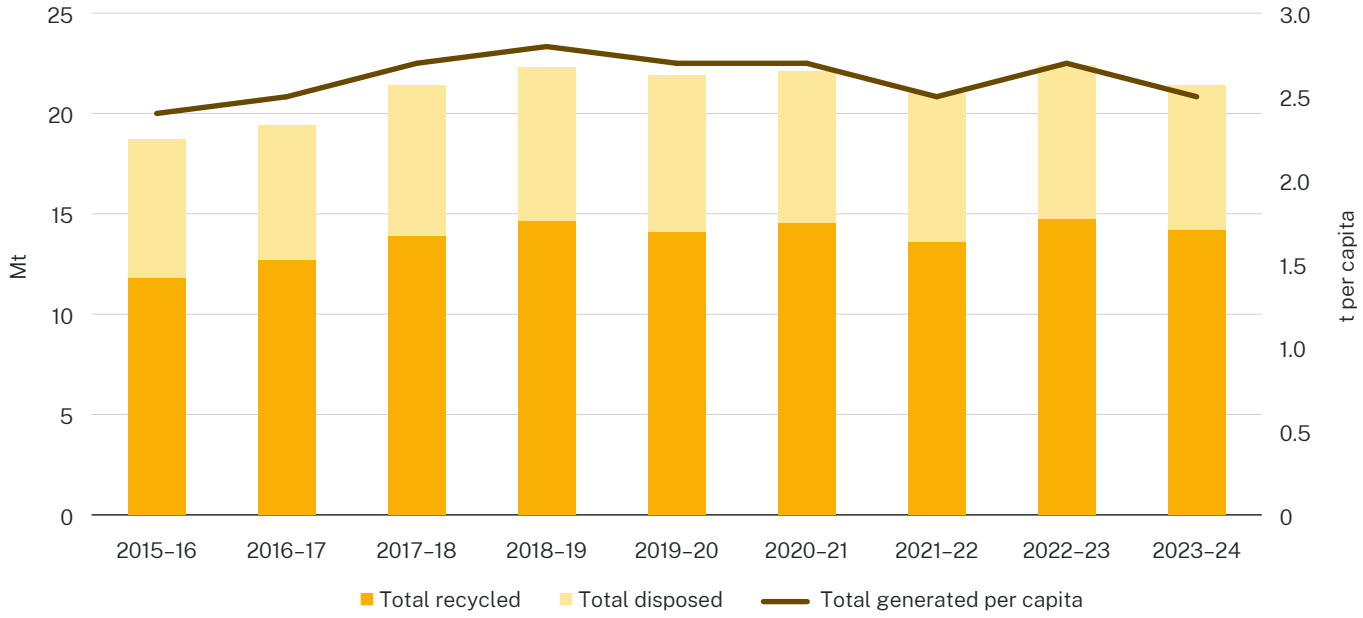
Circular economy and product stewardship can support decarbonisation in other sectors

In the longer term, changes in how products and materials are designed, used and recirculated could materially reduce economy-wide emissions (Cth DCCEEW, 2024a; Productivity Commission, 2025a). Strategically embedding circular economy principles and strategies into NSW policy frameworks could support abatement beyond the waste sector in agriculture, transport, resources and industry. The national Circular Economy Framework sets national targets for circularity, highlighting their emissions benefits (Cth DCCEEW, 2024a). To achieve these targets, NSW must increase recycling rates and reduce waste generation rates, which have remained unchanged for the last decade (Figure 34) (NSW EPA, 2025h).

The NSW Government can utilise existing technologies and initiatives more strategically to reduce waste generation. For example, sharing resource streams between co-located industries, particularly in SAPs, utilising food and agricultural wastes for fertiliser and energy production (see Section 2.5) and circular design to reduce waste in construction (Alaux et al., 2024; Carlu et al., 2019; CEFC, 2021; Coreo & GBCA, 2025; NSW DPIRD, 2025; NSW Government, 2023).

Recommendation 5F: The NSW Government should embed circular economy principles in government policies and programs where they can deliver the greatest reductions in emissions and waste generation.

Figure 34: Total waste generation and waste generation per capita in NSW in the last decade



Source: NSW EPA, 2025h.

Box 11: Circularity can address some value chain challenges of the energy transition

Figure 35: Overview of potential benefits of circularity and whole-of-life policies in the context of the net zero transition

Social licence

- Addressing environmental and social concerns over sourcing of raw materials, end of life of technologies
- Mitigating local impacts of projects

Supply chain resilience

- Mitigating risks due to geographical concentration of raw materials and manufacturing, supply bottlenecks and price volatility

Localising benefits

- Shifting demand for products made outside NSW to local industries
- Supporting local innovation
- Investment and job creation

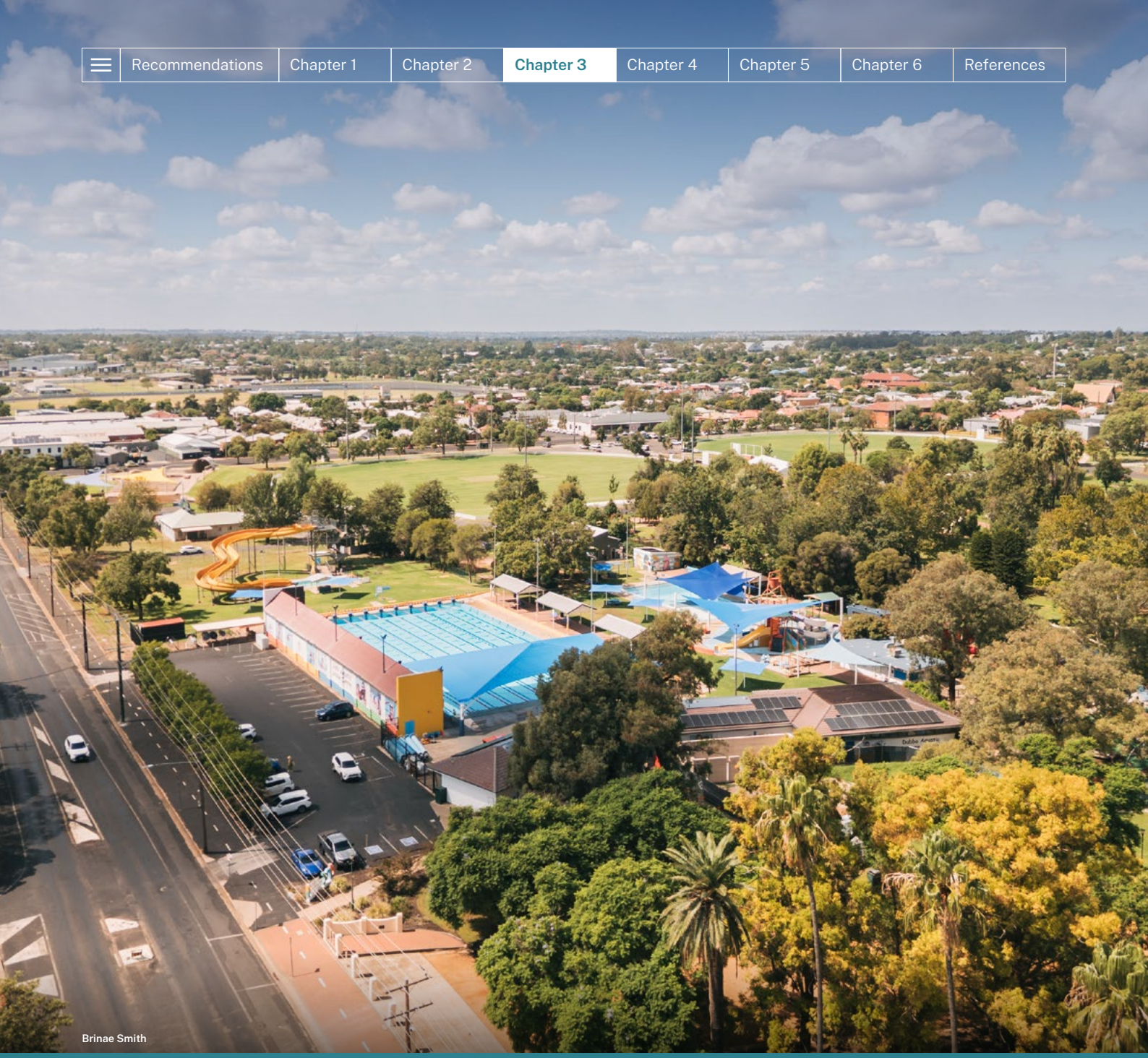
Source: (NSW Office of Energy and Climate Change, 2023; Ramboll, 2026).

Emerging considerations include supply of technologies and the generation of new waste streams, which in turn carry social licence issues. For instance, the issue of the management of battery and solar panels waste, which is predicted to increase 7-fold between 2025 and 2035 (NSW EPA, 2025a). The *Product Lifecycle Responsibility Act 2025* (NSW) can support these outcomes by allowing the NSW Government to establish design standards and product stewardship requirements for low-emissions technologies.

Waste sector policy assessment

STRONG, ON TRACK | STRONG, DELAYED | **PARTIAL** | LIMITED

- ✓ FOGO diversion mandates aiming at keeping organic waste out of landfill
- ✗ Lack of decisive policy measures to drive the reduction of landfill emissions, focus needs to shift from non-binding commitments and capability building to abatement
- ✗ Waste generation and recovery rates largely unchanged despite policy efforts aimed at better practices, signalling stronger intervention is warranted



Brinae Smith

Chapter 3

Adapting to a changing climate

3.1 Strengthening adaptation to meet growing climate risk

Climate change adaptation means taking action in response to the actual or expected effects of climate change. Adaptation plays a key role in reducing exposure and vulnerability to climate change. NSW communities are already living with the realities of climate change through an increase in extreme weather events.

Ineffective governance and failure to adequately invest in adaptation actions that help to reduce risk in communities now will result in future direct costs for communities, our economy, cost-of-living and economic growth (Box 12).

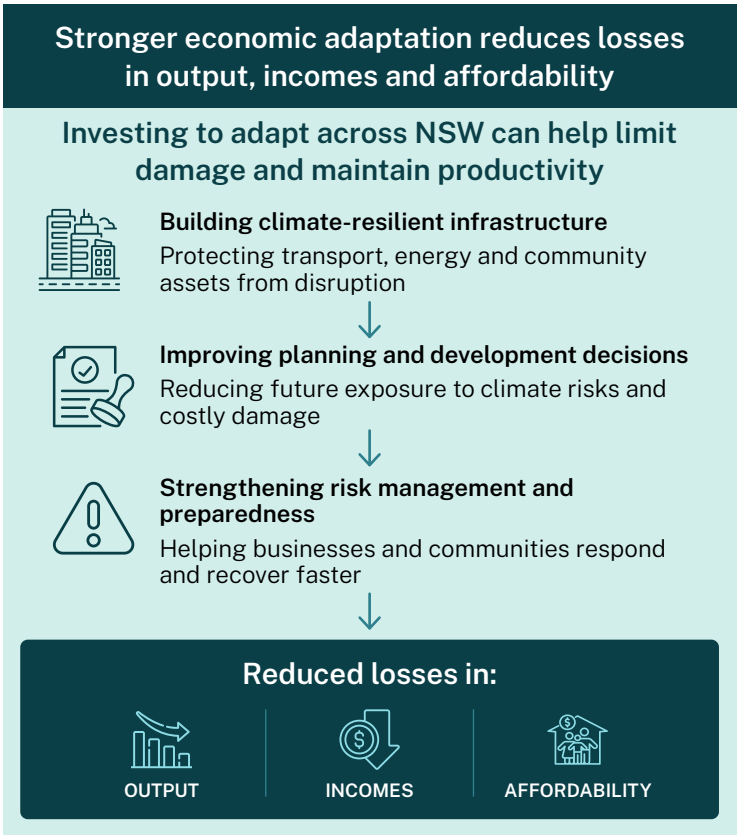
Adaptation is critical for NSW communities

to maintain their health, wellbeing, prosperity and way of life as environmental, economic and social challenges driven by climate change increase. Adaptation action can take many forms, including changes to land-use planning, improving community preparedness for disasters, restoring ecosystems, building resilient infrastructure, First Nations stewardship of land and cultural fire. It can be proactive or reactive, and incremental or transformational.

Box 12: Adaptation action materially reduces the economic impacts of climate change in NSW

The Net Zero Commission commissioned two complementary economic analyses to strengthen understanding of the scale and nature of climate-related economic impacts in NSW (see Figure 1). Together, these studies show that climate change has already imposed material economic costs on NSW and that continued warming will progressively constrain economic growth and productive capacity.

As an open, trade-exposed economy, NSW is affected not only by local climate conditions but also by climate-related disruptions elsewhere in the world that flow through prices, demand and investment to affect households and businesses across the state. Local adaptation and global emissions reduction is the state's strongest economic defence. By investing in resilience today, NSW can minimise future disruptions, sustain productivity, and reduce long-term financial losses to businesses and workers (Net Zero Commission, 2026c).

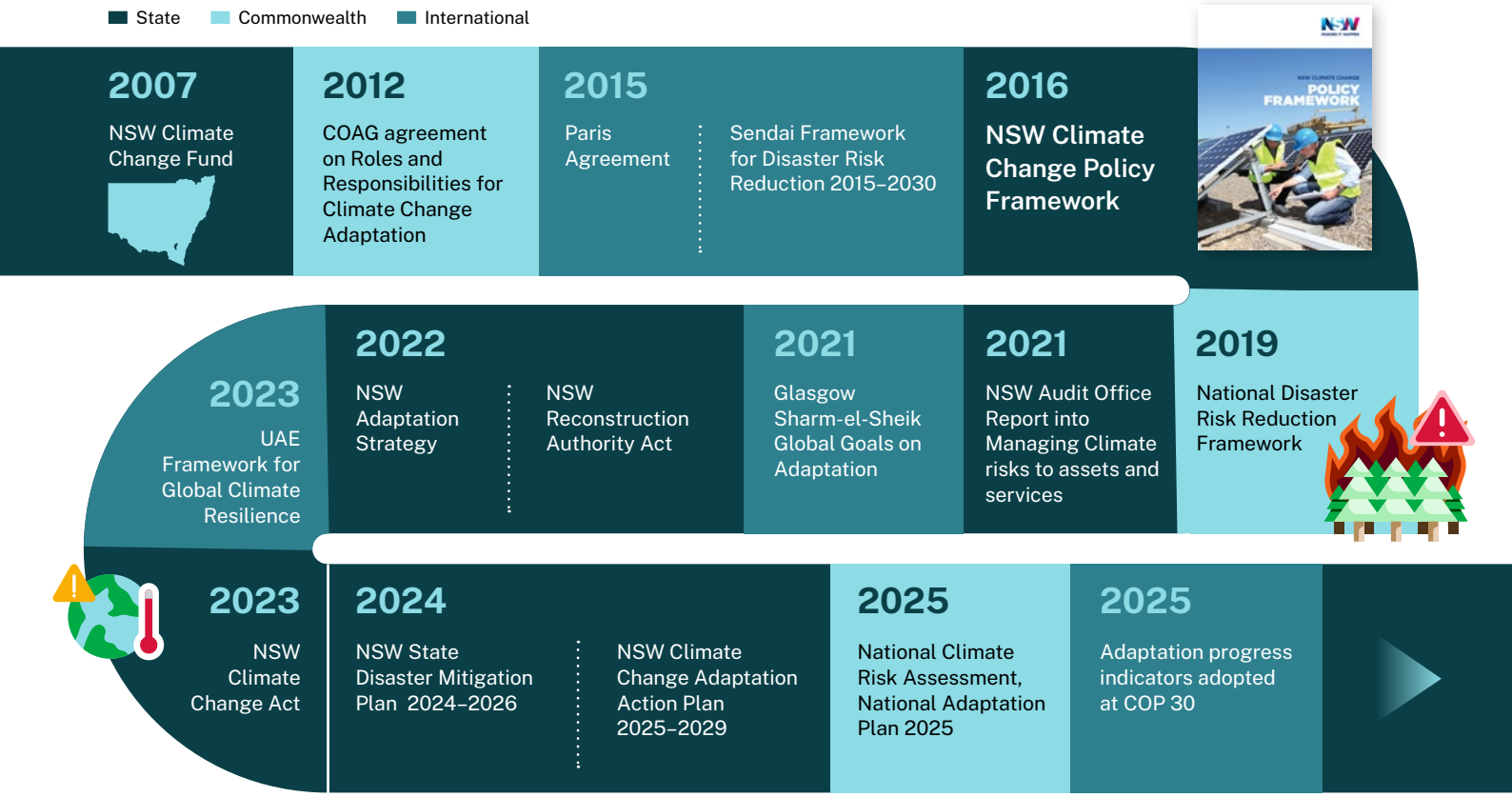


Proactive and effective governance of adaptation leading to actions that tangibly reduce risk can deliver strong benefits and prevent future losses (Barnett et al., 2026; Rickards et al., 2025). The Global Commission on Adaptation estimates that every dollar appropriately invested in climate change adaptation could save between $2 and $10 in recovery (Global Commission on Adaptation, 2019).

Effective governance of adaptation action by all levels of government is essential for communities to be more resilient to a changing climate, as it determines how money is spent, who is included in decision-making and how trade-offs from decisions are managed (Rickards et al., 2025). If governance is ineffective, or if adaptation action is concentrated in planning and risk identification without progressing to tangible actions to reduce risk, this can cause delays or result in no meaningful improvement in community resilience (Brullo et al., 2026). This heightens our exposure and vulnerability to climate change risks, which can cost more money, leave vulnerable people behind and turn manageable risks into crises.

In NSW, the governance of adaptation is shaped by a variety of legislation, policies and programs which set the foundation for action (Figure 36). This chapter outlines the core adaptation initiatives being implemented by the NSW Government and the Commission's assessment of adaptation progress in NSW over the reporting period July 2024 to December 2025.

Figure 36: A timeline of adaptation policy drivers for NSW

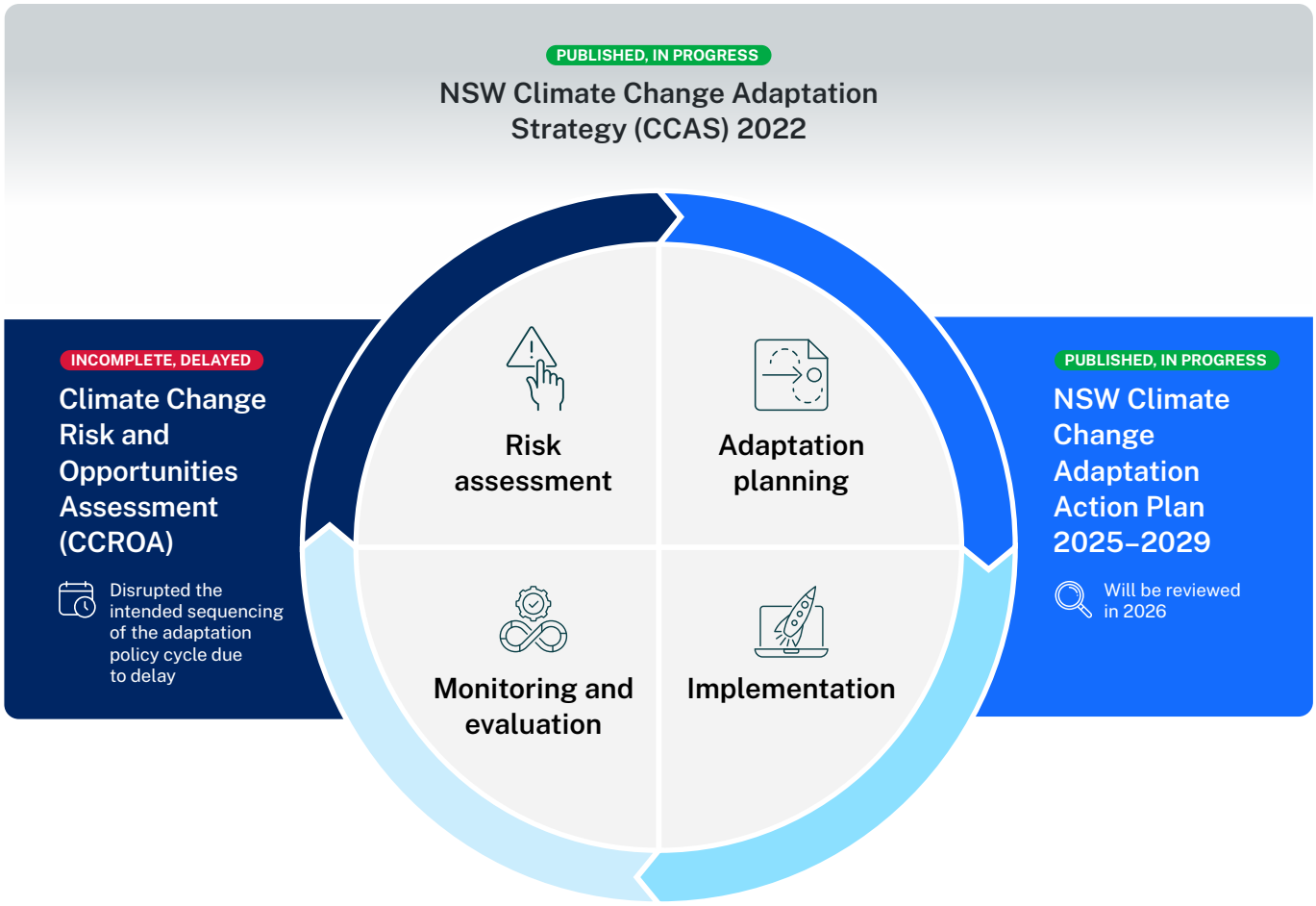


Climate change adaptation and the adaptation policy cycle in NSW

The Climate Change Act establishes an adaptation objective, "that New South Wales is more resilient to a changing climate". Adaptation is explicitly mentioned in the *Reconstruction Authority Act 2022* (NSW) and the recently amended *Environmental Planning and Assessment Act 1979* (NSW). It is also addressed in a variety of other legislation, policies and programs, such as the *Coastal Management Act 2016* (NSW), the NSW Bush Fire Policy for Land-use, the NSW Flood Risk Management Framework and the Marine Estate Management Strategy (Department of Planning and Environment, 2023; NSW DPHI, 2020a, 2024a; NSW Marine Estate Management Authority, 2018).

The Paris Agreement recommends addressing adaptation through an ongoing policy cycle (Figure 37) (UNFCCC, 2015). This approach, which includes identifying climate risks, formulating adaptation policies or plans, implementing actions, and then monitoring and evaluating the results, has been adopted by a number of jurisdictions in Australia and internationally (Net Zero Commission, 2024). All OECD countries have developed at least one national adaptation strategy or plan, and more than half have updated these at least once (OECD, 2023b). Following the adaptation policy cycle properly does not automatically produce effective outcomes for adaptation, but it improves the likelihood of stronger outcomes and reduces the risk of maladaptive actions that lead to adverse outcomes (Barnett et al., 2026).

Figure 37: The adaptation policy cycle in NSW



The 2022 NSW Climate Change Adaptation Strategy (CCAS) is the key overarching policy approach driving ongoing adaptation planning and implementation of the adaptation policy cycle in NSW (NSW DCCEEW, 2022). The CCAS includes 20 actions supported by $93.7 million in funding from 2022 to 2030. The CCAS commits the NSW Government to preparing a state-wide Climate Change Risk and Opportunity Assessment (CCROA) at least every 5 years and to developing a corresponding adaptation action plan. It intends to ensure that adaptation actions are targeted towards priority risks and reviewed regularly (NSW DCCEEW, 2022).

The NSW Government initially committed to releasing the first CCROA in 2023. In the NSW Government's response to the Commission's 2024 Annual Report, it advised the CCROA would be completed by the end of 2025 (NSW DCCEEW, 2025c). The Commission understands the assessment is intended for release later in 2026.

NSW DCCEEW released the first NSW Climate Change Adaptation Action Plan 2025–2029 (the Adaptation Action Plan) in October 2024. The Adaptation Action Plan includes 47 actions across 8 agencies. NSW DCCEEW has indicated that the plan will be reviewed in 2026 (NSW DCCEEW, 2024b).

Climate change adaptation and disaster risk reduction

Climate change adaptation and disaster risk reduction share common goals to reduce risk to people, places and systems from a changing climate. Despite shared objectives, adaptation and disaster risk reduction differ in scope and emphasis.

Climate change adaptation places emphasis on both managing the impacts from extreme events and from chronic changes such as sea-level rise, increasing temperature and increased water scarcity to consider fundamental adjustments to reshape how communities and institutions function over the long-term (IPCC, 2022a).

Disaster risk reduction typically focuses on preparing for and responding to acute events in the near term such as storms and floods, as well as a broader focus on non-climate related hazards such as earthquakes and biological hazards. The Sendai Framework for Disaster Risk Reduction 2015–2030 emphasises the importance of coherence between climate change adaptation and disaster risk reduction (United Nations General Assembly, 2015).

The NSW Reconstruction Authority has responsibility for disaster risk reduction in NSW under the *Reconstruction Authority Act 2022* (NSW). It developed the SDMP and can develop DAPs for particular regions. The SDMP was released in February 2024 to provide "guidance about the mitigation of disasters across the State, including setting priorities for action" (NSW Reconstruction Authority, 2024).

The SDMP is largely focused on addressing the risk of natural hazards likely to be amplified by climate change, including bushfires, floods, coastal hazards, droughts and storms, making integrated and coordinated governance of climate change adaptation and disaster risk reduction vital. DAPs are plans that contain specific projects, strategies and actions that will be undertaken in a particular region to reduce or adapt to natural hazard risk, with consideration of climate change impacts (NSW Reconstruction Authority, 2025c).

3.2 Work of the Commission over the reporting period

The Commission made several findings in the 2024 Annual Report regarding NSW's progress towards the adaptation objective, to which the NSW Government responded in June 2025 (see Table 1) (NSW DCCEEW, 2025c).

Table 1: Commission findings of the 2024 Annual Report for adaptation and the corresponding NSW Government response

What the Commission said in the 2024 Annual Report	How the NSW Government responded
Close to halfway through the 5-year implementation period, vital elements of the adaptation cycle have not progressed. In some other jurisdictions, the inclusion of adaptation cycles in legislative instruments have ensured their ongoing application and this approach may help ensure an adequate state-wide adaptation response for NSW.	The NSW Government will consult on regulations to legislate the adaptation cycle (risk assessments, adaptation plans, implementation, monitoring and evaluation) under the Climate Change Act. The regulations may include other requirements that help achieve the objectives of the Climate Change Act before the end of 2026.
A key strategy action, the NSW Climate Change Risk and Opportunity Assessment, has been delayed from 2023 to early 2025. As this risk assessment is a critical part of the evidence base to inform state-wide adaptation action, its completion should be prioritised.	The NSW Government is committed to releasing a new climate change risk and opportunity assessment for NSW at least every 5 years under the NSW Climate Change Adaptation Strategy. The NSW Government will complete the first assessment by the end of 2025.
NSW Government agencies should engage and make greater use of the latest projections to ensure that decisions address the future vulnerability of NSW communities to climate change.	The NSW Government is committed to continuously improving its projections and providing new support and resources to help decision makers use projections to adapt. Since the Commission's report, more NSW Government agencies are using climate change projections to inform decisions.

The Commission made specific commitments to undertake several pieces of work relating to adaptation in its 2024 Annual Report. The commitment relating to NARCliM2.0 is outlined below. Updates on the Commission's approach to measuring progress are detailed in Section 3.3.

Use of NARCliM climate change projections by NSW Government agencies

The Commission has explored ways to better use the NARCliM climate projections across the NSW Government, including:

- agency usage of the latest NARCliM2.0 regional climate projections data for adaptation decision-making
- whether technical capacity is a barrier to the effective use of NARCliM projections
- the accessibility of information to NSW Government agencies.

To embed climate change risk and adaptation across NSW Government actions and decisions, Climate Change Risk Officers (CCROs) were appointed to ten NSW Government portfolios in accordance with action 13 of the CCAS. In 2025, the Commission interviewed ten CCROs to identify common barriers and enablers to the use of NARCliM projections across portfolios. It also examined departmental and agency annual reports for FY2023–24.

The Commission found that NSW Government entities are using NARCliM projections primarily for climate risk identification and preparation of climate-related financial disclosures. Agencies have been enabled to use NARCliM projections through tools provided by NSW DCCEEW, including regional snapshots, presentations and the interactive climate change projections map. NSW DCCEEW is continuing to invest effort and resources into technical capability-building and translation of climate science. These developments and efforts are welcome.

To date, agency use of these tools has been generally high-level, qualitative, and contextual, focusing on the direction and nature of projected changes to assist risk identification rather than quantitative use. These tools have been sufficient for this purpose. Most entities have not yet commenced detailed adaptation planning, risk prioritisation or implementation of adaptation activities. The Commission found that while resources for climate risk management and adaptation planning are constrained, the CCRO program has made inroads into embedding climate change considerations into decision-making processes, particularly through the integration of climate change risks into enterprise-level risk registers and asset management considerations.

Meaningful consideration of qualitative climate hazard trends, and their implications for agency operations and strategic planning, is an essential foundation for improving climate risk maturity. However, constraints in capability (the knowledge and skills needed) and capacity (the time, funding and staffing needed) are barriers to more advanced climate risk assessment and adaptation planning across agencies and limit the level of support that NSW DCCEEW can provide. Uncertainty and lack of appropriate information can also be a barrier to climate risk assessment.

For agencies with large and dispersed asset bases, more sophisticated use of climate projections will be required over time to inform adaptation planning and investment decisions. This may include consideration of scientific confidence levels in projected changes, the degree of model agreement, the range of plausible futures and the overall magnitude of projected future changes. Climate storylines is a framework which employs multiple lines of evidence including quantitative information from selected climate models, qualitative information and other sources of risk information to explore plausible future events and how an organisation might experience and respond to different climate risks (Fiedler et al., 2025). It could be used by agencies to better explore uncertainty and integrate quantitative climate data such as NARCliM2.0 with other relevant information.

Quantitative approaches to assessing climate risk and adaptation planning should avoid overly granular quantification of changes where uncertainty is high and potentially unquantifiable. They should instead focus on developing storylines including useful metrics relating to climate hazards, exposure and vulnerability that can meaningfully inform agency decision-making.

Tools and training provided by NSW DCCEEW, including the Climate Risk Ready NSW Guide and associated course, and technical capability-building and translation for climate science, have raised the profile of climate risk and improved capability in the risk management space. However, limited or inconsistent engagement by executives across NSW Government agencies was cited as a barrier to embedding climate risk management.

Addressing capability gaps requires investment in training and guidance, while addressing capacity gaps requires dedicated resourcing. To date, resourcing appears to be a greater barrier than capability to the consideration of climate change risk and adaptation across the NSW Government, and progression beyond risk identification by agencies. The NSW Government should continue to support and resource the CCRO program beyond its current funding horizon, with expanded capacity to progress agencies from risk identification into adaptation planning and action implementation.

The NSW Government should also continue to prioritise broader capability building for state government and local council employees on climate risk with a particular focus on adaptation decision-support, including the appropriate use and limitations of climate projections. Addressing capability and capacity gaps, and ensuring executive engagement and accountability for climate risk management and adaptation, will be key to moving agencies to the higher maturity adaptation action needed to reduce the NSW Government's exposure to climate risk. This is further discussed in Section 3.4, including Recommendation 6D.

3.3 Monitoring progress on adaptation

Assessment approach for the annual report

The Commission intends to build a holistic framework for measuring progress towards the adaptation objective, including quantitative measures where possible. As noted in the 2024 Annual Report, it is difficult to measure adaptation progress quantitatively, and monitoring approaches to the adaptation policy cycle in other jurisdictions place strong emphasis on qualitative assessments.

There are promising developments to strengthen adaptation metrics, monitoring, and evaluation, including indicators to measure progress towards the Global Goal on Adaptation.[69] However, measuring progress on adaptation remains an emerging field (Brullo et al., 2026). with limited operational examples of best practice that were readily actionable for this annual report. The Commission will continue working towards building a holistic monitoring framework in future annual reports and analyse other approaches to measuring progress on adaptation as the body of practice surrounding it matures.

Future methods to measure progress could also be influenced by NSW DCCEEW initiatives underway. NSW DCCEEW is finalising the state-wide Climate Change Risk and Opportunities Assessment which may inform the Commission's approach once complete. NSW DCCEEW is also developing draft regulations and a framework for climate adaptation metrics. NSW DCCEEW has invested significant effort in this work and once completed, the Commission will seek to reflect that work in its approach where appropriate to avoid duplication of effort on metrics between NSW DCCEEW and the Commission.

69 See Decision 12/CMA.7 from the UN Climate Change Conference in Belém, November 2025. Available at https://unfccc.int/documents/655273

For its inaugural 2024 Annual Report, the Commission used a qualitative approach focusing on NSW's implementation progress towards delivering the public adaptation commitments in the CCAS, including a self-assessment of progress provided by NSW DCCEEW. For this report, the Commission has built on its 2024 Annual Report approach by conducting an independent assessment of the progress and timely delivery of actions in the CCAS, the Adaptation Action Plan and the SDMP.

The Commission has also drawn on feedback received during the Commission's consultation in 2025, information collected by the Climate Change Network policy stocktake across the NSW Government and other information as lines of evidence to assess progress towards the adaptation objective. This assessment is not able to capture all work programs underway across the state that can contribute to adaptation progress, including the work of other government agencies, levels of government and work occurring in the private and not-for-profit sectors. The Commission acknowledges these important contributions to adaptation action in NSW and will seek to better capture these as we continue to develop our approach to measuring progress towards the adaptation objective.

Progress assessment for specific initiatives

This section assesses progress on the CCAS, the Adaptation Action Plan and the SDMP. The implications of the findings in this section, including recommendations, are discussed in Section 3.4. The Commission drew on publicly available information and requested updates and a self-assessment of progress from agencies responsible for actions under the CCAS, the Adaptation Action Plan and actions relevant to climate change adaptation in the SDMP.

Progress was assessed by qualitatively reviewing the status of each action using the below categories:

Delivered	In progress	Ongoing	Not yet commenced	On hold	Completion questioned
Action is complete.	Work on the action has started but is incomplete.	Work on the action has started but no due date has been given.	Work on the action has not yet started.	Work on the action has started but is currently paused.	Action is regarded as incomplete despite the agency self-assessing it as complete.

Delivery of approximately half of all actions in the CCAS and the SDMP are significantly delayed (Figure 38 and Figure 40). Since the Commission's 2024 Annual Report, completion of the Adaptation Action Plan (Figure 39) was the only additional CCAS action delivered. Outputs from ongoing actions 3 and 5 of the CCAS were delivered in the reporting period, such as the release of an additional greenhouse gas emissions scenario (SSP2-4.5) for NARCliM2.0 and the release of the NSW Coastal Erosion and Inundation Exposure Assessment.

For the CCAS, two actions considered complete by agencies are not considered complete by the Commission. This is considered in more detail in Section 3.4. For the SDMP, 2 actions considered complete have been assessed as "on hold" by the Commission because they can no longer be completed within the timeframe of the SDMP but have been marked as "delivered" by agencies. The substantive delivery of these actions is dependent on other actions such as reform of the National Construction Code and delivery of DAPs. The Reconstruction Authority should attempt to revisit the actions and substantively deliver them in future iterations of the SDMP.

A more detailed evaluation of the Adaptation Action Plan is also outlined in Section 3.4. The actions and the assessed status and timeliness for the CCAS, the Adaptation Action Plan and the SDMP is included in Appendix 1.

Figure 38: The Commission's assessment of the progress of the CCAS including status, timeliness and combined status and timeliness for actions in the CCAS

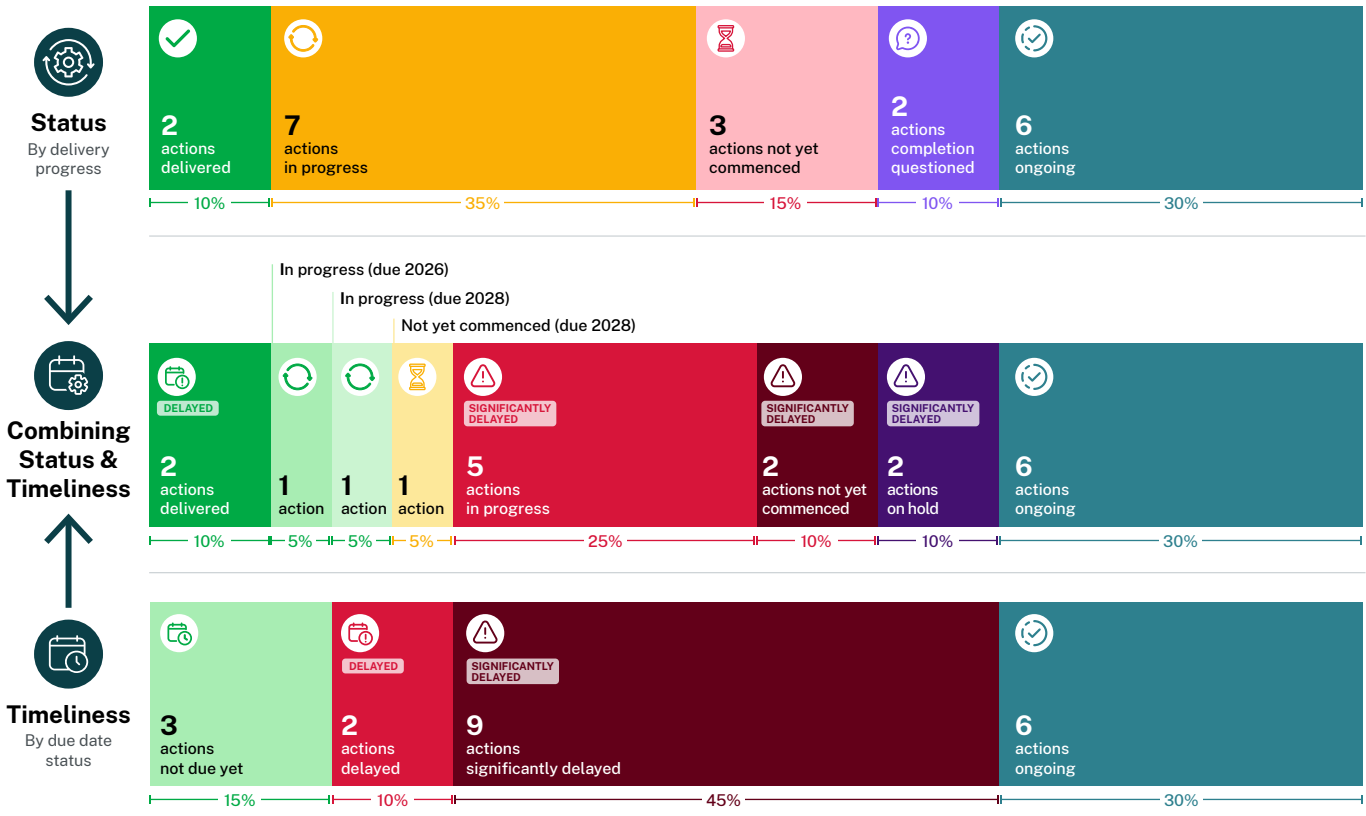


Figure 39: The Commission's assessment of the progress of the Adaptation Action Plan including status, timeliness and combined status and timeliness for actions in the Adaptation Action Plan

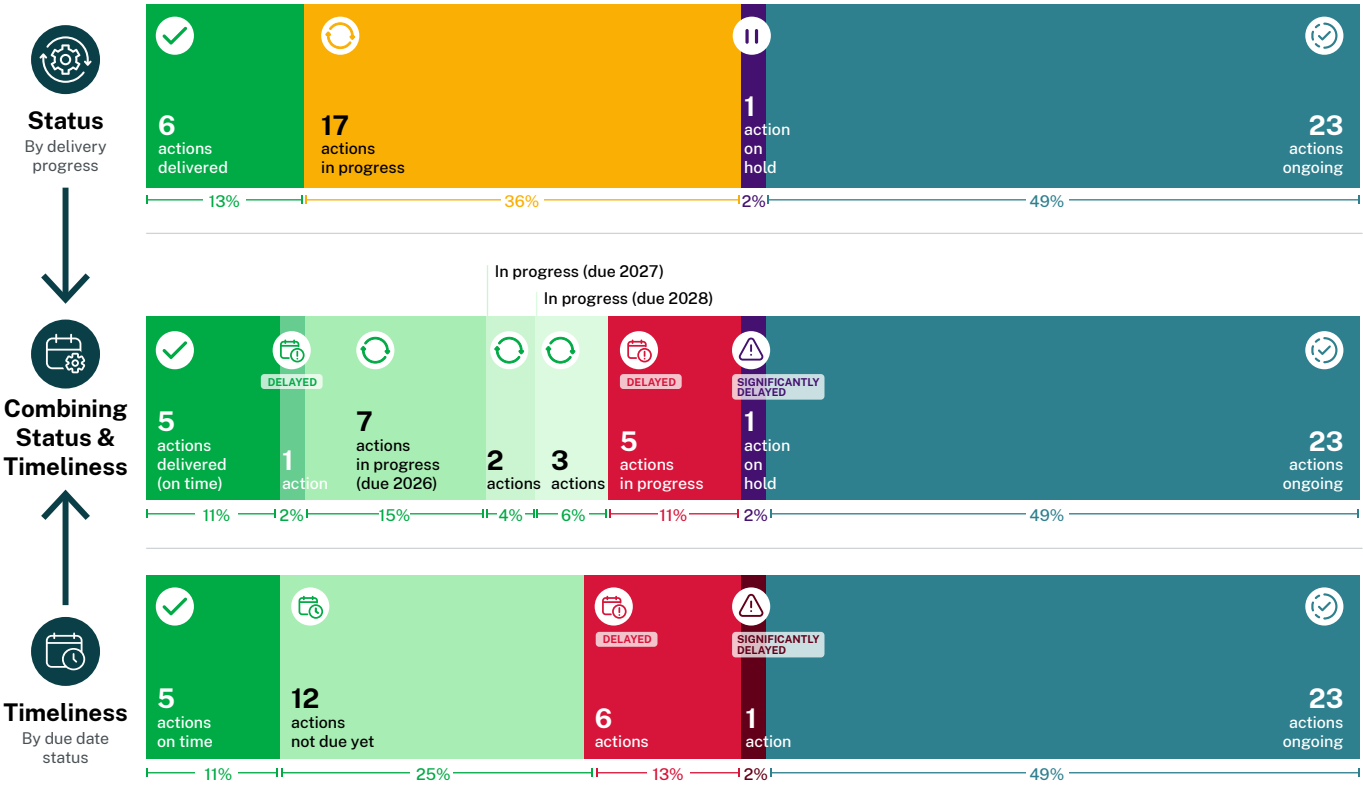
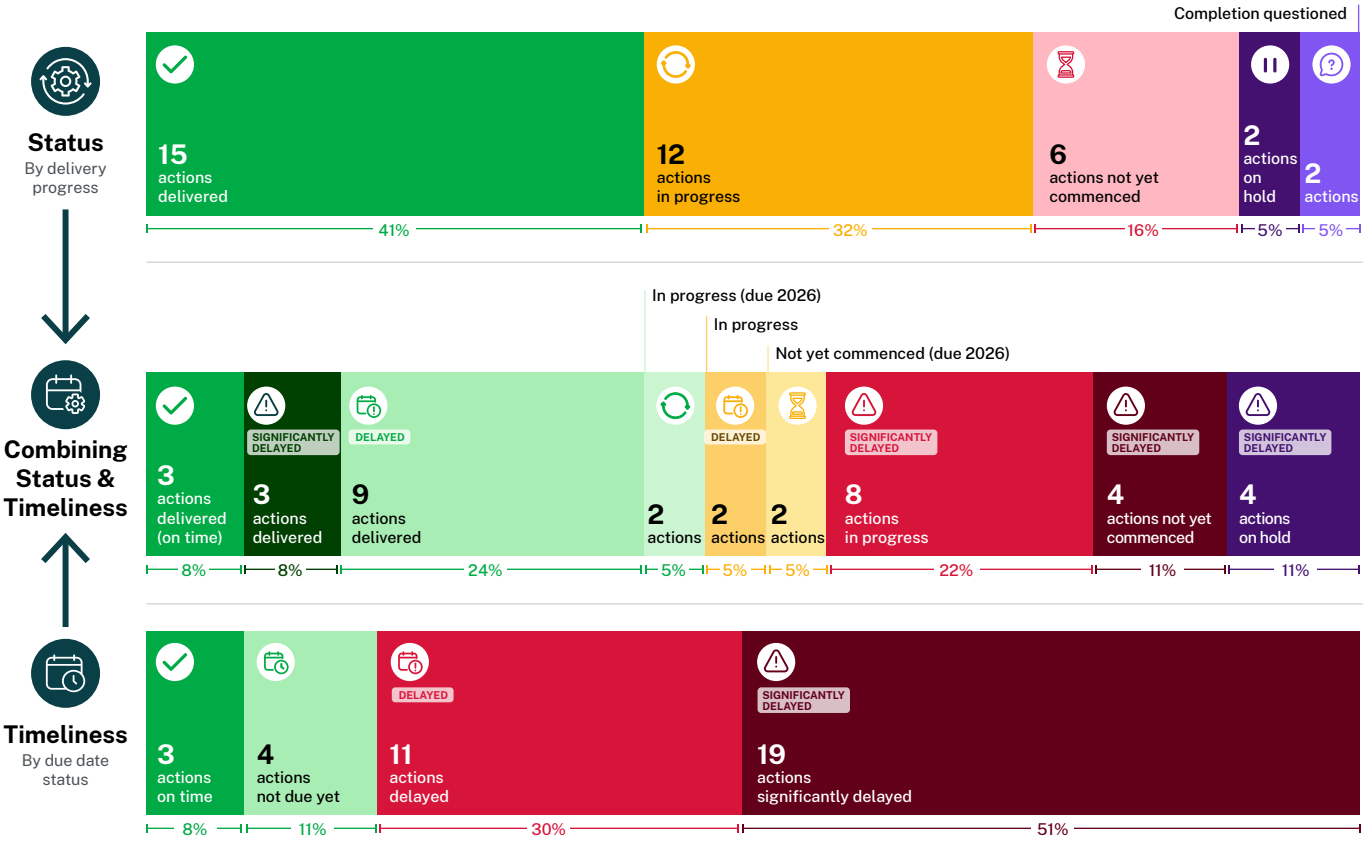


Figure 40: The Commission's assessment of the progress of the SDMP, including status, timeliness and combined status and timeliness for adaptation relevant actions in the SDMP



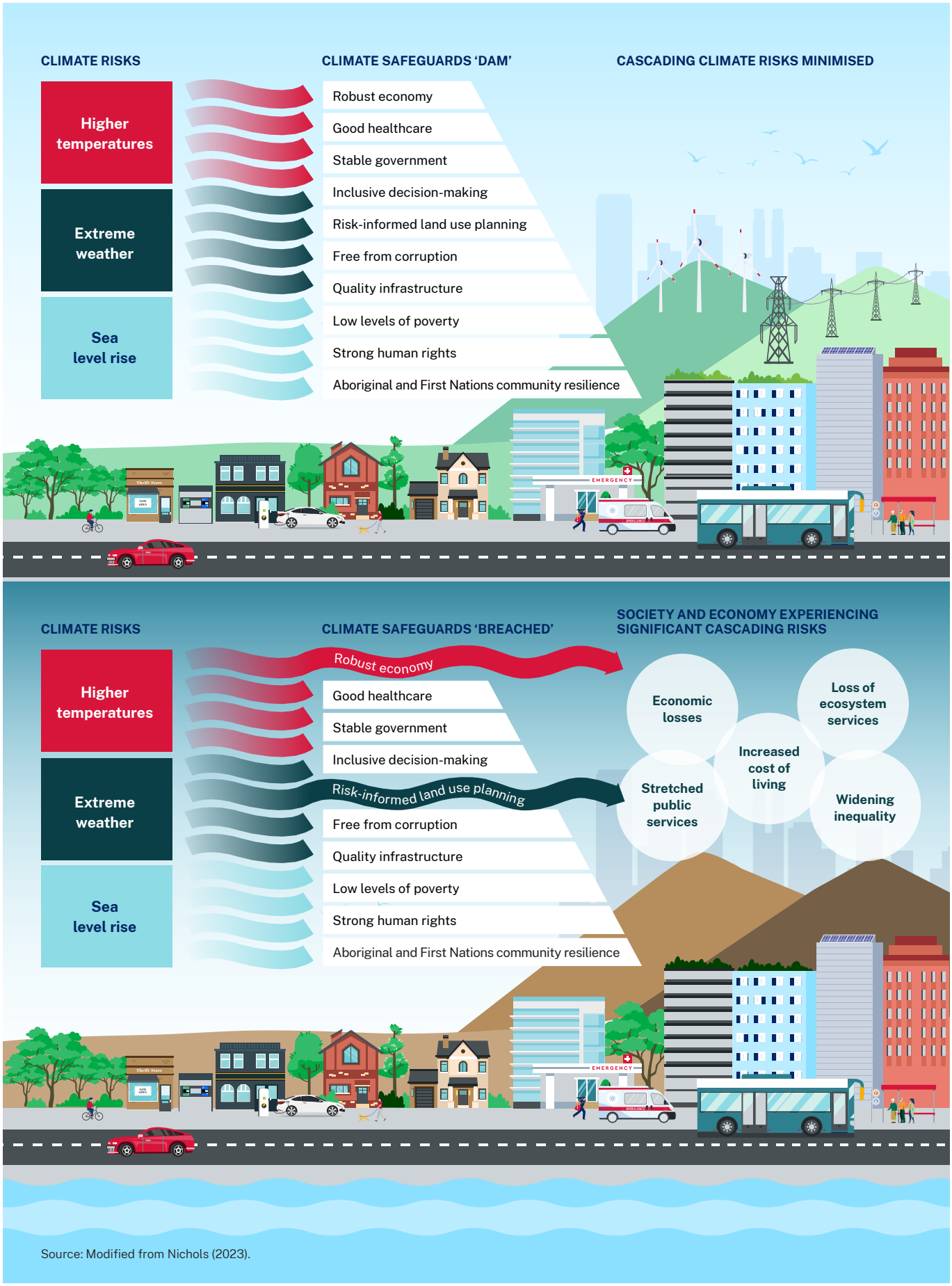
3.4 Adaptation policy in NSW needs greater cohesion, requiring stronger governance and more investment

Effective governance of adaptation policy and action by the NSW Government is critical to make NSW more resilient to a changing climate, complementing action taken by individuals, communities and businesses. Clear, coordinated and adequately resourced governance is foundational to effective adaptation, enabling action to reduce climate risk and avoid both the inertia from limited action being taken and the maladaptive outcomes that could arise from poorly planned responses.

Strong governance builds effective resilience and provides a 'dam' to safeguard against climate risks and prevent them from cascading across society into large scale impacts such as civil unrest and increased inequality (Figure 41).

> **"Adaptation is inevitably shaped by governance. For adaptation to succeed, governance needs to carefully guide and delimit it, drive and expand it, and results in directly reducing climate change risks"**
>
> The National Climate Risk Assessment's (NCRA) Governance Technical Report (Rickards et al., 2025 p. 10)

Figure 41: Examples of 'safeguards' that strong governance systems can provide to reduce the adverse impacts of cascading climate risks, and the consequences of those safeguards being breached



Source: Modified from Nichols (2023).

The NSW Government has key responsibilities for adaptation action. Under the 2012 Council of Australian Government's (COAG) roles and responsibilities for climate change adaptation in Australia,[70] state and territory governments are responsible for a broad range of services, legislation, assets and infrastructure that can materially influence exposure and vulnerability to climate hazards. This includes emergency services, land-use planning, transport, health services and public housing. State and territory governments also deliver policies and programs that provide local and regional science and information, manage risks to assets and services, and encourage climate resilience and adaptive capacity (Cth DCCEEW, 2012). The Commonwealth Government is currently working with states and territories to develop a detailed action agenda for the National Adaptation Plan following its release alongside the NCRA in 2025.

The primary governance mechanism for coordinating adaptation policy and action across the NSW Government is the Climate Change Network, established by The Cabinet Office and NSW DCCEEW to oversee whole-of-government implementation of climate change objectives under the Climate Change Act. Most NSW Government agencies are represented through the Climate Change Network.

In 2025, the Climate Change Network completed a climate change policy and program stocktake for both climate change mitigation (emissions reduction) and climate change adaptation. Agencies were asked to provide information on the scope, status, budget and type of initiatives underway. The Commission analysed this information to assess the maturity of adaptation policy across the NSW Government, supplementing its assessment of implementation for the CCAS, the Adaptation Action Plan and SDMP.

Coordination of adaptation activities needs to be improved across NSW Government

Fragmentation and a lack of coordination across government entities are widely recognised as barriers to effective adaptation decision-making across jurisdictions (Chan et al., 2026; Rickards et al., 2025). The NCRA's Governance Technical Report identified fragmentation as a frequently cited governance risk factor for adaptation across Australia (Rickards et al., 2025). An international study into adaptation laws and policies confirmed the importance of formalising institutional coordination through legal frameworks, resourcing, clear agency roles and responsibilities and integration into fiscal policy frameworks (Chan et al., 2026).

The NSW Government has made notable steps to improve adaptation governance coordination through the establishment of the Climate Change Act and the Climate Change Network. Numerous actions in the CCAS and the Adaptation Action Plan also focus on mainstreaming adaptation considerations across the NSW Government, such as action 13 of the CCAS to "appoint a climate change risk officer in each NSW Government cluster to embed climate change risk and adaptation across Government actions and decisions by the end of 2023" (NSW DCCEEW, 2022). However, gaps remain in clarifying responsibilities for adaptation, institutionalising adaptation within fiscal policy frameworks, and the integration of equity considerations.

70 COAG has been replaced with National Cabinet.

The Climate Change Network supports some interagency engagement on adaptation through its Adaptation Working Group, but as a committee without explicit links to cross-government Ministerial responsibility or formal governance architecture such as a cabinet committee, the group lacks sufficient authority and accountability for meaningful engagement and coordination across the NSW Government. A formal, legislated governance mechanism that ensures Ministerial responsibility for adaptation activities in their respective portfolios would improve accountability and coordination across NSW Government agencies.

NSW has made strong progress in integrating adaptation into disaster risk reduction. The SDMP focuses heavily on risk reduction for climate-related disasters, and the *Reconstruction Authority Act 2022* (NSW) gives equal priority to disaster recovery, disaster preparedness and adaptation. While this integration has benefits, it also creates risks of duplication. A 2024 review of the *Reconstruction Authority Act 2022* (NSW) found that the Reconstruction Authority collaborates effectively with other government agencies but recommended that it continue to work closely with them to minimise duplication in their functions (Joint Select Committee on the NSW Reconstruction Authority, 2024). In response to the review, the NSW Government committed that "further guidance and clear governance arrangements will be developed around responsibilities for preparedness and mitigation activities, data, modelling and information sharing" (NSW Government, 2025b).

Responsibilities for climate change adaptation and disaster risk reduction activities should be clearly defined, ensuring information sharing and the mainstreaming of adaptation across government agencies. The NSW Government has committed to consult on regulations that embed the adaptation policy cycle under the Climate Change Act (NSW DCCEEW, 2025c). These regulations should specify timeframes for state-wide climate risk assessments, adaptation action plans and adaptation monitoring and evaluation to improve the timely delivery and sequencing of the adaptation policy cycle. They should also factor in mechanisms for compliance. This would provide greater certainty, continuity and accountability for adaptation actions. The regulations should also establish a clearer governance framework for adaptation in NSW.

Recommendation 6A: The NSW Government should introduce regulations to clarify roles and responsibilities for adaptation and specify timeframes for statewide climate risk assessments, adaptation action plans and adaptation monitoring and evaluation.

Implementation of the adaptation policy cycle in NSW has been disrupted

Commission analysis indicates that key gaps and disrupted action sequencing within the adaptation policy cycle have hindered timely and effective adaptation action in NSW. While NSW is still in its first stage of implementing the adaptation policy cycle, delays to foundational elements have constrained progress and reduced the effectiveness of subsequent planning and implementation. As adaptation policies and actions are necessarily focused on long-term issues, with outcomes at times taking many years to become evident, urgent and effective implementation is required to limit future costs and avoid closing windows of opportunity to act. Otherwise, maladaptive decisions such as poorly planned communities or infrastructure which is not resilient to hazards can lock in increased exposure and vulnerability to climate risk for decades (IPCC, 2022a, Summary for Policymakers, p. 27).

Ultimately, the purpose of adaptation action is to build resilience to climate change, while drawing on the best knowledge and resources available at the time to do this as effectively as possible (Barnett et al., 2026). Climate risk assessments are an important foundational step of the adaptation policy cycle to identify and prioritise significant risks (NSW DCCEEW, 2022). Adaptation planning and the development of programs and policies can then be appropriately focused to ensure that NSW is more resilient

Flood damaged houses in Lismore

to a changing climate. The NSW Government committed to publishing a climate change risk and opportunity assessment at least every five years under action 9 of the CCAS (NSW DCCEEW, 2022). The first CCROA was due in 2023 and is now expected to be published in 2026.

Assessing climate risk is challenging. Comprehensive, robust assessments can take significant time and resources (Rickards et al., 2025). There are trade-offs between approaches that consider quantitative information on climate hazards and impacts which may carry uncertainty, compared to approaches that place greater weight on qualitative information (see Section 3.2). There are limited examples of climate risk assessments that capture complex risk or apply a systems approach. However, several states and territories have successfully delivered jurisdiction-wide climate risk assessments including Tasmania, South Australia and the ACT. The release of the NCRA and state-wide climate risk assessments in other states demonstrates that integrated assessments combining quantitative and qualitative assessment of climate risk are achievable and valuable, though they can be resource intensive.

In its 2024 Annual Report, the Commission suggested that NSW DCCEEW prioritise resources and adopt a method that delivers a fit-for-purpose risk assessment as soon as possible. Iterative delivery of key elements of the adaptation policy cycle is important as knowledge and methodologies improve into the future. A fit-for-purpose climate risk assessment which provides timely and actionable information on priority risks is essential to prioritise adaptation action. The continued absence of a state-level assessment for NSW remains a key gap and limits the ability to enable effective prioritisation and progression of dependent actions.

Ongoing delays to the CCROA have had flow-on effects to the adaptation policy cycle in NSW, such as delays to delivering actions 1 and 2 relating to metrics to measure progress towards resilience and adaptation. The Adaptation Action Plan was developed in the absence of a completed state-wide risk assessment. Many actions are therefore not clearly linked to priority risks, are broadly defined, or focus on identifying priorities rather than delivering adaptation outcomes. The delay in finalising the CCROA has disrupted the intended sequencing of the adaptation policy cycle.

The delayed delivery of approximately half of actions in the CCAS and SDMP by over 12 months beyond their original due dates is a barrier to adaptation action in NSW. Timely implementation of NSW Government agency actions is crucial to drive adaptation progress in NSW. There is only one significantly delayed action in the Adaptation Action Plan, however there are issues regarding the number of actions with ongoing timeframes which are further outlined in the following section.

Two actions in the CCAS may not be complete despite self-assessments by NSW Government agencies as being complete. Action 11 of the CCAS is to "update or develop policies, guidance, processes and standards (such as NSW Government Business Case Guidelines, Guide to Cost-Benefit Analysis, the NSW Gateway Policy and the Asset Management Policy) so that significant NSW Government decisions rigorously consider climate change risks, opportunities and adaptation" (NSW DCCEEW, 2022). NSW Treasury considers the action complete as the policies mentioned are provided as examples and updates have been delivered for the NSW Government Business Case Guidelines and the NSW Government Guide to Cost-Benefit Analysis.

Elements of the NSW Gateway Policy including Assurance Frameworks and Gateway Workbooks were updated in 2026, with some including information regarding sustainability and resilience considerations for NSW Government decisions made through the Gateway Policy. While NSW Treasury is considering updates to its Asset Management Policy, at this stage it does not explicitly consider climate change risk, resilience or adaptation. However, decisions made now about assets and infrastructure need to consider locations and designs that can withstand more frequent and more intense climate events. NSW Treasury should continue integrating climate risk and adaptation into relevant policy and operational documents so that NSW Government decisions adequately consider climate change risks, opportunities and adaptation.

Action 12 of the CCAS is to "clearly define responsibilities for NSW public sector senior executive leadership to improve oversight around climate change risks, opportunities and adaptation" (NSW DCCEEW, 2022). While the delivery of Climate Risk Ready leadership sessions to NSW public sector senior executives has been successfully informing participants about climate change risk management, there are no relevant documents to provide the "clear definition of responsibilities for NSW public sector senior executive leadership" that would improve oversight around climate change risks, opportunities and adaptation.

The Commission found that limited executive engagement is a barrier to climate risk management and adaptation by NSW Government agencies. The NSW Government should clarify the responsibilities of NSW public sector senior executives through appropriate mechanisms such as NSW Treasury Policy and Guidelines and the role descriptions for senior executives. It should also consider placing responsibilities for climate risk and adaptation on senior executives through mechanisms such as employment contracts, performance agreements, the NSW Public Service Commission's capability framework or regulations under the *Government Sector Employment Act 2013* (NSW).

Recommendation 6B: The NSW Government should release the Climate Change Risk and Opportunity Assessment as soon as possible. Within 6 months of its release, the findings of an independent evaluation into its development should be published to inform the delivery of future assessments.

Recommendation 6C: The NSW Government should ensure the timely delivery of actions under the Climate Change Adaptation Strategy, State Disaster Mitigation Plan and Climate Change Adaptation Action Plan.

Adaptation activities across the NSW Government are at an early stage of maturity

Across Australia, adaptation action planning is at an early stage, with first plans developed in most states and territories. The NSW Government has made positive steps to improve the maturity of adaptation policy and action in recent years by passing the Climate Change Act, releasing the CCAS, SDMP, Adaptation Action Plan and updated climate change projections, delivering some actions under key policies and working to mainstream the consideration of climate risk into NSW Government operations to a certain extent.

However, the Commission's analysis of agency responses to information requests, the Climate Change Network policy stocktake, and public reporting indicates that many NSW Government agencies are at an early stage in building an understanding of and implementing adaptation activities.

The Commission assessed adaptation maturity using the Australian Adaptation Database typology of adaptation actions, which categorises activities by purpose, ranging from governance instruments and evidence-building through to engagement, institutional change and interventions that directly reduce vulnerability (Figure 42). The distribution of activities across these categories provides an indication of progress towards greater resilience (NESP Climate Systems Hub, 2025). The 8 adaptation purpose categories differentiate between various types of adaptation activities, recognising that each type contributes differently towards reducing vulnerability to climate change (Bagot-Jewitt et al., 2026). An individual adaptation project may have multiple purposes.

The 8 categories of adaptation activity purposes are conceptualised as a pyramid to reflect how different activities demonstrate progression in the maturity of adaptation action. At the base of the pyramid, governance instruments, research and information gathering activities can provide enabling conditions for adaptation but do not directly increase resilience or reduce risk in isolation. At the intermediate level of the pyramid, engagement, knowledge building, institutional change and coordination activities enable more effective adaptation by facilitating knowledge exchange within and between governments and communities. At the peak of the pyramid are interventions, actions taken to directly reduce climate risk or increase resilience. Interventions are typically more effective when they are founded on adaptation actions aligning with lower levels of the pyramid.

The distribution of adaptation activities across the pyramid categories provides an indication of adaptation maturity in a jurisdiction. For example, jurisdictions may be undertaking many foundational activities such as governance instruments or information gathering but relatively few intermediate level activities or interventions. This pattern would indicate that adaptation is still in its earlier stages. As maturity increases, a greater proportion of activities would be expected at intermediate and intervention levels. The pyramid also reveals where gaps in enabling conditions may be limiting progress toward more mature adaptation action.

Penrith Beach

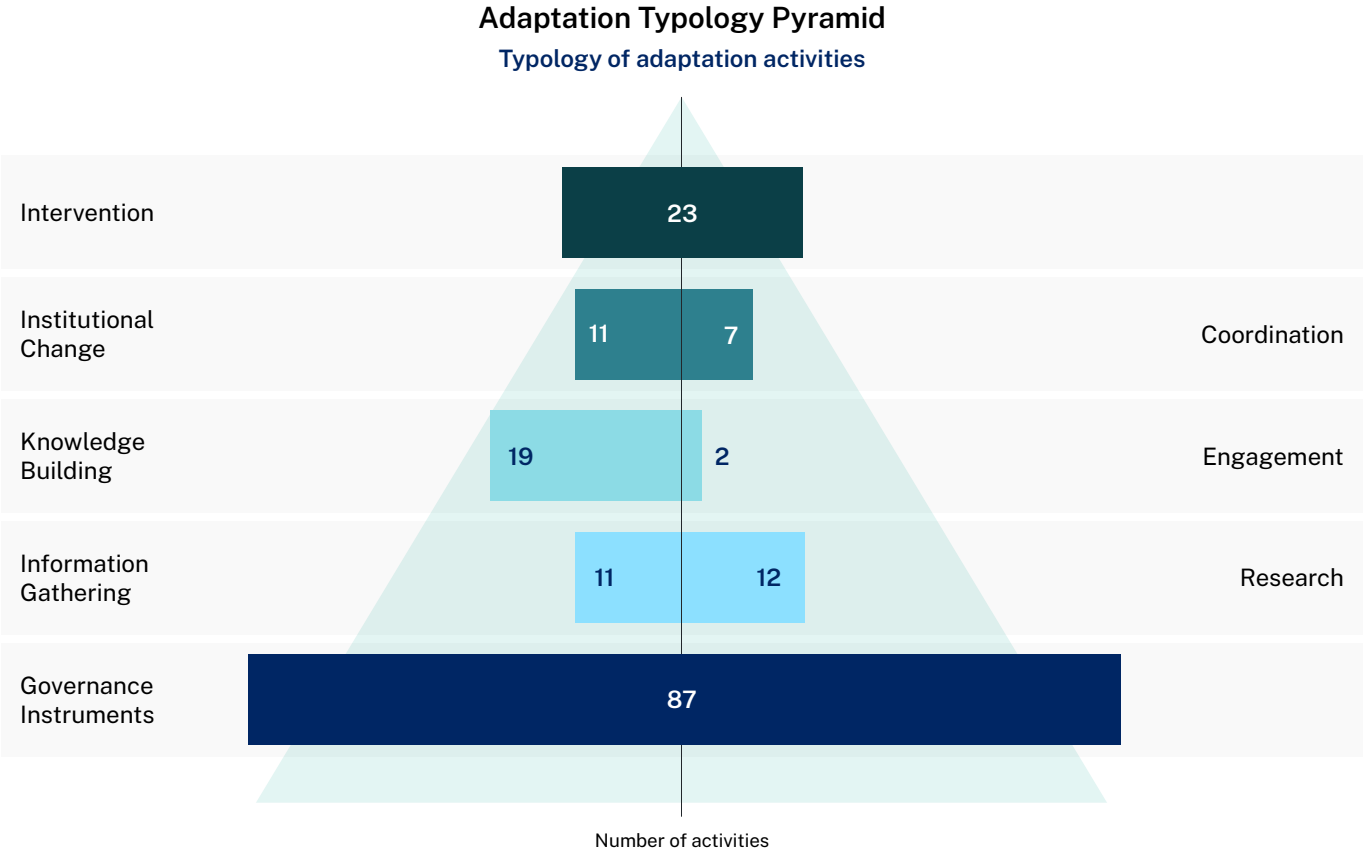
Figure 42: The typology for progress in adaptation actions, represented as a pyramid which progressively builds to adaptation interventions that directly address climate risks to reduce vulnerability

Source: Modified from Brullo et al. (2026).

Analysis of the distribution of adaptation activities reported through the Climate Change Network policy stocktake demonstrates strong focus on foundational adaptation activities, including governance instruments, information gathering, and research. There is comparatively limited focus on adaptation activities such as engagement, coordination, and institutional change, which are key enablers of effective adaptation interventions. Some mature adaptation activities are taking place in NSW, such as upgrades to social and Aboriginal housing and increases to canopy cover in Greater Sydney through the Greening our City program. However, the initiation and effectiveness of broader mature adaptation activities may be limited by weaknesses in the enabling conditions (Figure 43).

Commission analysis of the type of action in the CCAS, the Adaptation Action Plan and the SDMP found a similar pattern. Across all 3 instruments, actions tend to focus on foundational activities including governance instruments, information gathering and research. Fewer actions are focused on engagement, coordination and institutional change.

Figure 43: Assessment of adaptation activities from the Climate Change Network's policy stocktake. The numbers indicate the number of activities recorded for that type of adaptation activity



Source: Modified from the Brullo et al. (2026) adaptation typology pyramid.

In NSW, around half of adaptation activities remain foundational, indicating that the transition toward more engagement and coordination-focused activities is still developing. This was also evidenced in the Commission's investigation into NSW Government agency usage of climate change projections, as most agencies have not yet commenced detailed adaptation planning or implementation of adaptation activities, beyond the identification of climate risk.

First Nations knowledge and governance systems, which could provide useful guidance for climate decision-making, are not sufficiently integrated into adaptation planning and action. Opportunities to improve the integration of First Nations leadership and systems across adaptation and emissions reduction activities are outlined in Chapter 4.

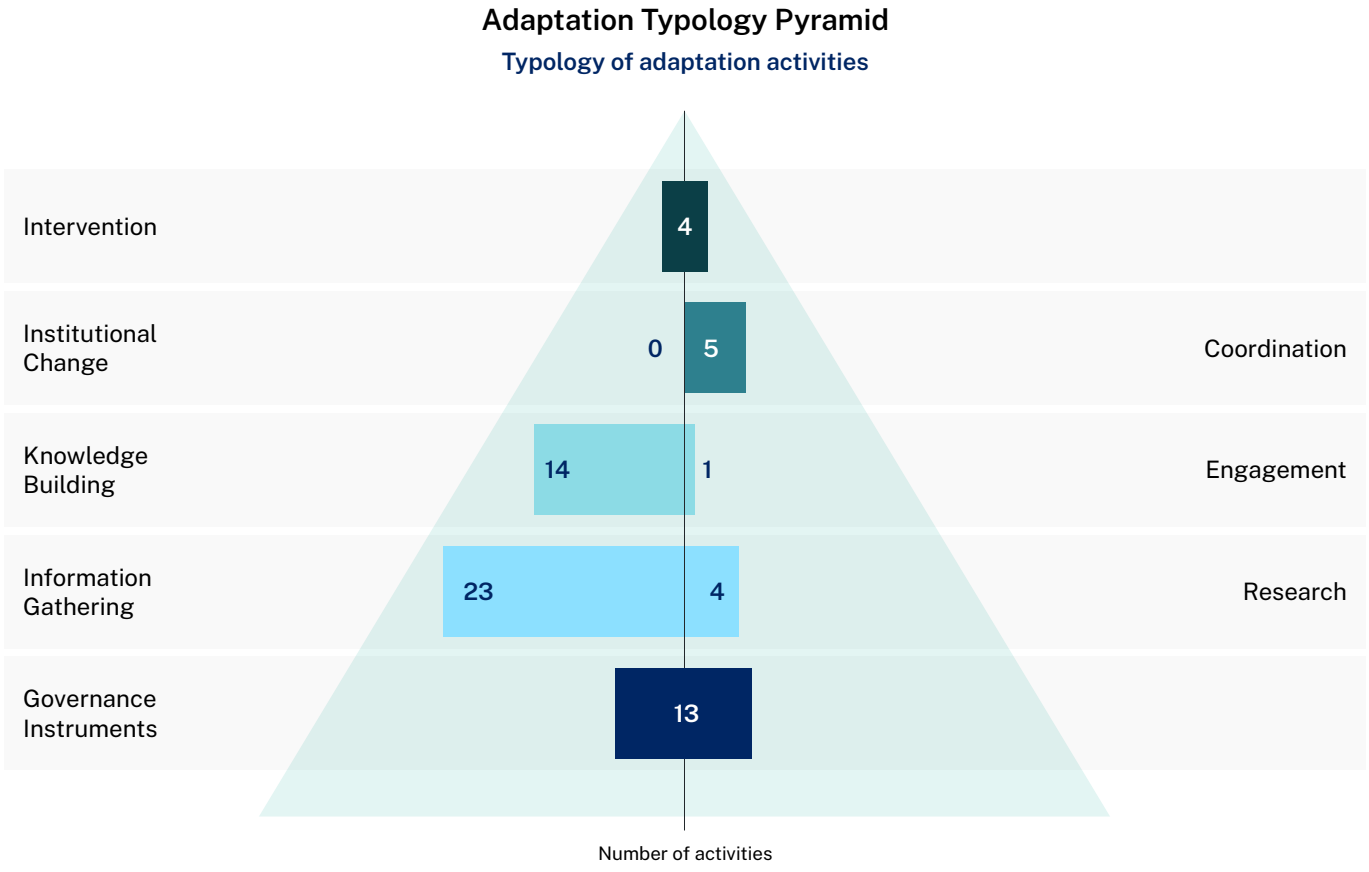
Evidence from Australia and internationally suggests strengthening engagement is key for effective adaptation governance to enable more mature adaptation outcomes (Chan et al., 2026; Rickards et al., 2025). Limited engagement has been identified in the NCRA as the third most cited governance risk factor for adaptation across Australia, and global reviews note weaknesses in stakeholder engagement and consultation within adaptation and broader climate frameworks (Averchenkova & Chan, 2023; Chan et al., 2026; Rickards et al., 2025). Responses to the Commission's 2025 consultation similarly identified gaps in community engagement with adaptation activity and confidence in government delivery at the local level, as expanded in Chapter 5. The low number of intermediate maturity adaptation activities taking place in NSW such as engagement, coordination and institutional change indicates that this is also an area of weakness for adaptation in the state.

The NSW Government should progress adaptation activities beyond risk identification toward actions that directly increase resilience to climate risks. Investment to enhance agencies' ability to embed climate change risk and adaptation across all agency decisions and activities, such as continuing the CCRO program, could assist this progress. It should also support progression of adaptation through stronger community engagement, coordination across agencies and institutional change, as data from the Climate Change Network's policy stocktake indicates this is currently an area of weakness.

The Commission's typology of actions in the Adaptation Action Plan particularly demonstrates relatively low maturity compared to leading practice (Figure 44). This is likely due to the delay in finalisation of the CCROA and subsequent lack of awareness of climate risk management priorities. Following this assessment, the Commission reviewed the Adaptation Action Plan according to the minimum criteria outlined by the CCAS. The quality and appropriateness of the Adaptation Action Plan was assessed by benchmarking against other detailed adaptation action plans using evaluation criteria outlined by Olazabel et al.'s (2019) Adaptation Policy Credibility framework, designed to assess the strengths and areas for improvement of adaptation action plans.

The Adaptation Action Plan includes a range of actions that may enhance adaptation effort across the NSW Government. However, its credibility would be improved through defined resourcing, clearer strategic prioritisation of climate risks, and coherence across actions.

Figure 44: Assessment of adaptation activities from the Adaptation Action Plan, showing the number of activities recorded for each type of adaptation activity



Source: Modified from the Brullo et al. (2026) adaptation typology pyramid.

The Adaptation Action Plan meets more than half of the criteria outlined by the CCAS. Key criteria not met include:

Set priority actions

- There is a lack of coherence and strategic prioritisation across actions.
- Actions largely align with incremental adaptation and do not address criteria to include transformational adaptation or "support adaptation by the most vulnerable and sensitive groups and ecosystems".

Address priority risks and opportunities

- The lack of prioritised risks and opportunities from the CCROA mean that actions in the plan are not strategically targeted to achieve the greatest climate risk reduction.
- Actions do not state the level of priority for actions or risks.

Enable systems adaptation

- Actions in the plan are generally focused on delivering state-wide, sector-specific actions.
- There are no actions to address specific shared risks across sectors, systems, regions and stakeholders.
- There are limited actions that may support delivery of place-based action as outlined in the criteria.

Set short, medium, and long-term goals, objectives and targets

- Many actions are not "specific" or "measurable" and do not have "clear implementation timeframes so progress can be effectively measured", as outlined in the criteria.
- Many actions in the plan do not have clear implementation timeframes with nearly half of actions defined as "ongoing".

The Adaptation Action Plan has strengths and weaknesses according to the Adaptation Policy Credibility Framework criteria. Areas of relative strength compared to other jurisdictions are that timeframes are provided for the implementation of the majority of actions, a process for updating the plan has been outlined, and different agencies lead individual actions. However, NSW DCCEEW has responsibility for approximately half of actions and there are notable agency omissions such as the Department of Education and the Department of Communities and Justice which prevents the plan from having a balanced, whole-of-government distribution of action leads.

Relative to other adaptation action plans from around Australia, some areas of weakness are:

- that it lacks an overall budget for implementation
- no public consultation or other participatory processes informed development of the plan
- there is limited available information on the approach to plan scoping and development
- there is no explicit link between adaptation actions and climate risk.

Several international adaptation action plans meet common criteria that are areas of weakness for most Australian adaptation action plans, including the French third national adaptation plan (Ministère de la Transition Écologique, 2025), the Massachusetts 2023 Resilient Mass Plan (Executive Office of Energy and Environmental Affairs, 2023) and Vancouver's Climate Change Adaptation Strategy (City of Vancouver, 2024).

Areas of weakness for Australian adaptation action plans include a lack of funding and/or resourcing definition for specific actions, lack of clear information on how actions were prioritised or what informed decision-making during action plan development, limited focus on addressing vulnerability in disadvantaged groups and limited criteria outlined for monitoring and evaluation.

Addressing vulnerability in disadvantaged groups and communities is essential in adaptation policy as these groups are typically disproportionately exposed to hazards and have lower resilience and adaptive capacity (Sevoyan et al., 2013). International and interstate jurisdictions have a strong equity lens in their action plans, either by inclusion in scoring criteria or as an explicit objective, priority or other thematic grouping of actions. More actions to address vulnerability in disadvantaged groups would achieve greater consistency with the guiding principles of the Climate Change Act and the criteria for action plans originally set out in the Adaptation Strategy.

In line with best-practice for adaptation action plans, future updates of the Adaptation Action Plan should adopt a prioritisation framework to screen, score and assign priority-levels to actions based on their ability to reduce climate risk, feasibility of implementation including resourcing, and adaptability over time to scale up or down as climate risk knowledge improves. Vancouver's Climate Change Adaptation Strategy Action Evaluation and Prioritisation Matrix offers an example of discrete scoring criteria (City of Vancouver, 2024).

Actions should have clearly defined, time-bound outputs to ensure adaptation efforts are targeted and measurable. Currently, nearly half of the actions in the action plan are designated as "ongoing" without specified outputs, limiting accountability and the ability to measure progress. In the absence of clearly defined, state-wide metrics under action 1 of the Strategy which could support implementation of the Adaptation Action Plan, each action should be accompanied by clear, output-based performance indicators that track delivery. To strengthen governance of the Adaptation Action Plan and improve accountability across NSW Government agencies, progress against these indicators should be reported regularly and transparently.

The Commission's Heat Stress Spotlight Report identified a range of important gaps in strategic planning, planning assessments, and community preparedness which demonstrated that adaptation policy and action to reduce the risk of heat stress is currently at low maturity in NSW. It found that even where local communities and councils have clear knowledge of their risks, vulnerabilities, and how to address them, they still face financial and institutional barriers to implement actions. It also found that broadly councils are well placed to plan for heat stress, but face capacity and capability constraints for assessing heat stress risk and implementing actions (Net Zero Commission, 2026b). The NSW Government should implement actions that address the findings of the Heat Stress Spotlight Report to ensure NSW is appropriately prepared for and responding to the increasing health impacts of heat stress in NSW (see also Box 9 in Section 2.9).

Recommendation 6D: The NSW Government should progress adaptation activities beyond risk identification toward actions that directly increase resilience to climate risks.

Recommendation 6E: The NSW Government should consider action prioritisation, progress indicators and a greater focus on addressing vulnerability in disadvantaged groups and communities, including First Nations peoples, within its forthcoming review of the Climate Change Adaptation Action Plan.

Recommendation 6F: The NSW Government should implement actions that address findings from the Commission's Heat Stress Spotlight Report.

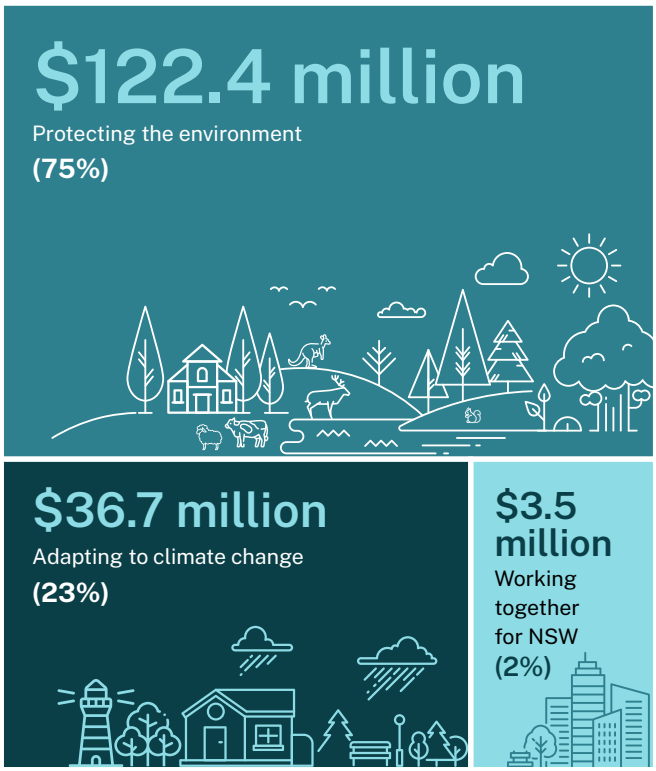
Resourcing of adaptation activities across the NSW Government is insufficient

Insufficient resourcing is a significant barrier to effective climate action in NSW. The NCRA Governance Technical Report identified inadequate funding as the most frequently cited governance risk factor for adaptation across Australia (Rickards et al., 2025). The Commission's evaluation of implementation progress for the CCAS, the Adaptation Action Plan and the SDMP supports this finding for NSW.

Information collected through the Climate Change Network policy stocktake indicates that overall NSW Government spending on adaptation cannot be reliably identified. Agencies reported budgets and expenditure inconsistently, with differences in how adaptation activities were defined and whether funding was historic, forward-looking, secured or estimated.

The primary existing funding vehicle for adaptation initiatives in the NSW Government is the Climate Change Fund (CCF), which has existed since 2007 and is currently in its fourth year of an 8-year funding cycle from 2022 to 2030. In 2024–25, the CCF provided $162.6 million for "resilience and adaptation programs" (Figure 45). The majority of this funding ($119.7 million of the $122.4 million under the "Protecting the environment" theme) supported conservation land management, including private land conservation delivered through the Biodiversity Conservation Trust and funding for National Parks and Wildlife Service estate expansion and fire management. Approximately $36.7 million was directed to core adaptation programs such as the Greening our City program for Greater Sydney and the coastal, estuary and floodplain management programs and associated grants programs for local councils. The remaining $6.2 million for resilience and adaptation programs was directed to Air Quality Monitoring and Forecasting and Water Conservation in Greater Sydney (NSW DCCEEW, 2025b).

Figure 45: The distribution of funding for resilience and adaptation programs for 2024–25 from the Climate Change Fund



This core adaptation funding is insufficient to address identified adaptation needs. For example, the audit into the coastal management framework implementation found NSW DCCEEW estimated the total cost of all actions within 17 certified Coastal Management Programs at around $342 million, including actions for coastal adaptation. Although the implementation of these programs is resourced by local councils and private beneficiaries in addition to the NSW Government, there is only around $54 million of funding remaining for the Coastal and Estuary Grants Program to be allocated to councils for actions within certified programs (NSW Audit Office, 2025). The estimate of costs covered 16 councils with a certified Coastal Management Program out of the 55 coastal councils across the state (NSW Audit Office, 2025). An increase in funding will be required to meet needs in future years solely for coastal adaptation.

Adam McLean

Although funding for conservation land management and expansion may offer resilience benefits, programs that have other primary objectives outside of climate adaptation should be funded through other mechanisms so that the CCF allocation for managing the impacts of climate change can be strategically prioritised for programs with climate resilience as a primary objective.

The NSW Reconstruction Authority has the highest total reported budget for adaptation activities across the NSW Government despite its adaptation mandate being more narrowly focused on disaster risk reduction, as it leads 8% of the adaptation activities reported to the Climate Change Network policy stocktake. In comparison, NSW DCCEEW has less than half of the Reconstruction Authority's reported adaptation funding despite broader responsibilities for adaptation, as it leads 36% of the adaptation activities reported to the Climate Change Network policy stocktake.

Some individual adaptation activities may require significantly higher budgets than others. However, data from the policy stocktake and information gathered through the Commission's assessment of the use of climate change projections by agencies indicates that NSW DCCEEW is currently seriously under-resourced to deliver its share of adaptation responsibilities.

Funding for adaptation should better reflect each agency's share of responsibility for delivering policy and action.

The NSW Reconstruction Authority and the SDMP do not receive funding from the CCF but are funded through several streams. This includes agency appropriations and Disaster Recovery Funding Arrangements, a cost-sharing agreement between the Commonwealth and state and territory governments for disaster response. The NSW Reconstruction Authority administers funding for disaster relief and recovery programs under the Disaster Recovery Funding Arrangement, including money for betterment to replace damaged assets and infrastructure with more resilient assets and infrastructure.

Funding constraints are a barrier to implementing actions under the CCAS, the Adaptation Action Plan and the SDMP, indicating that adaptation is systemically under-resourced across the NSW Government. For example, approximately 20% of actions under the SDMP are currently on hold due to funding constraints. Adequate funding for both climate change adaptation and the preparedness function of disaster risk reduction is needed to enable effective adaptation through a coordinated increase of funding across all NSW Government portfolios with responsibilities for adaptation.

As the impacts of climate change and costs for adaptation escalate, it will be important for the NSW Government to consider financing mechanisms for adaptation activities in both the near-and long-term, including relevant elements of disaster risk reduction, corresponding to the scale and urgency of action required to limit adaptation shortfalls. Development of a financing strategy is particularly important as the quantum of funding required may not be met by existing mechanisms such as the CCF. This should also consider opportunities for private sector investment to complement public adaptation investment where appropriate.

Development of a long-term financing strategy should extend to resourcing First Nations communities and organisations and financing for local councils, as they are best placed to understand their community's vulnerability and exposure to climate risks and identify local adaptation actions. Chapter 5 explores these areas in greater detail. As part of this work, the NSW Government should advocate for the Commonwealth Government to deliver reform that addresses structural gaps in adaptation financing for state governments and local councils, such as changes to how it distributes funding to state and territory governments and a national strategy for adaptation financing.

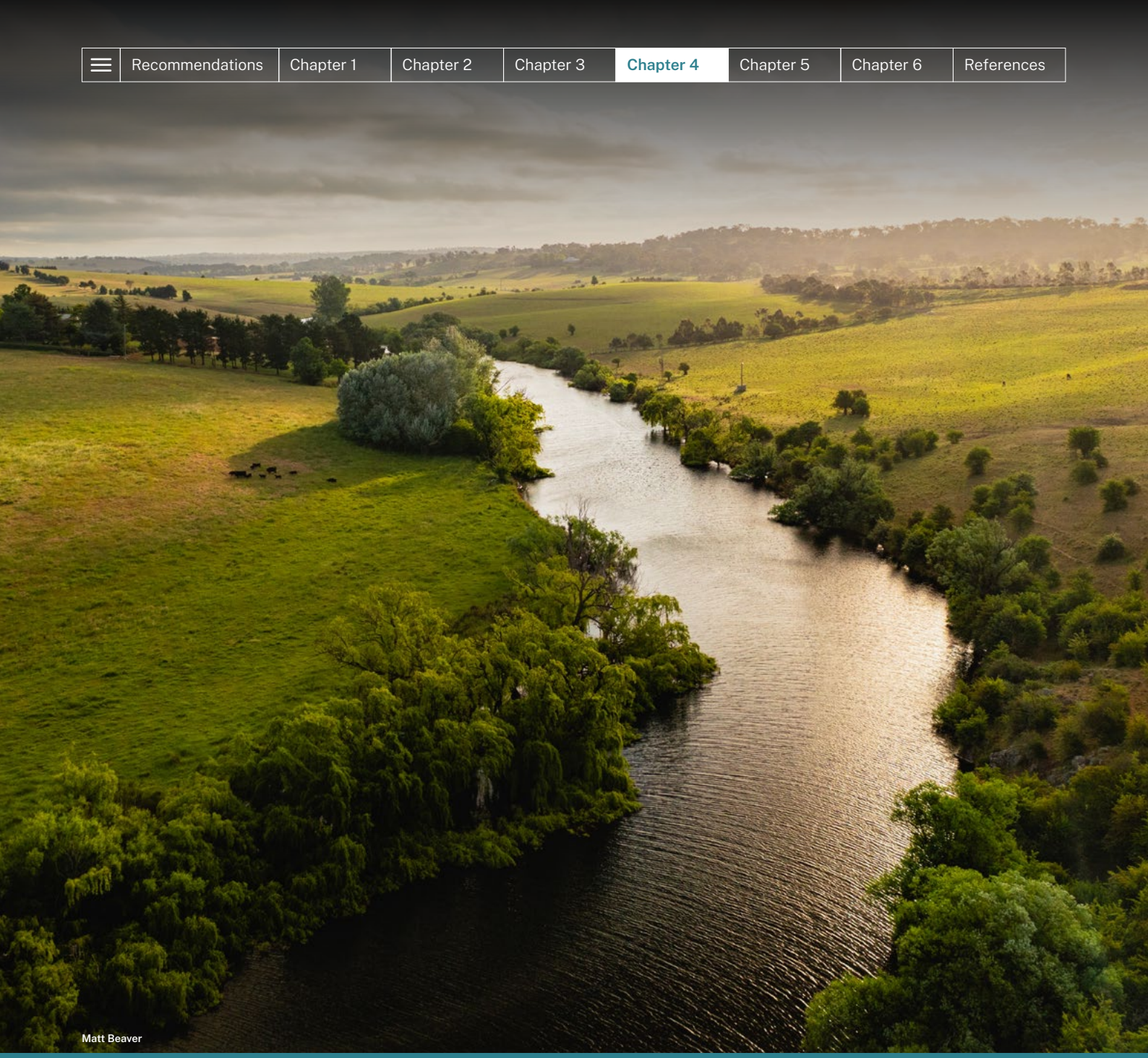
A consistent method for identifying adaptation funding and spending would provide important information to further institutionalise adaptation within public financial management and fiscal policy frameworks and also assist evaluation of NSW's progress towards the adaptation objective. For example, a metric to track progress that uses adaptation funding as a proportion of gross state product would enable comparison with other jurisdictions.

It is important that any method clarifies what constitutes a primary focus on adaptation. This would improve accountability, promote consistent reporting across the NSW Government and avoid any misrepresentation of activities which may obscure investment into core adaptation programs. Timely establishment of such a method would help long-term monitoring of progress, as this may become more complex over time as adaptation is progressively mainstreamed across the NSW Government.

Recommendation 7A: The NSW Government should develop a financing strategy to fund adaptation action which considers the economic benefits of proactive investment, the resourcing needs of agencies and local councils proportionate to their responsibilities, and the appropriate use of different funding sources, including the Climate Change Fund.

Recommendation 7B: The NSW Government should lead advocacy for Commonwealth policy change to address structural gaps in adaptation financing, such as a national adaptation finance strategy to drive state and local-level adaptation action.

Recommendation 7C: The NSW Government should provide visibility of NSW Government expenditure on climate change adaptation through regular reporting, supported by guidance of what is considered in scope of this expenditure.



Matt Beaver

Chapter 4

Embedding First Nations knowledge and leadership in climate decision making

4.1 First Nations knowledge systems

> **Aboriginal peoples are not responsible for the climate crisis, but we are prepared to be part of the solution. We have land, knowledge, and commitment to care for Country. We must now be equipped and empowered to lead in this space."**
>
> NSW Aboriginal Land Council submission to the Commission's 2025 consultation

First Nations knowledge systems, grounded in millennia of stewardship and responsibility to future generations, provide essential guidance for climate decision-making that considers long-term, cumulative and local impacts. There are opportunities for the NSW Government to better recognise First Nations knowledge and practice in developing its climate change policy.

In doing so, it is critical that the NSW Government moves towards governance models built on trust, consent, continuity and cultural authority.

As one not-for-profit organisation noted during the Commission's 2025 consultation:

> **First Nations' knowledge systems could play a vital role in shaping adaptation strategies. However, there is a long history of transactional knowledge exchange between western science disciplines and First Nations peoples that must be learned from and ameliorated."**

To genuinely include First Nations knowledge in policy, we need to understand it on its own terms, rather than selectively taking the parts that fit within existing Western approaches.

In line with the guiding principles in the Climate Change Act, the Commission is committed to ongoing learning from First Nations communities. The Commission will continue to drive consideration of First Nations knowledge and expertise within the NSW Government through its ongoing work.

4.2 First Nations-led recommendations to build community resilience

> **Aboriginal communities are already experiencing the compounding effects of climate change – from extreme heat to flood and bushfire exposure. These risks intersect with systemic disadvantage, making climate adaptation a core priority."**
>
> NSW Aboriginal Land Council submission to the Commission's 2025 consultation

In November 2025, the Commission participated in NSW's first Policy Roundtable on Aboriginal Disaster Resilience. The event, a joint initiative of the National Indigenous Disaster Resilience (NIDR) program, NSW Reconstruction Authority, the Premier's Department and Aboriginal Affairs NSW, brought together over 100 participants, including First Nations leaders, organisations and government agencies, to share stories of First Nations leadership in caring for Country and building resilience, and to identify priority intervention areas to enhance resilience.[71] The Roundtable Communique, released by the host organisation NIDR, is reproduced below and referenced as a footnote to ensure the actions are provided without re-interpretation.[72] These findings support the recommendations from the NSW Flood Inquiry that highlighted the importance of strengthening First Nations leadership and representation in disaster risk reduction and recovery.

Recommendation 8A: The NSW Government should embed First Nations leadership as a core pillar of climate governance, including by responding to the Aboriginal Disaster Resilience Policy Roundtable communique, to strengthen First Nations community resilience across NSW.

71 Government and community join forces at First Aboriginal Roundtable to drive disaster resilience | NSW Government
72 The full text of the Communique is available here.

Communique – New South Wales Policy Roundtable on Aboriginal Disaster Resilience

Australian Hall on Gadigal Country (Sydney), Thursday 27 November 2025

This Communique follows the NSW Policy Roundtable on Aboriginal Disaster Resilience, held at the Australian Hall, the birthplace of the Aboriginal civil rights movement. Representatives from the emergency management, disaster resilience and Aboriginal community-controlled sectors came together to discuss Aboriginal disaster resilience in NSW. This Communique is informed by these discussions and is directed to all individuals and entities supporting resilience across the emergency management continuum.

Environmental hazards such as fires, floods and heatwaves have always existed in Australia. Aboriginal people thrived in landscapes across the continent, which required long-held and refined skills and knowledge to cope with and respond to these hazards. Colonisation displaced Aboriginal people and with them, the resources now needed to live safely in landscapes that are prone to hazards.

> "*The first disaster that ever happened here was colonisation. They took our land, and they never bothered to ask the people who belong there, how they managed that land.*"

Colonial mismanagement of land and water, and the continued marginalisation of Aboriginal people and practices in emergency and land management has produced risks for all people and Australia's biodiversity. Colonisation has also created social, political and economic pressures that continue to make Aboriginal people particularly vulnerable to contemporary environmental hazards.

In recognition of these challenges, and the urgent need to respond with targeted actions, the NSW Reconstruction Authority, Aboriginal Affairs NSW, and Premier's Department partnered with National Indigenous Disaster Resilience to deliver this Roundtable. Delegates heard firsthand from impacted communities which fostered dialogue between these communities and emergency services. In doing so, gaps in knowledge, resources and capability emerged for all stakeholders.

There is a shared ambition from government and emergency services to do more to support Aboriginal communities in difficult times. Yet any effort to address gaps will fail without fundamental shifts. Across the presentations and discussions, two structural shifts were identified. These are:

- **Valuing Aboriginal values,** so that planning and responses are also guided by what is important to Aboriginal communities, and
- **Embedding accountability mechanisms** within the structures of government agencies.

Without these two structural shifts, any effort to support Aboriginal communities before, during and after disasters will be unequal, ad-hoc, and risk reproducing inequities. If these structural shifts can be realised, targeted actions can follow. During the Roundtable, delegates identified four priority action areas under which efforts to support building the resilience of Aboriginal groups should be organised.

Manage hazards with Indigenous knowledges and expertise
Delegates acknowledged the importance of integrating Indigenous knowledges and expertise into emergency and land management policies and practices. Yet this must be done in the right way. Delegates called on emergency services to recognise and respect the expertise held by a community, that it is often localised and place-based, and may be based on a different set of values.

> *"No one asked us what we know about floods, they still haven't asked."*

Relationships must be established that enable trust and honest dialogue so that Aboriginal people are able to share what is necessary and appropriate, with confidence that their knowledge will be respected. One way to do this is upholding Indigenous Cultural and Intellectual Property (ICIP) in collaborations and partnerships.

Resourcing Aboriginal communities and organisations
At the Roundtable, Aboriginal communities and organisations shared stories of their strength in supporting community members during disasters, even without access to mainstream funding or resources.

> *"They planned without us and funded around us."*

There was a clear call to fund Aboriginal organisations, rather than non-Indigenous organisations, to provide services to Aboriginal people. Delegates called for flexible, long-term, non-competitive funding programs that proactively builds capability within Aboriginal organisations. The call to build the community-controlled sector is a Priority Reform of the National Agreement on Closing the Gap, however limited progress has been made in emergency management. Delegates discussed the importance of access to emergency management training and equipment, and in establishing a sustainable community of practice to share knowledge between the sectors. Delegates also called for immediate investment in the physical infrastructure that supports Aboriginal community resilience, in addition to the investments in skills and capability.

Prioritise culture, safety and wellbeing in response, relief and recovery
Aboriginal organisations shared how, guided by culture, they have stepped in to keep community members safe, and advocate for their wellbeing following a major event. Delegates spoke about loneliness when left behind in emergency responses, the psycho-social consequences of ongoing displacement from Country, experiences of racism and discrimination in evacuation centres, and inappropriate temporary housing.

> "*We're still not home. I still want to go home."*

Delegates called on the government to integrate Aboriginal healing approaches into emergency management policy and practice. In addition to the community-controlled sector, emergency services must be safe places for Aboriginal people to work, and be equipped with the knowledge and skills to lead with culture and deliver trauma-informed services. Creating a place for Aboriginal leadership, culture and healing will not only lead to better outcomes for Aboriginal communities, but all communities disrupted by disasters.

Close the governance gap in emergency management arrangements
The Roundtable provided an opportunity to raise the collective understanding of both emergency management arrangements in NSW, and of the ways in which Aboriginal communities govern and organise.

> *"True resilience cannot be built without recognition of the authority and leadership that already sits within Aboriginal communities."*

Recent efforts to engage Local Aboriginal Land Councils were welcomed, however delegates discussed the need for emergency services to be formally responsible for engaging and integrating the full diversity of Aboriginal organisations and governance structures into emergency management arrangements. Aboriginal delegates also called on emergency services to develop doctrine that respects and upholds Aboriginal community and land governance, and for inter-agency collaboration to improve engagement with Aboriginal communities. There was a clear call to make emergency services accountable for engaging with Aboriginal communities and upholding rights so that Aboriginal communities and organisations have greater involvement in emergency management arrangements and in decisions that impact them most.

Next steps
While there is significant work for emergency services in NSW to better support Aboriginal people to be safe, Aboriginal communities and organisations must also recognise their role in building resilience. Small and targeted investments to plan and be prepared before the next disaster will make a marked difference.

The priority action areas identified at the Roundtable will inform a new approach to working with Aboriginal communities before, during and after disasters. This Communique provides guidance for everyone involved in supporting disaster resilience, and fosters necessary capability for government and Aboriginal communities to work together, so that Aboriginal groups can exercise their right to self-determination.

Building culturally-led land stewardship across NSW

Land stewardship and caring for Country

First Nations peoples' ongoing connection to land and water underscores the need to integrate emissions reductions with resilience, biodiversity protection and nature repair through caring for Country and "healing Country" approaches. These recognise land, water, biodiversity, culture and community wellbeing as interdependent, and emphasise stewardship practices that support long-term prosperity rather than short-term optimisation.

First Nations communities are already delivering nature-positive outcomes across NSW and there are opportunities to further support land stewardship through biodiversity and carbon market participation, First Nations-led restoration initiatives, expanded ranger programs, and market frameworks that appropriately recognise and value First Nations knowledge, cultural practices and care for Country.

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Culturally-led land stewardship, grounded in First Nations knowledge systems and long-term responsibility to Country, offers opportunities to strengthen climate resilience, nature repair and carbon sequestration.

The return of the Gayini wetlands west of Hay to First Nations stewardship shows how restoring natural systems under First Nations leadership can deliver multiple benefits by combining traditional and modern practices to enhance productivity and landscape value (see Box 13).

Box 13: Climate action delivering multiple co-benefits at Gayini (Nimmie-Caira)

Gayini (Nimmie-Caira), is an 87,816 hectare wetland on the Lowbidgee floodplain within the southern Murray Darling Basin, west of Hay. It demonstrates how restoring natural systems and returning land management to First Nations peoples can deliver climate, cultural and economic benefits.

Under the stewardship of the Nari Nari Tribal Council, the landscape is being regenerated through the reinstatement of natural water flows, wetland restoration and the recovery of native vegetation. These efforts are strengthening resilience to drought, floods and extreme heat and enabling the return of threatened species and large waterbird breeding events. The shift to sustainable, low-impact grazing and opportunistic cropping provides emissions benefits compared to more intensive agricultural practices. New opportunities in carbon farming, biodiversity credits, ecotourism and education are also emerging, diversifying income streams and supporting regional economic development.

The return of Gayini to the Nari Nari Tribal Council has also delivered significant cultural and social benefits. Traditional Custodians are leading land and water management, protecting cultural sites and expanding ranger, training and youth programs that support community wellbeing and long-term stewardship.

The story of Gayini offers a powerful model for First Nations climate-aligned land management that supports regional economies, strengthens cultural heritage and builds resilience to a changing climate.[73]

73 Sources: GANSW, 2023; The Nature Conservancy, 2019, 2025. See also Gayini: healing Country, supported by science - UNSW.

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Cultural fire, Bundjalung Country, Northern Rivers

Cultural fire as a path to resilient landscapes and community outcomes

Appropriate application of cultural fire can help facilitate adaptation by reducing fuel loads, improving ecosystem health and strengthening community connection to Country. First Nations-led cultural fire practices also deliver broader social and cultural benefits by maintaining and passing on knowledge systems that have supported people and landscapes for thousands of years (Murramarang Country et al., 2024).

This approach is consistent with the findings of the NSW Bushfire Inquiry, which emphasised that cultural fire is not simply a hazard reduction technique, but a broader cultural practice embedded in First Nations land management. The Inquiry recommended that Government should support the greater application of First Nations land management, including cultural fire, through coordinated programs developed in partnership with First Nations communities.

During the reporting period, the Commission attended the launch of the *Identifying and Overcoming legal barriers to cultural burning* report by the Northeast NSW Forestry Hub. The report highlights that while interest in cultural fire is increasing, fragmented legal, regulatory and governance arrangements continue to restrict lawful, safe and First Nations-led cultural fire at scale. Addressing these barriers is critical to restoring cultural authority over fire management (McCormack et al., 2024).

The Commission's visit to Bundjalung Country in the Northern Rivers highlighted the importance of cultural fire to maintain ecological balance, regenerate ecosystems and strengthen intergenerational resilience. As one participant noted, "*hazards are often assets that are managed wrong*". Cultural fire may also contribute to land sector carbon outcomes. By reducing the intensity and extent of high-severity bushfires, cultural fire can help protect the permanence of carbon stores and reduce the risk of soils shifting from carbon sinks to emissions source (Murramang Country et al., 2024; AdaptNSW, 2023).

The Commission's engagement on Bundjalung Country identified both opportunities and challenges in realising climate and economic co-benefits of cultural fire, particularly within the ACCU scheme. While an ACCU method exists for savanna burning in northern Australia,[74] further research is needed to develop an appropriate approach for temperate regions found across NSW where cultural fire is practiced and providing benefits. Actioning this could address significant knowledge gaps in the scientific acceptance of the approach. There is currently limited data on the spatial extent of cultural fire and corresponding evidence on fire severity, soil carbon and vegetation outcomes across NSW. These uncertainties sit alongside broader climate risks facing land sector carbon removals, including bushfires, drought and rising temperatures.

Alongside expanding cultural fire for landscape and community resilience, the NSW Government could examine, in partnership with First Nations knowledge holders, whether, and in what ways cultural fire could further contribute to emissions reduction objectives. This includes supporting First Nations-led monitoring, evaluation and research to build the evidence base needed to assess potential climate and economic co-benefits, including consideration of future opportunities under relevant carbon market mechanisms without compromising cultural authority or Indigenous Cultural and Intellectual Property. Alongside the ACCU scheme, opportunities for consideration in the Nature Repair Market could also be explored.

The recent release of the NSW Government Cultural Fire Strategy demonstrates a step forward for the NSW Government's consideration of cultural fire alongside First Nations communities. Embedding emissions reduction investigations into the research pillar of this Strategy, and ensuring acknowledgement of resilience benefits in Strategy outputs, offers a strong path to furthering progress in this area.

Recommendation 8B: The NSW Government should support First Nations communities to investigate how the broader use of cultural fire could contribute towards emissions reduction goals through carbon removals and reduce bushfire-related emissions, in addition to improving climate resilience.

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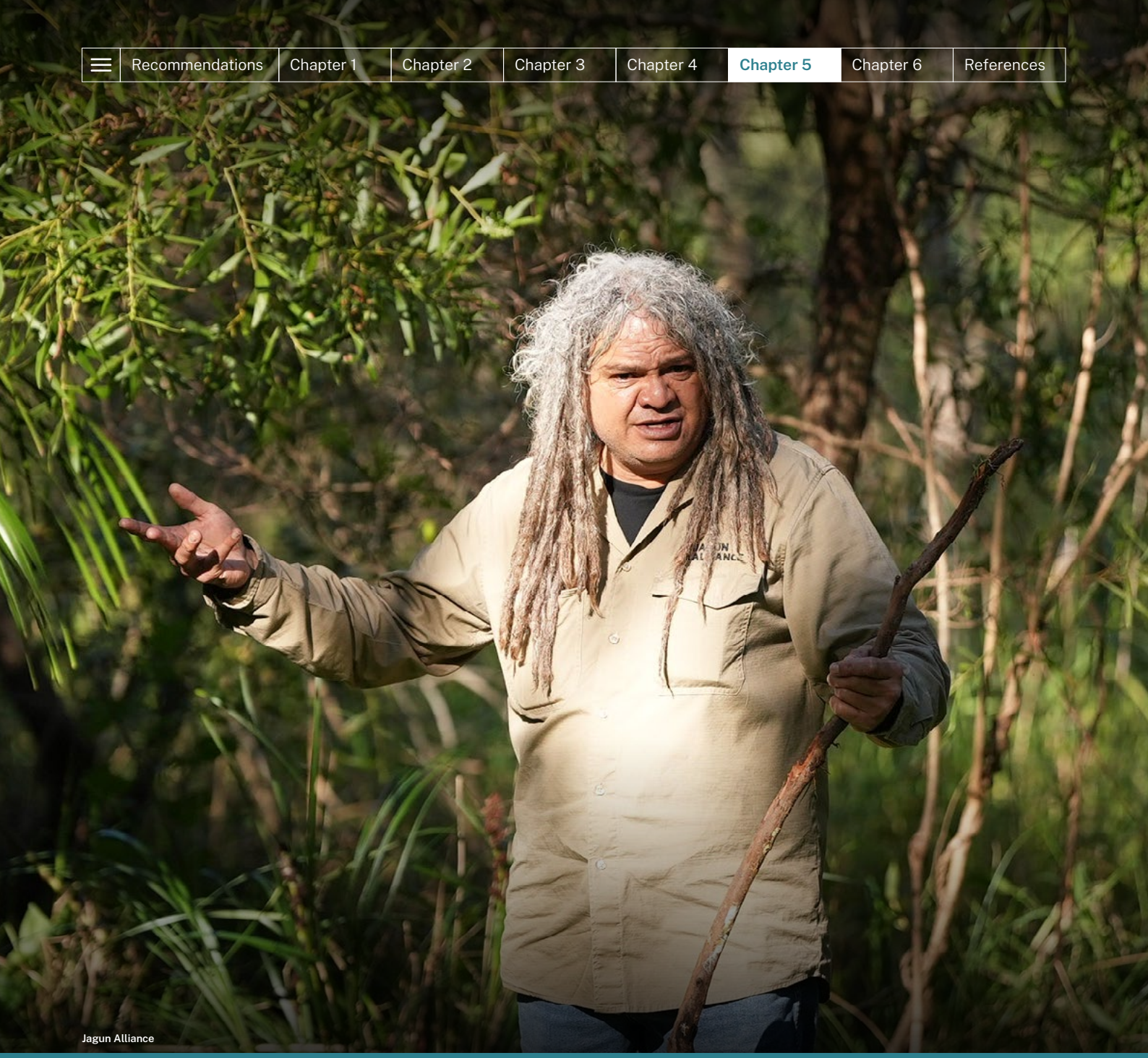
Cultural fire, Bundjalung Country, Northern Rivers

74 2026 Savanna fire management methods – DCCEEW



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Chapter 5

Importance of local knowledge and practice in climate action across NSW

5.1 Councils and communities are central to climate action

Governments at all levels are focused on helping NSW communities navigate the economic and social shifts that come with the transition to net zero and managing the physical impacts of a changing climate. In its consultations, public submissions and engagements throughout the year, the Commission has heard consistently that to be effective, climate change policies and initiatives must recognise and incorporate local knowledge and lived experience. Councils and existing community leaders and organisations are well placed and trusted to ensure that the changes necessary for the transition and to adapt to our changing climate are embedded in place and responsive to community needs.

Across NSW, many councils and communities are taking proactive steps to address climate change, with a growing number of community organisations and community-led initiatives. For example, the Climate Action Network Australia has grown from 59 to 168 organisations over the last decade. The network represents a broad cross-section of Australian society, including young people, First Nations peoples, farmers, culturally diverse and faith-based organisations, professionals, and local climate action groups (CANA, 2015, 2025). The emergence of almost 40 community-led Electric Communities Network chapters across metropolitan and regional NSW building on Rewiring Australia's mass household electrification pilot of Electrify 2515 in the Northern Illawarra region further demonstrate the spread of community support for realising the benefits from the energy transition.[75]

While regional communities broadly support the energy transition, many are simultaneously experiencing significant change. Section 2.3 noted that 62 to 69% of people in regions identified for new energy development around Australia support renewables development, but community perception of support is lower (Renew Australia For All, 2025).

This disconnect highlights a key challenge that requires action at the local level, with social dynamics around the energy transition identified as closely linked to place (Buckley & Colvin, 2026). Addressing concerns around equity with clear communication and developing tailored benefit-sharing arrangements — ensuring those affected are fairly compensated, including smaller towns and communities along transmission corridors, not just generation sites — is essential. Without this, there is a risk that misinformation and vocal opposition will grow, adding to delays.

> **"No regional city in NSW is exactly alike and each community has different challenges in dealing with climate change and meeting net zero targets."**
>
> Regional Cities New South Wales submission to the Commission's 2025 consultation

Through its consultations, public submissions and engagements the Commission heard strong consensus about the need for the energy transition to be just, equitable, well-governed, and grounded in local needs. First Nations communities are calling not just for consultation but genuine participation and economic inclusion, including ownership models or co-management opportunities. A common theme is that social licence for the transition is at risk without more transparent, consistent, and coordinated approaches across NSW Government. There is an urgent need for transition approaches grounded in regional, long-term, place-based strategies to address growing frustration with fragmented and confusing processes, related to both coal closures and energy system build-out.

75 Electrify Everything; Electrify 2515 Community Pilot.

> **“Communities on the frontline of climate impacts need better support. This includes long-term investment in community-centred disaster and resilience planning, climate-ready healthcare and mental health services, secure housing and disaster response and communication systems. These services must be co-designed with the communities they serve and reflect the lived experiences of people who have already lost homes, livelihoods and loved ones.”**
>
> Individual submission to the Commission’s 2025 consultation

Additionally, while all regions face impacts from climate change, how those impacts are felt by communities and how well they are placed to respond vary widely due to a range of factors. These include geography, population density, urbanisation, local ecosystems, socio-economic status, locally significant industries, and availability of insurance. Councils and local stakeholders play a key role in driving effective adaptation action, ensuring risk assessment, prioritisation and interventions consider the local context and are delivered effectively. Effective action requires increased investment and support at the local level, to deliver outcomes that respond to the level of risk faced.

5.2 Regional snapshot of how impacts differ across NSW

The following NSW regional snapshot (Figure 46) highlights the varying climate and transition challenges faced by regions across NSW and shows the regions the Commission visited during the reporting period. This snapshot brings together information relevant to mitigation and adaptation challenges, including population, major industries, and main emission sources and recent and future climate impacts for each region. It helps set the context for the diverse climate challenges facing NSW’s regions and the need for local approaches. As part of its ongoing work, the Commission plans to visit more regions to deepen its understanding of regional perspectives and climate action issues and opportunities.

The snapshot shows that the scale and sources of emissions vary across NSW’s regions. The Hunter region stands out as a region with particularly high emissions, due to coal-fired power stations and coal mining. Meanwhile, emissions for the Far West and Riverina Murray regions are mainly from agriculture.

While all regions are expected to experience the impacts of increased extreme heat, regions face differing climate risks from hazards such as severe fire weather, drought, and extreme rainfall events and resultant flooding, and sea-level rise and related coastal inundation. The industries currently contributing most to regional economies, such as agriculture, construction, and mining, are more susceptible to physical risks from climate change compared to the economic activities that are the major focus of the metropolitan areas, such as business, financial and professional services. Some regions have ecosystems that are particularly sensitive to temperature change, such as the alpine ecosystems in the Southeast and Tablelands.

Figure 46:

NSW Regional Snapshot

Central Coast

Population: 354,803

Climate impacts: **5.0** more hot days per year by 2050; increased severe fire weather affecting isolated coastal towns and bushland; increased extreme heat affecting urban areas; sea level rise and coastal inundation affecting properties

Natural disasters (during reporting period): Storm (**3**), bushfire (**1**)

Emissions and top sources: **8.7 $MtCO_2$-e** – electricity generation (**73%**), transport (**13%**), fugitives from fuels (**9%**)

Key economic sectors: Healthcare and social assistance (**16%**), construction (**10%**), manufacturing (**9%**), retail trade (**8%**), professional, scientific and technical services (**7%**)

Hunter

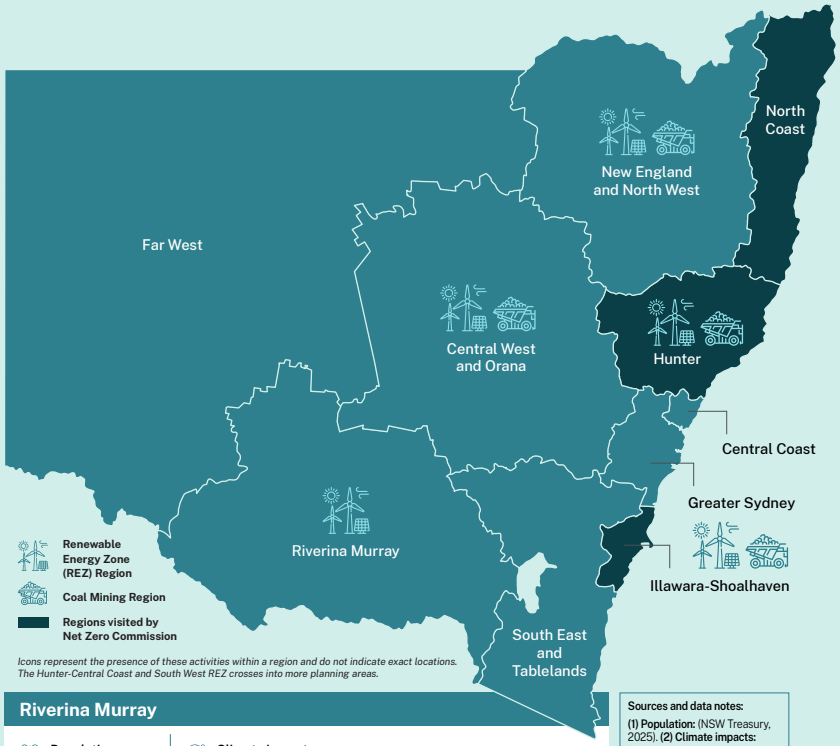
Population: 810,491

Climate impacts: **7.8** more hot days per year by 2050; increased severe fire weather affecting bushland, increased extreme heat affecting agriculture; sea level rise and coastal inundation affecting properties, heavy rail, and power lines

Natural disasters (during reporting period): Storm (**5**), Cyclone (**1**), bushfire (**6**)

Emissions and top sources: **44.6 $MtCO_2$-e** – electricity generation (**67%**), fugitives from fuels (**10%**), stationary energy (excluding electricity generation) (**8%**)

Key economic sectors: Mining (**31%**), health care and social assistance (**10%**), construction (**8%**), manufacturing (**6%**), retail trade (**5%**)



Central West and Orana

Population: 295,547

Climate impacts: **19.4** more hot days per year by 2050; increased extreme heat affecting regional towns

Natural disasters (during reporting period): Bushfire (**8**), storm (**3**)

Emissions and top sources: **13.1 $MtCO_2$-e** - electricity generation (**39%**), agriculture (**34%**), transport (**12%**)

Key economic sectors: Mining (**28%**), Agriculture, forestry and fishing (**13%**), health care and social assistance (**9%**), construction (**6%**), education and training (**5%**)

Illawarra-Shoalhaven

Population: 437,436

Climate impacts: **2.9** more hot days per year by 2050; increased severe fire weather affecting isolated coastal towns and National Parks; increased extreme heat affecting agriculture

Natural disasters (during reporting period): Storm (**1**)

Emissions and top sources: **11.0 $MtCO_2$-e** – industrial process and product use (**57%**), fugitive from fuels (**13%**), stationary energy (excluding electricity generation) (**11%**)

Key economic sectors: Health care and social assistance (**13%**), mining (**11%**), construction (**11%**), education and training (**8%**), public administration and safety (**7%**)

Far West

Population: 43,584

Climate impacts: **24.9** more hot days per year by 2050; increased extreme heat affecting National Parks

Natural disasters (during reporting period): Flood (**1**), Cyclone (**1**) (riverine flooding from cyclone-related Queensland floodwaters), bushfire (**1**), storm (**3**)

Emissions and top sources: **2.3 $MtCO_2$-e** – agriculture (**67%**), transport (**17%**), stationary energy (**7%**)

Key economic sectors: Agriculture, forestry and fishing (**36%**), mining (**13%**), health care and social assistance (**7.0%**), construction (**6%**), education and training (**5%**)

North Coast

Population: 556,913

Climate impacts: **5.7** more hot days per year by 2050; increased extreme heat affecting regional towns and agriculture; increased severe fire weather affecting isolated coastal towns; sea level rise and coastal inundation affecting properties, roads, and power lines

Natural disasters (during reporting period): Cyclone (**1**), storm (**6**), bushfire (**2**)

Emissions and top sources: **4.2 $MtCO_2$-e** – transport (**61%**), agriculture (**23%**), industrial process and product use (**6%**)

Key economic sectors: Health care and social assistance (**16%**), construction (**10%**), retail trade (**9%**), education and training (**8%**), accommodation and food services (**6%**)

Riverina Murray

Population: 288,716

Climate impacts: **16.1** more hot days per year by 2050; less cold nights affecting alpine ecosystems; increased extreme heat affecting viticulture

Natural disasters (during reporting period): Storm (**4**)

Emissions and top sources: **8.6 $MtCO_2$-e** – agriculture (**59%**), transport (**21%**), stationary energy (excluding electricity generation) (**12%**)

Key economic sectors: Agriculture, forestry and fishing (**25%**), health care and social assistance (**10%**), manufacturing (**9%**), construction (**8%**), public administration and safety (**7%**)

Greater Sydney

Population: 5,557,233

Climate impacts: **7.0** more hot days per year by 2050; increased extreme heat affecting urban centres; increased severe fire weather affecting bushland and air quality; Sea level rise and coastal inundation affecting properties

Natural disasters (during reporting period): Storm (**5**), bushfire (**1**)

Emissions and top sources: **23.5 $MtCO_2$-e** – transport (**49%**), fugitives from fuels (**15%**), stationary energy (excluding electricity generation) (**14%**)

Key economic sectors: Financial and insurance services (**15%**), professional, scientific and technical services (**13%**), construction (**8%**), health care and social assistance (**7%**), manufacturing (**7%**)

New England and North West

Population: 190,346

Climate impacts: **16.1** more hot days per year by 2050; increased severe fire weather affecting National Parks; increased extreme heat affecting cotton production

Natural disasters (during reporting period): Cyclone (**1**), bushfire (**5**), storm (**4**)

Emissions and top sources: **7.4 $MtCO_2$-e** – agriculture (**57%**), stationary energy (excluding electricity generation) (**13%**), transport (**13%**)

Key economic sectors: Mining (**23%**), agriculture, forestry and fishing (**20%**), health care and social assistance (**8%**), education and training (**7%**), construction (**6%**)

South East and Tablelands

Population: 299,368

Climate impacts: **5.0** more hot days per year by 2050; less cold nights affecting alpine ecosystems; increased severe fire weather affecting isolated coastal towns; increased extreme heat affecting agriculture

Natural disasters (during reporting period): Bushfire (**1**), storm (**7**)

Emissions and top sources: **6.1 $MtCO_2$-e** – agriculture (**40%**), transport (**30%**), industrial process and product use (**15%**)

Key economic sectors: Construction (**13%**), health care and social assistance (**10%**), retail trade (**8%**), agriculture, forestry and fishing (**8%**), public administration and safety (**8%**)

Sources and data notes:
(1) Population: (NSW Treasury, 2025). **(2) Climate impacts:** (AdaptNSW, 2025; Hanslow et al., 2018). Data on the number of hot days under 'Climate impacts' is based on NARCliM2.0 projections for the SSP2-4.5 (medium-emissions) scenario relative to a baseline period of 1990–2009. It is important to note that the future climate impacts represent an average of projected outcomes only — they do not represent how actual climate events may unfold, which could be more severe. **(3) Natural disasters:** Commission analysis of (National Emergency Management Agency, 2026b; NSW Reconstruction Authority, 2025a). **(4) Emissions:** Emissions and top sources are for 2022–23 in IPCC sectors from the NSW Net Zero Emissions Dashboard (NSW DCCEEW, n.d.). Due to variability in land sector emissions, the Land Use, Land-Use Change, and Forestry sector has been excluded from all emissions calculations. **(5) Key economic sectors:** Commission engagement with NSW Cabinet Office. The top 5 economic sectors were identified by economic output, i.e. their contribution to the regional economy.
Greater Sydney: For this region, data is approximate due to slight variations in how the region is defined in the data sources used.

5.3 Regions visited by the Commission

Under the Climate Change Act's guiding principles, action to address climate change should take into account issues including:

- First Nations knowledge and perspectives
- the knowledge of rural, regional and remote communities
- the need to support local communities, affected by the action, including by considering the impact on local employment and industries, diversifying local economies, encouraging local procurement, optimising job creation and employment transition opportunities and considering impact on amenity
- equity and social justice impacts on socially disadvantaged groups and economically vulnerable regions.

In 2025, the Commission visited 3 regions, the Illawarra, the Hunter and Bundjalung Country – Northern Rivers, to hear local perspectives (see page 145–147 for details).[76] The Commission is grateful to all community members, organisations and industry representatives who shared their time, insights and experiences. These contributions and engagements are critical to shaping the Commission's understanding and strengthening the quality and relevance of its advice.

These regional visits underscored the importance of local contextual perspectives and the realities of addressing climate change in regions affected by state-wide or sectoral policies. In the regions that the Commission visited, addressing climate change and its impacts was integral to key issues important to the region, such as diversifying local economies and services to secure the economic future, local energy security, transport, water and land use challenges, caring for Country and passing on traditional knowledge. Policies to address climate change need to be responsive to these priorities to be effective.

The visits also highlighted opportunities for the NSW Government to support and empower local climate leaders. Communities, local councils, and industry are already working to address climate change. However, these initiatives are constrained by lack of government support, conflicting incentives, and fragmented decision-making, amongst other factors. Reducing these constraints can support local government, community, and industry in our collective response to climate change.

Brinae Smith

Stakeholder engagement in Dubbo

76 Note: The Commission visited Dubbo in February 2026 to engage with stakeholders as it developed the Heat Stress Spotlight Report. This visit will be documented as a site visit in the Commission's next annual progress report.

Bundjalung Country, Northern Rivers

Stakeholders: First Nations organisations, Jagun Alliance, the NSW Reconstruction Authority, Business NSW and local stakeholders

What we heard and experienced:
The visit included cultural walks, on Country yarns, observation of a cultural burn, site visits to flood-impacted areas, and roundtable discussions.

Key themes:

- First Nations knowledge and leadership can play a stronger role in caring for Country and informing climate policy.
- A "prosperous community" means safe environments, meaningful livelihoods and strong cultural and social foundations.
- Cultural fire regenerates and maintains balance within ecosystems, supporting the continued practice of culture across generations, income flows, and community wellbeing.
- First Nations young people play an important role in caring for Country.
- Funded programs, such as Indigenous ranger programs, should be responsive to the aspirations of local traditional knowledge holders and provide stable, longer-term investment to support sustained healing of Country.

Further detail on the Northern Rivers visit is in Section 4.2.

Cultural fire, Bundjalung Country, Northern Rivers
Jagun Alliance

Illawarra

Stakeholders: Mining and heavy industry, community groups and councils

What we heard and experienced:
The Commission convened 3 roundtables focused on i) mining and heavy industry decarbonisation, ii) residential decarbonisation, and iii) climate change mitigation and adaptation with local councils.

Key themes:

- The industries in the Illawarra are deeply interconnected. Coal mining, steelmaking, cement production and port infrastructure form a tightly linked network. Government initiatives should be sensitive to this.
- Connected, place-based approaches that draw on local networks have been and will continue to be critical in driving decarbonisation efforts in the Illawarra, requiring collaboration across sectors and with government at all levels.
- The work of Electrify 2515, a community-led initiative shows how locally driven initiatives can build community capability and contribute to broader regional decarbonisation efforts.
- Despite the resilience of critical infrastructure such as rail, roads and energy being a shared concern, climate adaptation in the region is largely reactive, triggered by extreme events such as floods, coastal inundation, and bushfires.

Hunter

Stakeholders: Hunter business, local government and the coal mining industry

What we heard and experienced:
The Commission met with industry, local government and visited coal mines.

Key themes:

- All levels of governments and the private sector need to collaborate to meet the triple challenge of cutting emissions, creating jobs and transforming existing industries.
- Approaches tailored to the local economies and transition pathways are needed to provide clear direction and create an enabling policy environment that attracts investment.
- Stakeholders called for greater regulatory certainty, reduced duplication between state and Commonwealth requirements, and outcomes-based approaches that allow site-specific flexibility.

The Commission met with a Business Hunter Roundtable on 27 August 2025 with local businesses, organisations and council representatives. The discussion focused on the opportunities, barriers and costs of the transition to a low-carbon economy across the region.

Insights from the Hunter visits informed the Commission's Coal Mining Emissions Spotlight Report.

5.4 Supporting councils to lead local climate action

Strengthen NSW Government support for council-led emissions reduction

There is significant value in recognising the knowledge and expertise of councils and local communities in NSW to address climate change. Councils operate closest to communities and have responsibilities for land-use planning, community engagement, infrastructure management and the administration of state legislation. These functions give councils strong community connections and deep local knowledge. Stakeholders consistently told the Commission that this local understanding enables councils to design and deliver services and programs that materially influence emissions reductions and local and regional adaptation.

In its 2025 consultations, the Commission heard from a range of councils, Joint Organisations (JOs) and coalitions of councils. Their submissions and engagements with them gave important insights into issues around:

Built environment

Focusing on electrification and energy efficiency in new developments.

Adaptation

Planning for extreme heat, flooding, and coastal inundation.

Resources

Managing the transition for communities reliant on the coal industry.

> **"It was clear from consultation with our members that just like State and Federal Governments, local government was struggling to achieve its objectives. To support the State in its net zero by 2050 ambitions more support to Local Government was required."**
>
> Regional Cities New South Wales submission to the Commission's 2025 consultation

Valuing the local expertise, influence, and leadership of councils, and partnering with them to deliver emissions reduction initiatives, could achieve more efficient and effective outcomes. This would complement the sectoral focus of the NSW Government's efforts to reduce emissions.

A study undertaken in partnership with DCCEEW examined the extent to which councils could influence emissions across NSW (Table 2).[77] While 'influencing' emissions is not the same as reducing emissions, the analysis highlights the valuable role councils could play in NSW's transition to net zero with the right capability and capacity. The findings indicate with sustained and coordinated support, councils could potentially influence up to 70% of the state's emissions, compared to an estimated 28% today (Table 2). This includes supporting community emissions reductions, building social licence for the transition and acting as a valuable interface between the NSW Government policy and local realities.[78]

77 Shaw et al. in partnership with NSW DCCEEW, 'Council's influence on community emissions: Quantification for NSW', Australia (June 2025). This report was shared with the Commission but has not yet been published. The Commission cites the analysis because it illustrates the scale of the opportunity if council capability and coordination is resourced effectively, rather than as a precise measurement of emissions reduction potential.

78 In the study, 'influence' was calculated by assigning scores for council reach for (1) the proportion of the local population the council could reasonably influence and (2) the council's role in the emissions reduction pathway (facilitator, supporter, advocate, critical partner, control manager). These two scores were then multiplied to produce an 'influence factor' for each council: Shaw et al. report, Appendix C.

Table 2: Current and potential influence on community emissions by classification[79]

Council Classification	Current Influence	Potential Influence
Overall	28%	69%
Rural	3%	31%
Large Rural	8%	47%
Regional Town/City	19%	65%
Metropolitan Fringe	26%	78%
Metropolitan	55%	88%

Councils have a range of levers to influence emissions. They can provide leadership in reducing their own operational emissions, purchasing renewable energy, EV fleet transitions, upgrading local infrastructure such as EV charging and landfill gas capture (see Sections 2.4 and 2.10), waste minimisation and circular economy measures, and strengthened planning controls to encourage climate resilient development (100% Renewables, 2021; Central NSW Joint Organisation, 2026). Beyond these direct impacts, councils influence broader community emissions in their area through programs to reduce emissions from residents or businesses, by advocating for stronger climate action from the NSW and Commonwealth Governments, and by collaborating with other councils to achieve emissions reductions at scale. Councils also have strong community engagement and education roles. These levers are particularly effective to help reduce emissions from waste and promote sustainable transport, energy efficiency and household use of rooftop solar and batteries (100% Renewables, 2021).

However, a significant funding and capability gap remains. Rural and inland councils will require tailored support to achieve comparable outcomes to metro and coastal councils (NSW Auditor-General, 2026). Through submissions and regional engagements, the Commission heard that while there is some funding support for emissions reduction initiatives, it is often fragmented and delivered through short funding windows, making it difficult for councils to plan and implement programs effectively.

There are good examples of how well-supported council-led programs can deliver results. The Hunter Joint Organisation's Solar Neighbourhoods program illustrates how councils can help remove local barriers to clean-energy uptake and support greater community participation. By partnering with council-vetted solar and battery providers and incorporating available rebates, Newcastle, Lake Macquarie and Maitland Councils enabled residents to access trusted solar and battery packages at lower cost, resulting in 74,664 rooftop solar installations across the region (Solar Neighbourhoods, 2026).

The *Charging the East* program, delivered by Waverley, Woollahra and Randwick councils, supported by funding from NSW Government, increased the number of EV chargers from 100 to 350 across the area. Funding for a dedicated coordinator enabled site selection, community engagement and partnerships with EV charging providers and network operators.[80] This approach offers opportunities to help and support councils elsewhere in NSW accelerate their roll-out of EV charging facilities.

The NSW Government-funded Joint Organisation Net Zero Acceleration (JONZA) program is helping regional councils overcome capability and resourcing barriers by providing dedicated technical expertise, data analysis and hands-on assistance applying for state and Commonwealth grants.

79 Shaw et al. report, p. 15.
80 Randwick City Council, Randwick Amping up Electric Vehicle Use with 100 New Public Charging Spaces; Commission engagement with NSW DCCEEW.

JONZA has succeeded in maximising the impact of limited state funding, supporting councils to have Net Zero Managers embedded in council structures, and developing tools and guidance. These actions resulted in measurable cost and energy demand reductions, stronger investment decisions using better data, and councils securing additional external funding to deliver projects that cut both emissions and operating costs (NSW DCCEEW, 2025b). JONZA does not support councils with direct funding for implementation of mitigation projects, climate risk assessments or planning and delivery of adaptation projects.

These examples highlight the opportunity for stronger NSW Government coordination and investment to scale local emissions reduction efforts.

Recommendation 8C: The NSW Government should ensure net zero and sector plans address the diverse specific needs of regions across the state, supporting and resourcing councils to drive the local change necessary for the transition and in meeting the challenges of adapting to climate change.

Councils are the front line for dealing with climate impacts and resilience

Adaptation is inherently place-specific and directly linked to public safety, service continuity and community wellbeing. Through the 2025 consultation, the Commission heard that a coordinated, whole-of-government approach is needed that invests in community-based adaptation, empowers local stakeholders to design local solutions, and strengthens council capacity through legislation, funding and capability building. While several JOs have undertaken regional adaptation projects and secured Disaster Ready Fund support to develop DAPs for their region (National Emergency Management Agency, 2026a), participation is uneven.

Councils are facing growing climate impacts as well as resource constraints, especially in regional areas (Standing Committee on State Development, 2024). In the Commission's 2025 consultation, the Hunter JO stated that "resourcing is the critical barrier to achieving the adaptation objective." Regional Organisations of Councils (ROCs) and JOs provide important mechanisms for collaboration and resource-sharing to identify, prioritise and implement adaptation and mitigation action at a regional scale.[81] However, their reach is limited as participation by councils in ROCs and JOs is voluntary (despite JOs being statutory bodies).

Overall, there has been progress since the 2018 Local Government Climate Change Action Survey. Most councils now include adaptation and mitigation in their community strategic plans, delivery programs, operational plans and local strategic planning statements. However, integration of adaptation into statutory planning instruments such as Local Environment Plans and Development Control Plans remains slow. Strengthening and coordinating the integration of adaptation and mitigation into relevant planning instruments will be important to ensure all communities benefit from effective, place-specific adaptation and mitigation (Local Government NSW, 2025; Office of Local Government, 2025).

81 E.g. Western Sydney Regional Organisation of Councils | Heat Resilience Program and Hunter Joint Organisation | Hunter Net Zero.

Box 14: Councils face growing financial pressures

The 2024 Standing Committee on State Development Inquiry into the Ability of Councils to fund Infrastructure and Services found that "local councils face significant revenue raising and cost pressures to adequately meet the needs of their communities". Councils primarily rely on grants from the NSW and Commonwealth Governments and property rates and charges to deliver their functions. Councils face a persistent funding gap (Standing Committee on State Development, 2024). Their ability to raise revenue does not keep pace with their spending responsibilities, which is referred to as a vertical fiscal imbalance and is a key issue limiting adaptation action by councils (Rickards et al. 2025). Cost shifting from state and Commonwealth governments added an estimated $1.5 billion in unfunded obligations in 2023–24 (Local Government NSW, 2025).

NSW's 128 councils vary widely in their size, population and financial capacity.

For example:

Central Darling Shire Council
in far western NSW

- **Area:** More than **53,000 sq km**
- **Population:** Less than **2,000 residents**
- **Revenue:** Approximately **$32 million**

City of Blacktown
in Sydney's west

- **Area:** Approximately **239 sq km**
- **Population:** Approximately **440,000 residents**
- **Revenue:** Approximately **$760 million**

Source: Office of Local Government, 2025.

Due to the different financial capacities and climate challenges outlined in Section 5.4, metropolitan and regional councils vary significantly in their ability to implement effective adaptation and mitigation measures.

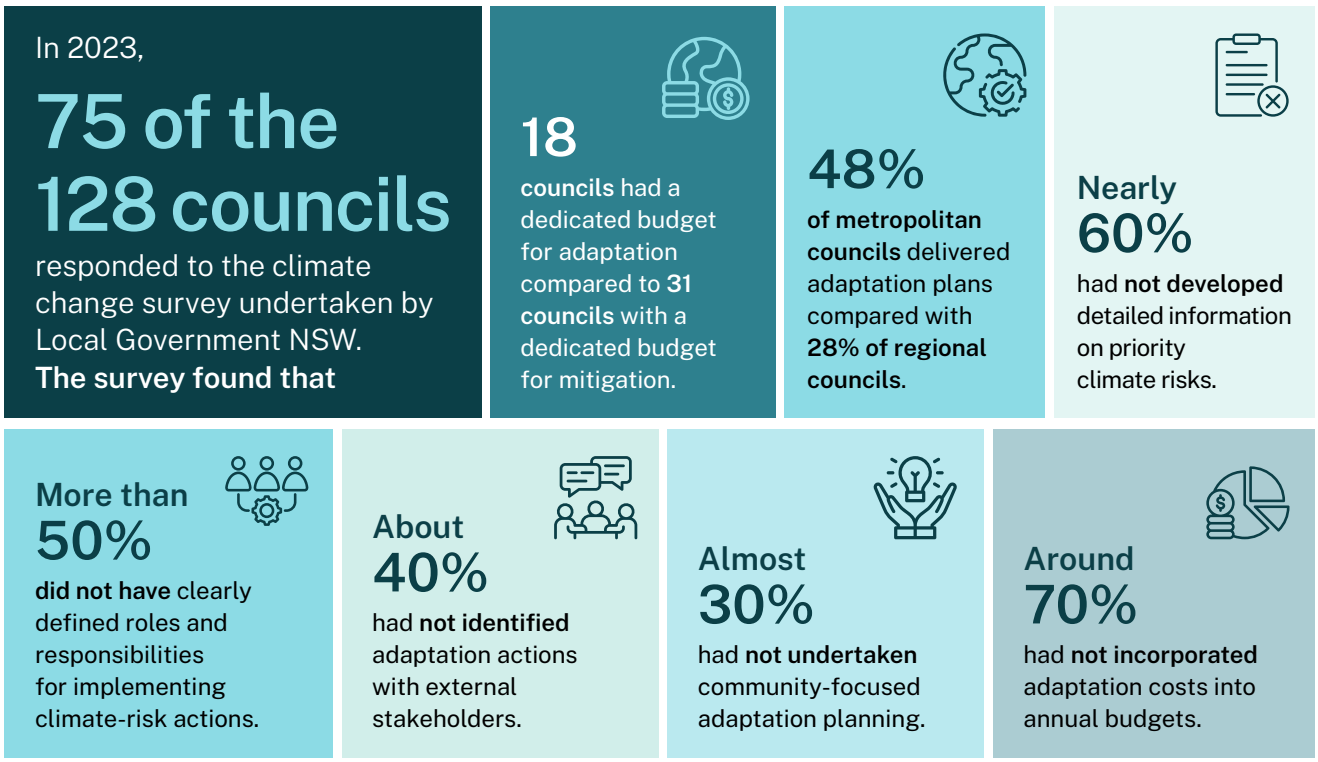
Financial pressures are limiting councils' adaptive capacity

The number of councils reporting that climate change was having a "great deal" or "fair amount" of impact on their operations and communities has increased more than fivefold from 14% in 2015 to 77% in 2023 (Clancy, 2024).[82] The Independent Review of Commonwealth Disaster Funding found that "Australia is increasingly reliant on a local level of government, and community, which has the least capacity and often limited capability" to prepare and respond to disasters. The review noted that emergency management is a significant financial burden on councils, which they are not well resourced for (Colvin et al., 2024).

Councils are unable to consistently prioritise adaptation, despite managing over $198 billion in assets, and carry major responsibilities in reducing community exposure and vulnerability to climate hazards including flooding, sea-level rise and bushfires (Standing Committee on State Development, 2024). The Commission found in its Heat Stress Spotlight Report that councils are well placed to plan for heat stress but face financial and institutional barriers. For example, community groups in Dubbo and Greater Sydney have been unable to secure funding to implement local heat responses (Net Zero Commission, 2026b).

82 Based on survey results showing that 77% of the 75 councils responding to the 2023 Local Government Climate Change Action Survey reported climate change was having 'a great deal' or 'fair amount' of impact on their operations and communities, up from 35% in 2018 and 14% in 2015 (Clancy, 2024).

Box 15: 2023 Local Government Climate Change Action Survey



The 2023 Local Government Climate Change Action Survey (2023 survey) results show that although councils are beginning to integrate climate risk management and adaptation into their operations, significant resourcing gaps remain. The 2023 survey also noted that "mitigation is rated as a high priority by more responding councils overall and therefore has higher levels of resourcing" (Clancy, 2024). Alongside mitigation, adaptation is critically important for councils given their ownership and management of long-term assets and their duty of care to communities. Councils are on the front line of responding to climate impacts as they emerge.

Currently, councils have limited avenues for funding of broad, holistic adaptation initiatives, leaving overarching resilience planning to the discretion of each council. Models that support councils to undertake broad, holistic adaptation action in other jurisdictions exist. For example, the US state of Massachusetts' Municipal Vulnerability Preparedness Program awards grants to councils, indigenous tribes and regional planning agencies for specific adaptation projects. It awarded approximately $52.4 million (USD) in the 2024–25 financial year to 71 adaptation projects, 62 of which were led by councils (Commonwealth of Massachusetts, 2024).

Establishing long-term financing mechanisms aligned with best-practice adaptation principles as described by Barnett et al. (2026), alongside better coordination of existing funding, would enable councils to plan and deliver proactive adaptation action. Greater financial support of local councils should be considered as part of a broader long-term financing strategy for adaptation by the NSW Government. Without this, communities, particularly in regional areas, risk remaining insufficiently resourced. This leads to ad-hoc or reactive decision-making and a cycle of recovery rather than proactively building resilience, as discussed in Section 3.4.

Councils will require increasing support to undertake effective adaptation

NSW needs stronger, better funded and more cohesive adaptation governance. There are institutional barriers to effective adaptation action by councils, including inconsistent approaches across levels of government, uncertainty about councils' responsibilities and trade-offs between delivering core services and investing in adaptation or disaster-risk reduction (Clancy, 2024; Standing Committee on State Development, 2024). Councils carry significant responsibilities for adaptation but do not have proportionate resourcing, producing systemic under-resourcing of adaptation at the local level.

> **"What has been less visual has been the languishing long-term impact on all communities as they respond and recover to disaster – responses take too long and leave communities broken as pieces are painstakingly slowly put back together."**
>
> Regional Cities New South Wales submission to the Commission's 2025 consultation

In addition, there is unequal adaptation resourcing between regional and metropolitan councils. ROCs and JOs help pool resources and coordinate regional action but participation is uneven. Grant-based funding models risk leaving councils behind that are not part of this coordination or lack the capacity to apply. Greater NSW Government support for local and regional-scale adaptation initiatives is needed to prevent continued widening of these inequities between metropolitan and regional councils.

While some hazard-specific programs such as coastal management and flood risk management have existed for many years, there is no overarching, state-wide framework to enable and guide councils to plan and implement adaptation actions. An overarching framework could address cross-cutting risks that may fall outside the scope of hazard-specific programs by providing a consistent method for assessing climate risk, a structured process for councils to plan adaptive action and resourcing for implementation.

For example, the NSW Coastal Management Framework embeds coastal management action in legislation and planning (NSW DCCEEW, 2026a). It provides a consistent framework for councils to give effect to the objects of the *Coastal Management Act 2016* (NSW) through their management of the coastal zone, including the development of Coastal Management Programs as long-term, place-specific strategies and the delivery of actions through them. Funding support for developing and implementing Coastal Management Programs is available to councils through the Coastal and Estuary Grants Program under the Coastal Management Framework.

In contrast, there is no similar framework for adaptation action that holistically considers and responds to climate risks that may stem from the interaction of multiple hazards with community vulnerabilities. Numerous councils have undertaken adaptation plans despite no requirement for them to do so by the NSW Government. The resulting plans vary widely in scope (e.g. focus exclusively on council operations or the wider community), time horizon for planning and actions, the maturity of adaptation actions and resourcing. There is also inadequate consideration of councils in state-wide policies such as the Adaptation Action Plan.

The Commission heard through its 2025 consultation and regional visits that many councils are seeking clarification on their roles and responsibilities for adaptation from the NSW Government, a gap that limits consistent action. Some councils also sought a legislated role to prepare and implement local adaptation plans. While the NSW Government provides tools such as the Local Government Climate Action User Guide, localised climate change projections and the local government climate readiness tool, a clear state-wide framework would better support councils to deliver consistent, high quality adaptation planning (AdaptNSW, 2024, 2026b; NSW DCCEEW, 2024a). Any framework would need


Goulburn Town Hall building

to be accompanied by dedicated resourcing in order to avoid placing additional unfunded responsibilities on councils that are already financially constrained.

DAPs, led by the NSW Reconstruction Authority, are acknowledged as progressing adaptation planning through the regional, multi-hazard approach to assessing risk and strong community engagement. The Commission understands that 2 DAPs are formally underway (Hawkesbury Nepean and Northern Rivers) and 3 others are planned and supported by funding. There have been calls for more DAPs, but it is unclear how and when other parts of the state may be supported to develop a DAP and if there are criteria to support prioritisation of regions.

As the development and implementation of DAPs are in their early stages, it is not yet clear whether they are the best mechanism to enable broader adaptation action at a local and regional level in collaboration with councils, JOs and other organisations.

Consideration of long-term adaptation action is a potential gap in the DAP approach. DAPs are 5-year plans that set out strategies, actions and projects over a 20-year outlook. Best practice adaptation distinguishes between actions that need to be taken now and those than can be implemented later, sequencing them over time and adjusting responses as new information and circumstances emerge (Barnett et al., 2026). Given new developments often last more than 50 years, adaptation planning that considers the potential risks under multiple scenarios through to the end of the century is needed for building long-term resilience.

Additionally, some non-traditional hazards, such as air pollution, water contamination and water insecurity are included in the *Reconstruction Authority Act 2022* (NSW) definition of a disaster and could be considered in DAPs. It is not clear how DAPs would deal with chronic and systemic climate risks including heat stress, food and water insecurity, loss of cultural values, ecosystem decline, biosecurity risks and broader socioeconomic impacts that are not typically captured through disaster-risk reduction.

While state governments have primary responsibility for supporting councils, the Commonwealth Government has a key responsibility for funding disaster recovery, including disaster recovery actions undertaken by councils. The Independent Review of Commonwealth Disaster Funding (Colvin Review) was released in October 2025, finding that without a shift towards proactive risk reduction, disaster costs across Australia will continue to escalate as funding is generally focused on recovery at the expense of preparedness and resilience. The Colvin Review highlighted the increasing emergency management pressure on councils, noting that local government capability and capacity to invest in preparedness, risk reduction and resilience is constrained (Colvin et al., 2024).

Many NSW councils support the Colvin Review recommendations (Joint Select Committee on the NSW Reconstruction Authority, 2026). The Commonwealth Government is considering its response the Colvin Review. Pending these responses, the NSW Government could consider whether DAPs are the best way to resource and coordinate holistic locally-led adaptation, or if a centralised framework may be appropriate to guide and support local-scale adaptation action in addition to disaster risk reduction through DAPs.

Recommendation 8D: The NSW Government should provide greater support to local and regional-scale adaptation initiatives, such as capability and coordination support, which considers the differing challenges and contexts of councils.

Recommendation 8E: The NSW Government should consider whether broader climate change adaptation can be adequately addressed at the local and regional scale through the existing framework set out in *Reconstruction Authority Act 2022* (NSW) for disaster adaptation planning.

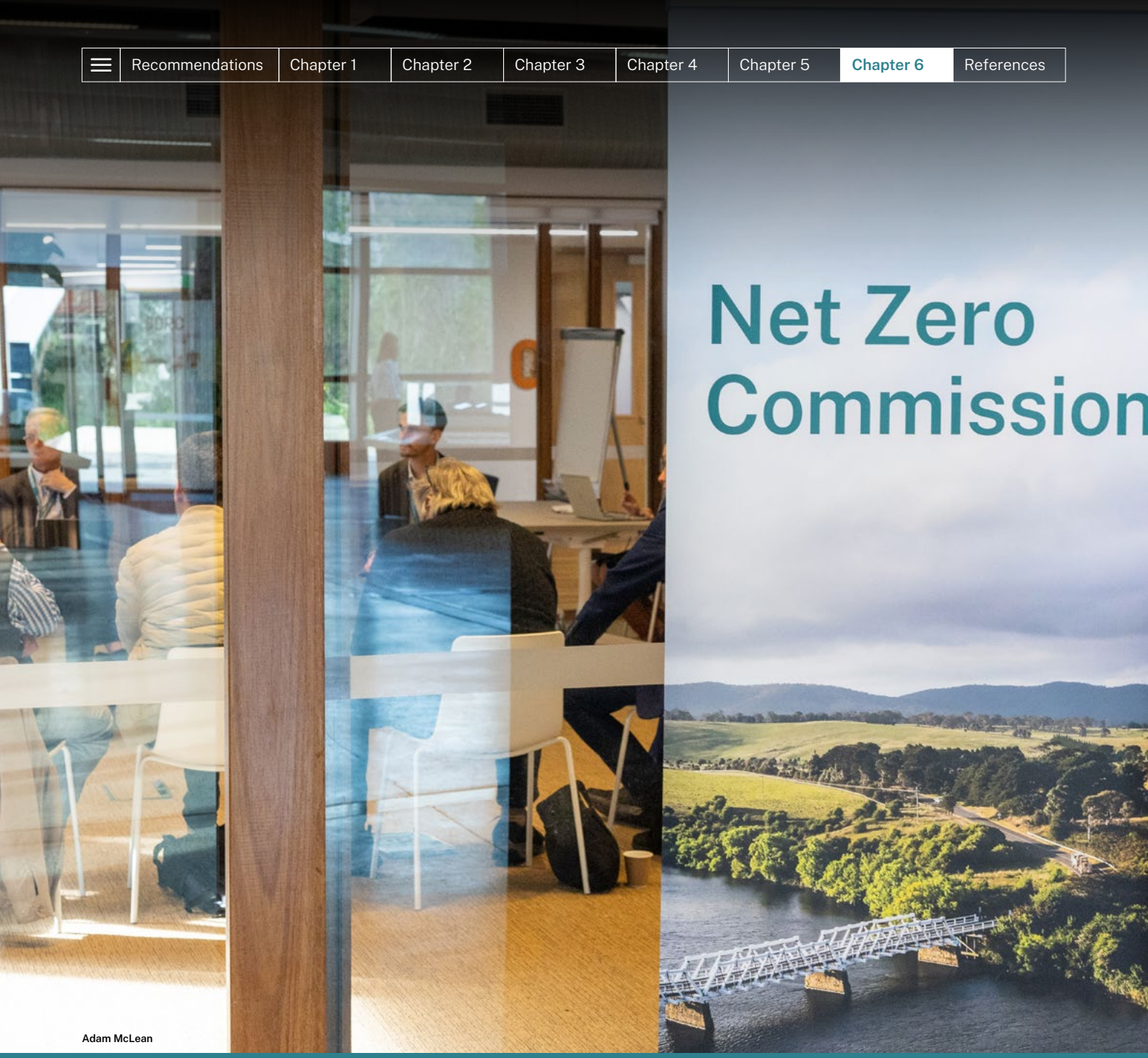
Community-led initiatives also have a role in disaster response

> **Trust and listen to people in communities already affected and most impacted. Follow our leadership and codesign solutions with us. Value our place-based insights, expertise and leadership. Co-design means resources and seats at the table, not one off consultation."**
>
> Bushfire Survivors for Climate Action submission to the Commission's 2025 consultation

University of Sydney research highlights that "community-led disaster response, recovery and adaptation plays a specialised and indispensable role through harnessing local knowledges and social connections" (Webster et al., 2024). It suggests that key strengths of community-led initiatives include their ability to provide swift, tailored, and agile interventions, their sustained, long term commitment, their ability to fill gaps in services provided by the formal emergency management sector, and their ability to provide safe and accessible spaces for vulnerable people (Webster et al., 2024).

Strong examples of community-led resilience can be found in the Northern Rivers. The Northern Rivers community came together to form Resilient Lismore, Northern Rivers Community Resilience Alliance (Alliance) and the Northern Rivers Living Lab (Living Lab Northern Rivers, 2026; NRCRA, 2025; Resilient Lismore, 2026). The Alliance and Resilient Lismore both support regional, grassroots collaboration to develop localised approaches to risk reduction, preparedness, and recovery.

Lismore-based Southern Cross University and the University of Technology Sydney partnered with the Northern Rivers Reconstruction Authority to establish the Northern Rivers Living Lab ('Living Lab'), seeking to bring technical expertise together with local knowledge and lived experience to inform future climate-resilient development (AdaptNSW, 2026a). The Living Lab supports recovery and resilience through research, expertise, lived experience, and community engagement. As part of this broader program of work, the Living Lab delivered a series of regional workshops between September to October 2025 to ensure the local knowledge of community members informs the development of the Northern Rivers Disaster Adaptation Plan (Living Lab Northern Rivers, 2025; NSW Reconstruction Authority, 2025b).



Adam McLean

Chapter 6

Role of the Net Zero Commission

6.1 Legislated functions of the Commission

The Commission was established under the Climate Change Act to provide expert advice and recommendations on NSW's approach to addressing climate change.[83]

The Commission has 5 key legislated functions:

1. to monitor, review and provide advice and recommendations to the Minister on progress towards the primary and interim emissions targets in NSW
2. to monitor, review and provide advice and recommendations to the Minister on progress in relation to the adaptation objective in NSW
3. to monitor and review action currently being taken in NSW to address climate change, including:
    i. the environmental, social and economic impacts of the action, and
    ii. action related to the strategies, policies and programs of the Government of NSW
4. to identify and recommend action that should be taken by the Government of NSW to address climate change, including strategies, policies and programs that should be implemented by the Government of NSW
5. to educate and inform the Government of NSW, businesses, organisations and individuals to promote action to address climate change.

Under the Climate Change Act, the Commission may also provide advice and make recommendations to:

- the Secretary of a Department
- the Independent Planning Commission.

In undertaking its functions, the Commission must consider the guiding principles in section 8 of the Climate Change Act.

The Commission's work includes monitoring progress towards the emissions reduction targets and adaptation objective and providing advice to the NSW Government either at the request of the Minister for Climate Change or on its own initiative. This advice relies on research and engagement and includes spotlight reports, letters, and submissions to parliamentary inquiries.

Annual report

Under section 21 of the Climate Change Act, the Commission is required to provide an annual report to the Minister for Climate Change by 1 July each year for the previous calendar year. The Minister must then table the report in NSW Parliament within 28 days of receipt.

The Act also requires the Minister to publish a response to the annual report within six months of receipt. Where the report contains recommendations, the response must indicate whether each recommendation is accepted, refused, or noted, and where a recommendation is not accepted, the Minister must provide reasons.

In accordance with section 21(3) of the Act, the Commission consulted with the Agriculture Commissioner in the preparation of this report.

83 Read the full Act here.

Joint Standing Committee on Net Zero Future

The Parliament of NSW established the Joint Standing Committee on Net Zero Future (Parliament of New South Wales, 2024) to monitor and review the exercise of the Commission's functions under the Climate Change Act. The Committee's mandate is:

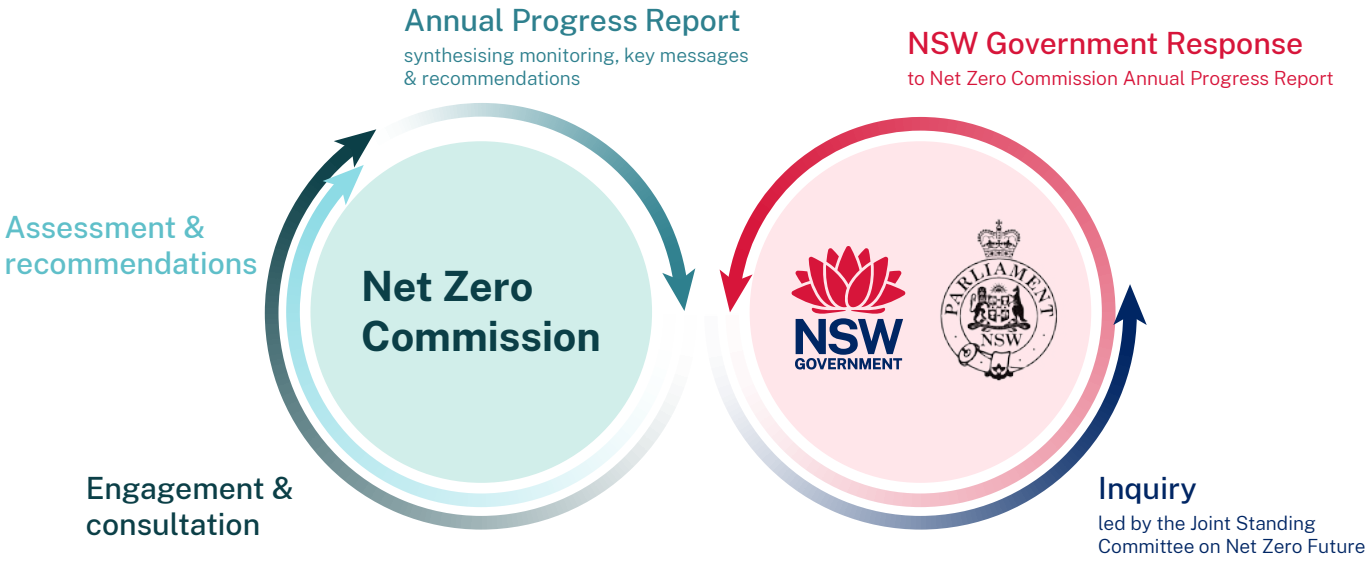
a. to monitor and review the exercise of the Commission's functions under the Climate Change Act

b. to examine each annual report, and other reports of the Commission as the Committee sees fit and to report to both Houses of Parliament on any matter appearing in or arising out of, any such report

c. to inquire into any question in connection with the Committee's functions which is referred to it by both Houses of Parliament and to report to both Houses on that question, and

d. any other related matters.

Figure 47: Development cycle of the Annual Progress Report



On 13 December 2024 the Joint Standing Committee established an Inquiry into the 2024 Annual Report of the Commission (Joint Standing Committee on Net Zero Future, 2024). A public hearing was held on 14 March 2025. The Committee published a report of its findings and recommendations on 28 March 2025 (Joint Standing Committee on Net Zero Future, 2025).

The recommendations were:

1. That the Government ensures the Commission is well resourced and supported by other departments and agencies in order to deliver its legislated objectives for the state of NSW, and responds with careful consideration to the observations and advice of the Commission

2. That the Government supports the Commission to use its legislated functions to provide a further report on the resources sector, including methane abatement technology and fugitive emissions, as a matter of urgency

3. That the Government consider implementing regulatory changes to encourage the earlier adoption of low emissions technologies

4. That the Government implement changes in regard to energy ratings for existing homes that could be disclosed at point of sale or lease to provide buyers or renters information on energy efficiency before making the decision to buy or lease the property.

The Committee's recommendations were supported by the NSW Government with actions for each outlined in the Government's Response to the Parliamentary Committee Inquiry (NSW DCCEEW, 2025c). The response also noted that the Minister for Climate Change would ask the Commission to advise on developing a new Net Zero Plan and to undertake a review of the EPA's Proposed Greenhouse Gas Mitigation Guide for NSW Coal Mines. The Commission provided this advice and published the Coal Mining Emissions Spotlight Report in response to recommendation 2. These are available on the Commission's website.[84]

6.2 Structure of the Commission

The Commission consists of 5-7 appointed Commissioners, the Chief Scientist and Engineer as an ex-officio member and staff led by an Executive Director.

Commissioners are appointed by the Governor on the recommendation of the Minister for Climate Change. The Minister may appoint a commissioner as the Chair of the Commission. Commissioners are appointed for a term of up to 5 years and are not eligible for reappointment after this term. Table 3 lists the Commissioners in post during the reporting period and the term of their appointment. The Commissioners' attendance record is provided in Appendix 2.

Table 3: Appointed Commissioners during the reporting period

Commissioner	Term of appointment
Dr Paul Grimes (former Chair)	4 July 2024 to 4 March 2025
Ms Maria Atkinson AM	4 July 2024 to 30 June 2029
Mr Oliver Costello	4 July 2024 to 30 June 2029
Professor Frank Jotzo	4 July 2024 to 30 June 2029
Ms Katerina Kimmorley	4 July 2024 to 30 June 2029
Ms Meg McDonald (former interim Chair*)	4 July 2024 to 30 June 2029 (*for the period 3 April 2025 to 31 August 2025)
Professor Andrew Pitman AO	4 July 2024 to 30 June 2029
Associate Professor Nick Rowley (current Chair)	1 September 2025 to 30 August 2030
Professor Hugh Durrant-Whyte	Ex-officio (Chief Scientist and Engineer)

The Commission's Executive Director works with the Commissioners and reports to the Secretary of DCCEEW for administrative matters, including budget and operations. Commission staff are Public Service employees of DCCEEW. The key relationships of the Commission are shown in Figure 48.

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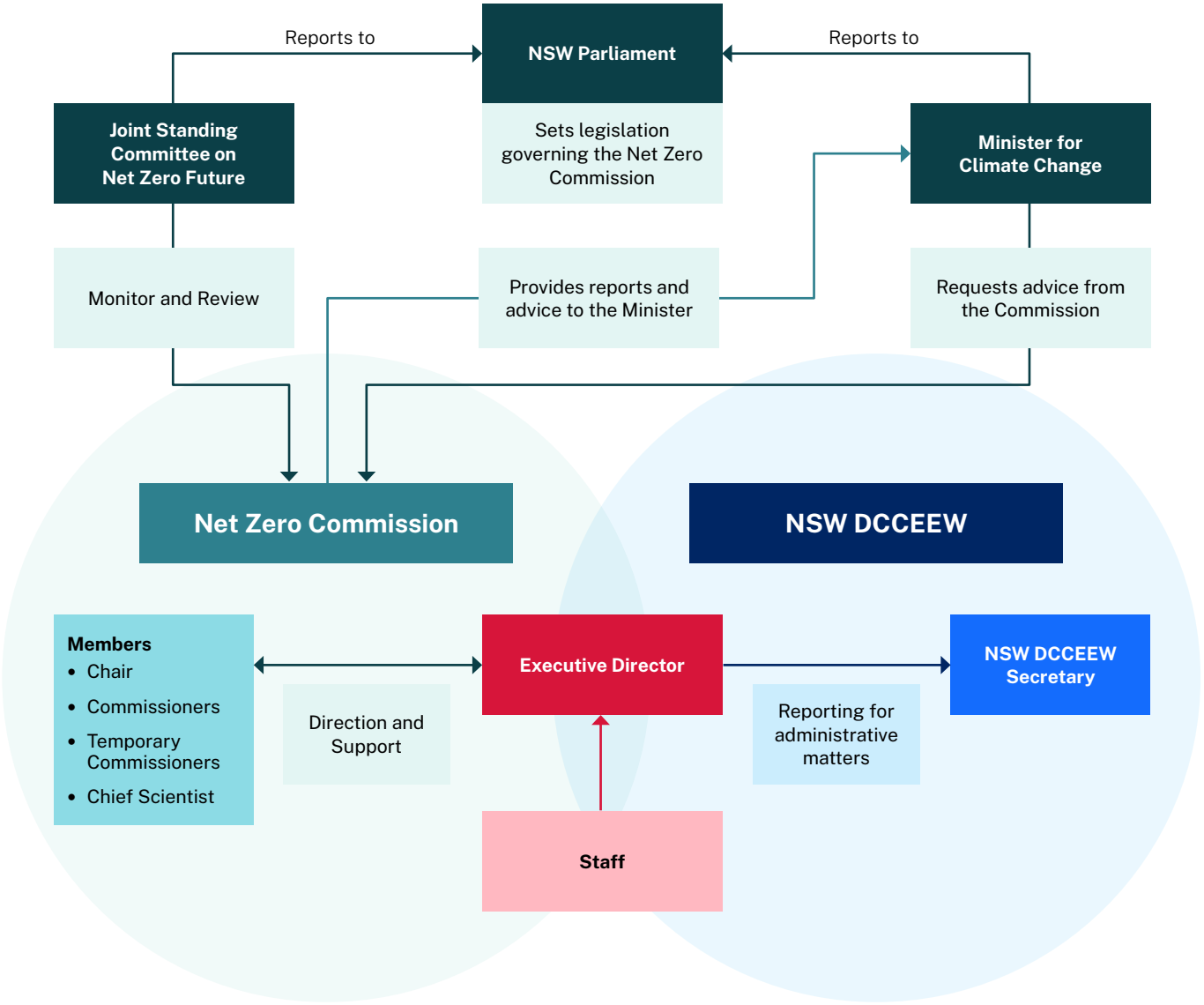
Figure 48: Outline of the key relationships of the Net Zero Commission



Values of the Commission

In providing independent advice to the NSW Government, the Commission is committed to:

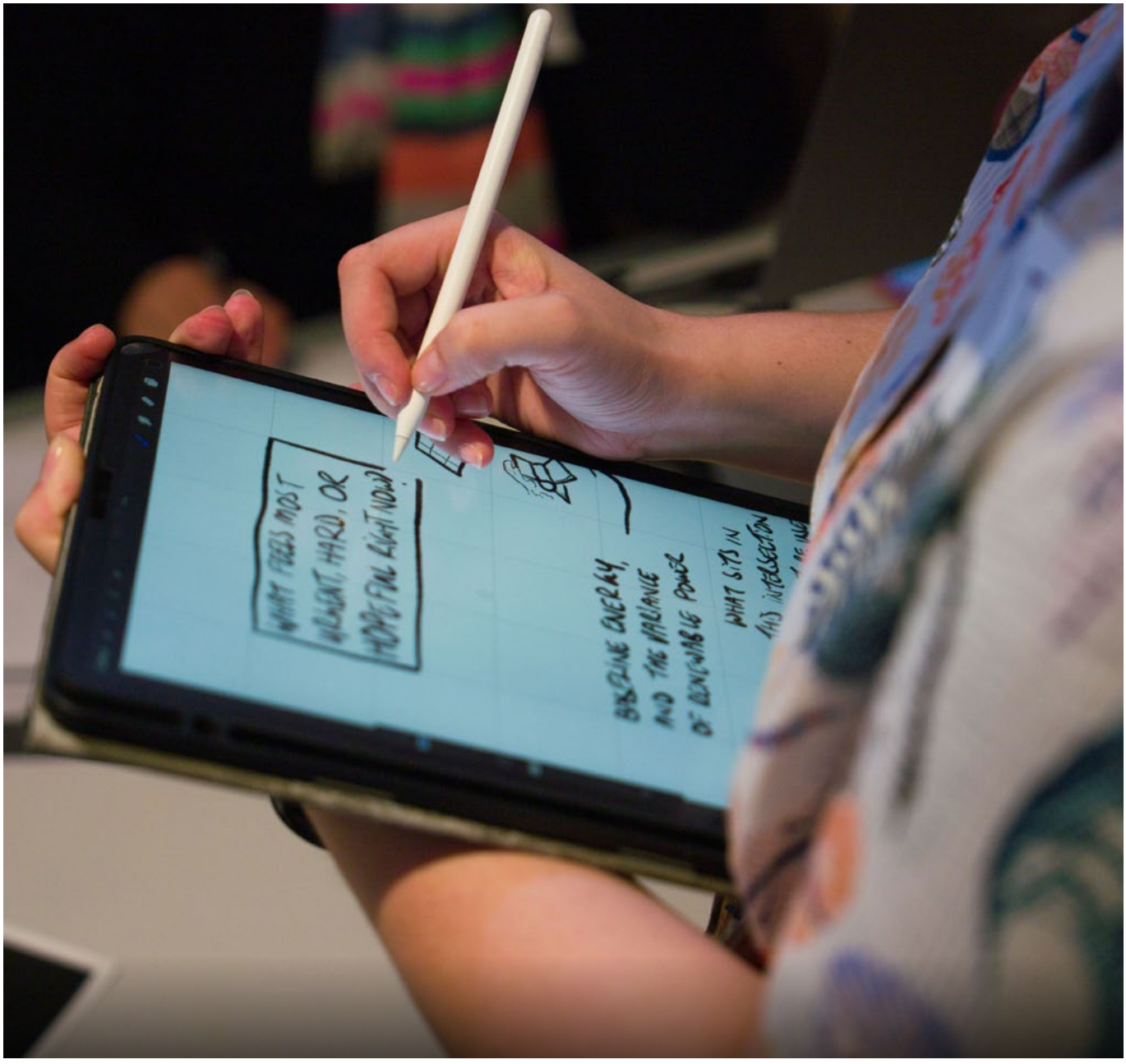
- having structured and transparent systems of governance that support the delivery of its functions under the Climate Change Act
- creating a culture that supports integrity, trust, accountability and service
- using best practice public sector management, including efficient use of public investment, clear accountabilities and delegations
- being accountable to NSW Parliament for its legislated functions via the Joint Standing Committee on Net Zero Future
- engaging with stakeholders to promote understanding and inform an evidence-based debate on climate change and its impacts, and measures to address it
- processes that are informed by rigorous evidence-based approaches.

Engagement with other climate councils

The Commission is one of many independent climate change bodies established around the world, including in the UK, Canada, New Zealand and the European Union.

The International Climate Councils Network (ICCN) provides a forum for collaboration and mutual support between climate councils, as they assist their governments in remaining accountable and on track in delivering the Paris Agreement and other climate commitments (ICCN Secretariat, 2026). The Commission joined the ICCN in 2025 as a sub-national member, enabling it to share insights and collaborate with international peers.

The Commission also engages regularly with the Climate Change Authority and is a member of the Australian Climate Councils Network (ACCN) which was launched in December 2025. The ACCN has 6 members: the Climate Change Authority, the Net Zero Economy Authority, Queensland Clean Economy Expert Panel, South Australian Premier's Climate Change Council, ACT Climate Change Council and the Commission.



UNSW Photographic Society

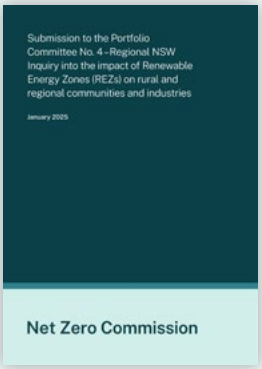
6.3 Publications released in the reporting period

The Commission published the following reports, letters and inquiry submissions during the reporting period 1 July 2024 to 31 December 2025.

November 2024

The Commission's first annual report provided an initial assessment of the progress being made by the NSW Government towards meeting its legislated emissions reduction targets and adaptation objective.

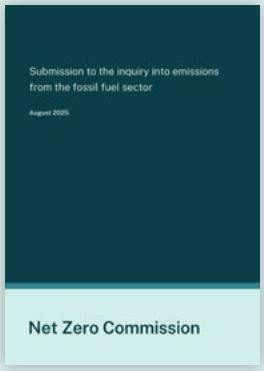
2024 Annual Report



February 2025

The Commission made a submission to the inquiry into the impact of REZs on rural and regional communities and industries in NSW.

Submission to the inquiry into the impact of Renewable Energy Zones



August 2025

The Commission made a submission to the inquiry into emissions from the fossil fuel sector.

Submission to the inquiry into emissions from the fossil fuel sector

August 2025

The Commission wrote a letter to the Minister for Climate Change with recommendations to prepare for and respond to extreme heat and humidity events in NSW.

Extreme heat and humidity in summer 2025–2026

September 2025

The Commission wrote a letter to the Chair of the NSW IPC with recommendations to consider during planning approvals.

Letter to NSW Independent Planning Commission

September 2025

The Commission wrote a letter to the Secretary of DPHI with recommendations to consider during planning approvals and assessment reports.

Letter to the Department of Planning, Housing and Infrastructure

December 2025

The Commission published its first Engagement Summary Report, providing an overview of what it heard from the engagement held during 2025.

Engagement Summary Report 2025

December 2025

The Commission published its first spotlight report. The report identifies opportunities to reduce emissions and the need to support affected regional communities as the global economy shifts away from coal.

Coal Mining Emissions Spotlight Report

6.4 Longer-term work

The Commission is developing its monitoring framework to enable effective monitoring of progress towards the legislated emissions reduction targets and adaptation objective. This work builds on approaches taken in other jurisdictions, such as by the UK's Climate Change Committee and New Zealand's Climate Change Commission as well as input from stakeholders during the Commission's 2025 consultation.

The Commission is developing NSW-specific science-aligned decarbonisation pathways to 2050. These pathways will be based on scenarios which adopt various assumptions about technology availability, costs and behaviour change to model how different parts of the economy can contribute to achieving NSW's legislated targets. The Commission will seek public and expert feedback throughout the project, with an initial call for evidence in mid–2026.

The Commission will provide updates on its work plan on the Commission website.[85]

6.5 How to engage with the Commission

The Commission strives for best practice community and stakeholder engagement. We view our engagement work as an opportunity to ensure our state is more resilient to a changing climate and on a clear path to net zero.

When engaging, the Commission will listen in an open and transparent way. Our goal is to have meaningful dialogue. The input we receive, along with evidence from other sources, will help inform our policy recommendations and shape the work of the Commission.

Brinae Smith

Our public engagement is guided by 4 principles:

Integrity
Clear in scope and purpose.

Inclusive
Accessible, with a full range of values and perspectives.

Meaningful
Promote and open-up genuine discussion.

Transparent
Stakeholders should be able to see and understand the impact of their involvement in consultations.

We welcome feedback on our consultation and engagement process at any time.

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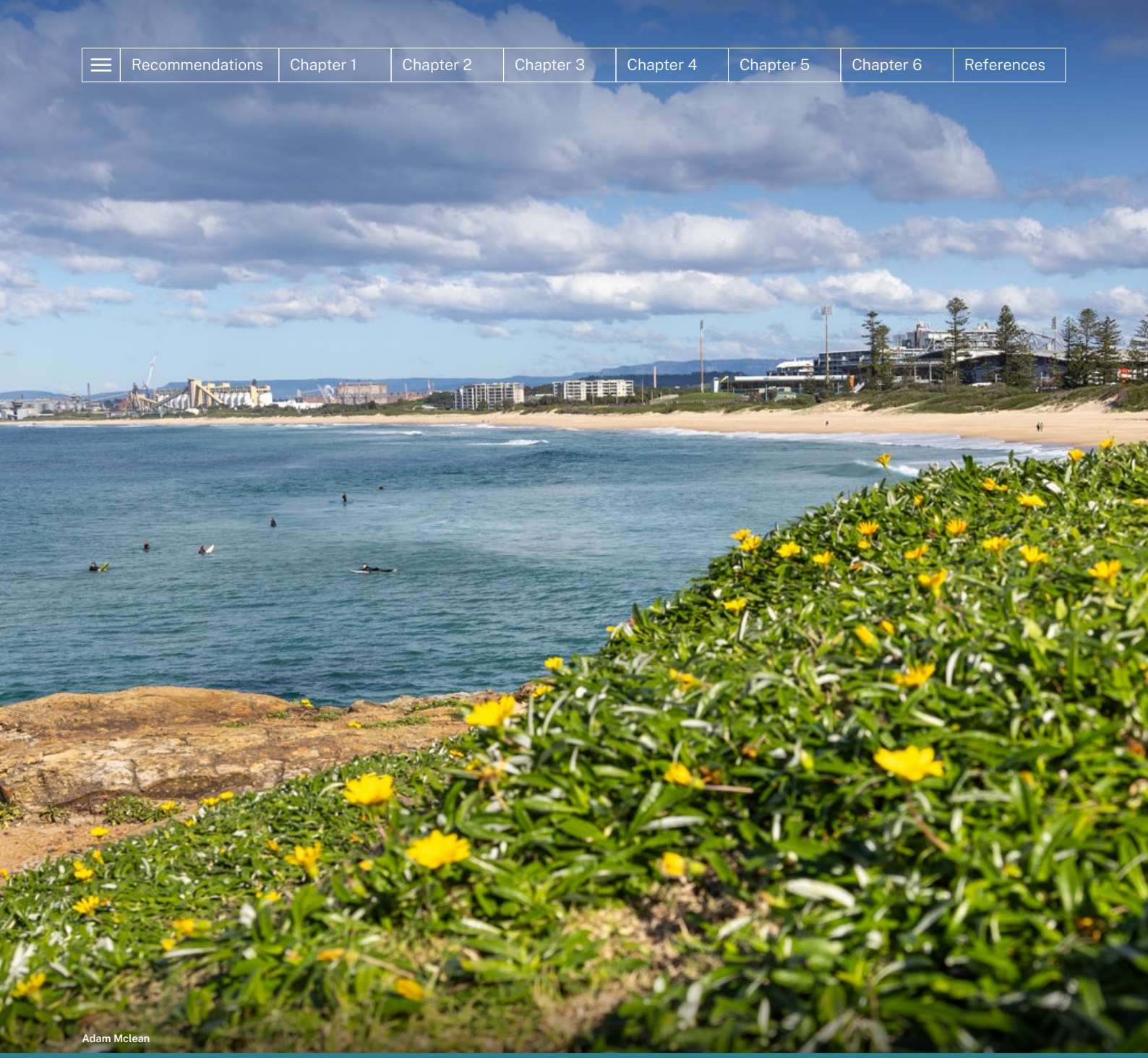


Adam Mclean

Appendices

Appendix 1: Progress assessment for the Climate Change Adaptation Strategy, Adaptation Action Plan and State Disaster Mitigation Plan

Climate Change Adaptation Strategy Assessment

No.	Climate Change Adaptation Strategy action details	Status	Timeliness
1	Establish a set of specific, measurable and timebound metrics to measure progress toward climate change resilience and adaptation for all of NSW by the end of 2023.	Ongoing	Significantly delayed
2	Require all NSW Government agencies to report regularly against the metrics (for example annually, or every 2 or 3 years as appropriate for the metric) by no later than the end of 2025.	Not yet commenced	Significantly delayed
3	Publish regularly updated and improved local level climate change projections.	Ongoing	Ongoing
4	Undertake the first climate change scenario analysis for NSW by the end of 2024 and update it periodically to align with the latest evidence.	In progress	Significantly delayed
5	Engage in ongoing research on priority climate change risks, opportunities and adaptation options.	Ongoing	Ongoing
6	Engage in ongoing research and modelling to translate climate change projections into real-world socio-economic impacts and address priority knowledge gaps.	Ongoing	Ongoing
7	Translate climate science into accessible information and resources for people with exposure to climate change risks and all NSW stakeholders.	Ongoing	Ongoing
8	Continue to develop practical information, advice and decision tools on the best way to adapt and prepare for climate change.	Ongoing	Ongoing
9	Publish NSW climate change risk and opportunity assessments at least every 5 years, with the first assessment to be published in 2023.	In progress	Significantly delayed
10	Publish a NSW adaptation action plan at least every 5 years based on the latest climate change risk and opportunity assessment, with the first plan to be published in 2023.	Delivered	Delayed
11	Update or develop policies, guidance, processes and standards (such as NSW Government Business Case Guidelines, Guide to Cost-Benefit Analysis, the NSW Gateway Policy and the Asset Management Policy) so that significant NSW Government decisions rigorously consider climate change risks, opportunities and adaptation as part of business-as-usual by the end of 2023.	Completion questioned	Significantly delayed
12	Clearly define responsibilities for NSW public sector senior executive leadership to improve oversight around climate change risks, opportunities and adaptation by the end of 2023.	Completion questioned	Significantly delayed
13	Appoint a climate change risk officer in each NSW Government cluster to embed climate change risk and adaptation across Government actions and decisions by the end of 2023.	Delivered	Delayed
14	Require all NSW Government agencies to identify their own climate change risks in alignment with the Climate Risk Ready NSW Guide and climate change projections by the end of 2023.	In progress	Significantly delayed

No.	Climate Change Adaptation Strategy action details	Status	Timeliness
15	Develop climate change risk thresholds and a prioritisation framework to guide the development of adaptation action plans by the end of 2023 or earlier.	Not yet commenced	Significantly delayed
16	Engage with international bodies and groups of subnational governments to make climate change resilience and adaptation part of all key decisions internationally, move the adaptation agenda forward and maximise opportunities for NSW, including exploring options to share NSW programs and expertise with other jurisdictions and vice versa.	Ongoing	Ongoing
17	The Office of Energy and Climate Change in NSW Treasury will be responsible for monitoring the actions under this strategy and adaptation action plans. The Office will track progress and will coordinate and develop governance for monitoring and reporting by other agencies.	In progress	Not due yet
18	Publish whole of government climate change disclosures consistent with the Taskforce on Climate-related Financial Disclosures recommendations and other leading international and national standards and guidance as they evolve.	In progress	Significantly delayed
19	Publish data and projections on climate change risks, including the financial impacts of those risks, in the NSW Treasury Intergenerational Report released every 5 years.	In progress	Not due yet
20	At least every 5 years, a panel comprised of representatives from Infrastructure NSW, the Office of the NSW Chief Scientist and Engineer, the NSW Chief Economist and other representatives with suitable expertise will publish an evaluation report on the effectiveness of the actions set out in this strategy and adaptation action plans.	Not yet commenced	Not due yet

Climate Change Adaptation Action Plan Assessment

No.	Climate Change Adaptation Action Plan action details	Status	Timeliness
1	Review the land-use planning framework to better embed climate change risk and adaptation considerations, including for urban heat, flooding, bush fire and coastal hazards.	Ongoing	Ongoing
2	Develop a landscape restoration framework for NSW as part of the NSW plan for nature.	In progress	Delayed
3	Publish the Saving our Species Key Threatening Process Strategy for Anthropogenic Climate Change.	In progress	Not due yet
4	Review the NSW framework for managing coastal hazards under the *Coastal Management Act 2016* to assess if it is achieving its objectives in relation to responding to current and future coastal hazards under climate change.	In progress	Not due yet
5	Analyse how government can better support natural environment adaptation in the implementation of the NSW plan for nature.	Ongoing	Ongoing
6	Ensure water strategies, policies, and regulations (including water allocation and sharing) consider climate change impacts and risks.	Ongoing	Ongoing
7	Improve integration of drought and incident management planning in response to climate change, ensuring preparedness and capability are maintained.	Ongoing	Ongoing
8	Update long-term water plans to include consideration of climate change impacts and risks for water for the environment.	In progress	Delayed

No.	Climate Change Adaptation Action Plan action details	Status	Timeliness
9	Advance the Marine Heatwave Response Plan.	Delivered	On time
10	Continue to inform and influence policy, legislative, and compliance frameworks for primary industries' outcomes in climate change adaptation.	Ongoing	Ongoing
11	Continue to support government entities to build their capability to identify, assess, manage, disclose and monitor climate change related impacts and risks on their assets, decision-making and service delivery.	Ongoing	Ongoing
12	Implement education and capability building programs for planners, agency and consent authority staff to promote climate change risk management in planning.	Ongoing	Ongoing
13	Establish capability to support the development of codesigned climate change adaptation measures with and for Aboriginal communities in NSW. This will include forming and continuing effective partnerships on climate change adaptation with Aboriginal communities, their organisations and key stakeholders across NSW Government. It will also include enabling place-based caring for Country initiatives that promote and support well adapted and healthy communities and Country across the cultural landscape.	In progress	Not due yet
14	Develop training on climate change adaptation and mitigation, including health impacts of climate change, such as mental health, to guide the implementation of adaptation actions across the healthcare system.	In progress	Not due yet
15	Develop guidance and/or tools to support NSW Health organisations to identify and assess risks to supply chain, infrastructure, and service delivery to guide the implementation of adaptation actions across the healthcare system.	In progress	Not due yet
16	Ensure transport projects and operations consider climate change risks by updating Transport for NSW's project risk assessment guidelines, incorporating minimum risk assessment and adaptation planning requirements, and clear thresholds of application.	Delivered	Delayed
17	Develop guidance for industry and councils to support delivery of increased green infrastructure and cooler places.	Ongoing	Ongoing
18	Continue to work with primary producers and industry groups that support them to build understanding of changing climatic conditions and climatic vulnerabilities and how they can adapt to be more resilient.	Ongoing	Ongoing
19	Develop guidelines to enable robust and sustainable management decisions around climate-proofing freshwater and marine restoration and management.	On hold	Significantly delayed
20	Develop ways of reporting risks consistently across the transport sector.	Delivered	On time
21	Ensure water utilities and water infrastructure owners use a systems approach to assess and address climate change risk.	Ongoing	Ongoing
22	Improve and apply our understanding of climate change impacts and risks on water management and the environment, including surface water, ground water, wastewater, stormwater, and water quality.	Ongoing	Ongoing
23	Update biodiversity resilience and connectivity modelling to inform conservation and planning decision-making.	In progress	Delayed
24	Undertake research and monitoring to rapidly detect changes to fire risks in ecosystems.	In progress	Not due yet

No.	Climate Change Adaptation Action Plan action details	Status	Timeliness
25a	Provide integrated, quantitative bush fire risk estimation (current and future) as part of bush fire risk modelling.	In progress	Not due yet
25b	Provide quantitative bush fire risk estimation for environmental and Aboriginal cultural values (current and future) as part of bush fire risk modelling.	In progress	Not due yet
26	Establish research and monitoring to underpin adaptation and restoration strategies that help mitigate the impacts of climate change on the marine species protected under the *Biodiversity Conservation Act 2016*.	In progress	Not due yet
27	Investigate the impacts and risks of the changing climate on the power system, including consumer demand, generation and network availability and the implications this has for NSW's electricity market and the net zero energy transition.	In progress	Delayed
28	Undertake social research into the impact of climate change on NSW workers.	Delivered	On time
29	Investigate the economic and fiscal impacts of climate change on the NSW economy and NSW Government, including exposure to climate change risks, opportunities and the related implications for the state's long-term fiscal outlook.	In progress	Not due yet
30	Continue to prioritise the collection and provision of data and information through the NSW Coastal and Flood Data Network, to assist with identifying and managing risks from coastal and flood hazards and improve our understanding of climate change risks.	Ongoing	Ongoing
31	Continue to monitor, report and forecast changing seasonal conditions for primary industries to enhance productive capacity.	Ongoing	Ongoing
32	Undertake vulnerability assessments and adaptation actions for marine estate assets.	Ongoing	Ongoing
33	Increase understanding of climate change impacts on the NSW marine estate and build knowledge and capacity of coastal and marine managers and the community in strategic adaptation planning and management.	In progress	Not due yet
34	Enhance understanding of biosecurity threats to primary industries under climate change and provide options for response and adaptation.	Ongoing	Ongoing
35	Communicate the climate change impacts and risks for human health with the public. This includes public health messaging on severe weather events (e.g. heatwaves) and reporting on the population health impact of heat.	Ongoing	Ongoing
36	Release and communicate the Reef Adapt webtool to provide stakeholders, community groups and restoration practitioners with the tools to climate-proof restoration and aquaculture actions.	Delivered	On time
37	Release detailed DPIRD vulnerability assessment reports for each industry investigated and engage with related industry bodies.	Delivered	On time
38	Investigate additional mechanisms and incentives that facilitate climate change risk management, adaptation and building resilience in areas impacted by flood and coastal hazards.	In progress	Delayed
39	Identify opportunities for the NSW planning system to support enhancement of green infrastructure.	Ongoing	Ongoing
40	Scope opportunities to mainstream or embed considerations of climate change adaptation into the NSW Government's fiscal and economic decision-making.	In progress	Not due yet
41	Work with industry on adaptation options in response to identified agricultural, horticultural, forestry, fisheries and biosecurity related climate change vulnerabilities.	Ongoing	Ongoing

No.	Climate Change Adaptation Action Plan action details	Status	Timeliness
42	Continue to implement the NSW Coastal Management Framework and Program and the NSW Flood Risk Framework and Floodplain Management Program to identify and manage climate change risks to our communities from coastal and flood hazards.	Ongoing	Ongoing
43	Work with other state agencies and local government to drive strategic implementation of greater Sydney's blue-green grid.	Ongoing	Ongoing
44	Increase resilience and adaptation to climate change induced air quality and health impacts and risks by implementing initiatives in the NSW Clean Air Strategy under its priorities for 'Better preparedness for pollution events' and 'Better places'.	Ongoing	Ongoing
45	Increase resilience of the visitor economy industry through implementing actions under the NSW Visitor Economy Strategy 2030.	Ongoing	Ongoing
46	Continue work to understand and predict the risks and opportunities that climate change brings to primary industries. Support primary industries to adapt to climate change, increased climate variability and extreme events through new technologies, management practices and production systems to maintain food and fibre production systems.	Ongoing	Ongoing

State Disaster Mitigation Plan Assessment

No.	State Disaster Mitigation Plan action details	Status	Timeliness
1	Develop a Statewide framework for evacuation infrastructure capacity, analysis and upgrades.	In progress	Delayed
2	Develop a State policy for large-scale multi-hazard managed relocation.	In progress	Significantly delayed
3	Review governance and funding arrangements for levee maintenance.	In progress	Significantly delayed
4	Assess the feasibility of large-scale offshore sand reserves and other sources for beach nourishment including where it might be suitable.	In progress	Significantly delayed
5	Explore infrastructure mitigation options for landslides.	On hold	Significantly delayed
6	Develop a library of standard planning controls for all natural hazards for councils.	Not yet commenced	Significantly delayed
7	Develop framework and supporting processes and tools for determining tolerable natural hazard risk.	In progress	Significantly delayed
8	Develop a strategic management plan for the NSW flood gauge network.	In progress	Significantly delayed
9	Conduct a technology pilot program to evaluate the functionality, effectiveness, and reliability of intelligent sensors.	In progress	Not due yet
10	Develop a policy for consideration of resilience to natural hazards as part of building codes and standards.	Completion questioned	Significantly delayed

No.	State Disaster Mitigation Plan action details	Status	Timeliness
11	Build a library of updated building standards to increase resilience to natural hazards and develop a plan to embed into legislation.	Not yet commenced	Significantly delayed
12	Develop a multi-pronged communications and engagement strategy about building resilience.	Not yet commenced	Not due yet
13	Improve multi-hazard risk awareness and preparedness.	On hold	Significantly delayed
14	Identify existing gaps in education programs for young people and school communities on natural hazards, and develop an action plan to address them.	Not yet commenced	Significantly delayed
15	Develop a Disability Inclusive Disaster Risk Reduction policy and relevant tools.	In progress	Significantly delayed
16	Coordinate a review of preparedness planning for State government agencies, particularly social service providers.	Not yet commenced	Significantly delayed
17	Develop a process to consider appropriate home modification requirements in building codes and standards and funding guidelines to support home modification activities.	Not yet commenced	Not due yet
18	Include a process in the DAP Guidelines and Framework for the identification of the relative criticality of assets and plans for asset resilience interventions.	Delivered	Significantly delayed
19	Develop an approach to prioritise and coordinate place-based infrastructure resilience interventions by private sector operators.	Delivered	Delayed
20	NSW Government Business Case Guidelines to include natural hazard risk and criticality assessments as part of decision making for new assets.	Delivered	On time
21	NSW Government asset owners reflect DAPs in asset management plans.	Completion questioned	Significantly delayed
22	Establish a nature-based measures knowledge hub.	In progress	Significantly delayed
23	Include guidance in the DAP Guidelines and Framework for mapping of social assets and identification of social cohesion actions	Delivered	Significantly delayed
24	Deliver a Statewide framework for social cohesion which includes a focus on natural hazard risk.	In progress	Not due yet
25	Investigate options to support resourcing and capability-building in local councils.	Delivered	Delayed
26	Provide resources, data and funding to support Discrete Aboriginal Communities and other Aboriginal landowners to develop DAPs.	Delivered	On time
27	Establish a specifically convened Aboriginal working group regarding Aboriginal disaster risk reduction at State and local levels.	Delivered	On time
28	Include a process in the DAP Guidelines and Framework to facilitate trusted relationships with Aboriginal local communities to recognise Aboriginal cultural values, knowledge, and practices (across all Country).	Delivered	Significantly delayed

No.	State Disaster Mitigation Plan action details	Status	Timeliness
29	Establish an assurance and expert review function for DAPs.	Delivered	Delayed
30	Improve Local Emergency Management Committee capacity and capability to support its increased role in disaster mitigation.	Delivered	Delayed
31	Formalise natural hazard risk analysis and assessment methodologies, and establish a dedicated hub to support disaster adaptation planning.	In progress	Delayed
32	Progress a business case for a NSW Mitigation Fund to drive additional risk reduction, particularly for projects prioritised in DAPs.	Delivered	Delayed
33	Explore options for innovative funding pathways and financing mechanisms, such as the NSW Sustainability Bond.	Delivered	Delayed
34	Develop funding principles to guide cost sharing for disaster risk reduction between the Australian, State and local governments, and private asset owners.	Delivered	Delayed
35	Review levy arrangements on insurance premia.	In progress	Significantly delayed
36	Collaborate with NEMA and the insurance sector to reflect disaster risk reduction measures in insurance pricing, and use data on insurance affordability to inform strategic land use planning responses.	Delivered	Delayed
37	Develop a Monitoring, Evaluation, Accountability and Learning framework for the continuous improvement of disaster risk reduction in NSW.	Delivered	Delayed

Appendix 2: Commissioner attendance record

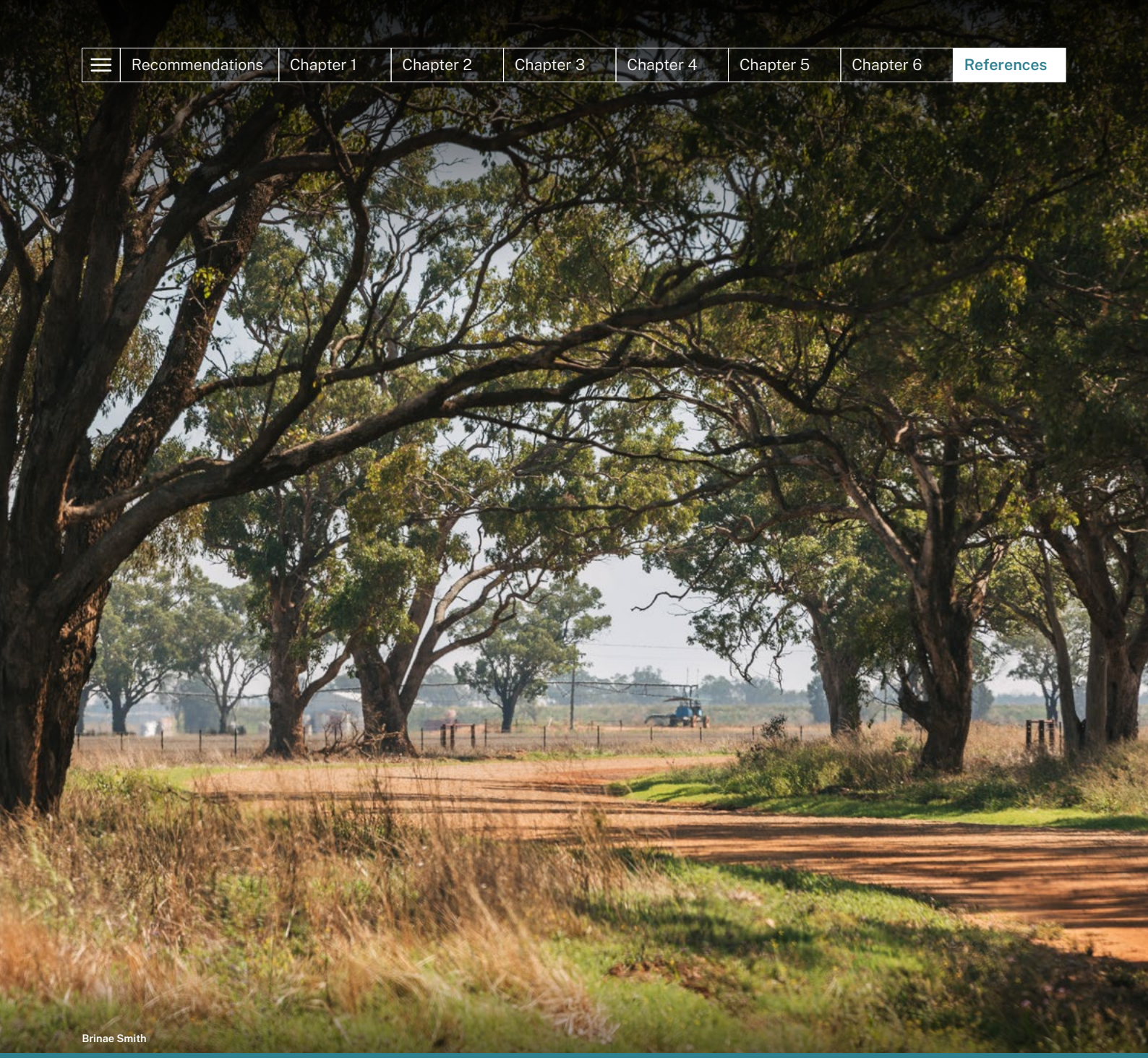
In addition to regular Commission meetings, Commissioners also provide out of session advice, participate in working groups, and regularly meet with staff to provide their expertise on projects.

Name	Role	Meeting 1 9 Aug 2024	Meeting 2 5 Sep 2024	Meeting 3 1 Oct 2024	Meeting 4 5 Nov 2024	Meeting 5 3 Dec 2024	Meeting 6 7 Jan 2025	Meeting 7 3 Feb 2025	Meeting 8 3 Mar 2025	Meeting 9 7 Apr 2025
Dr Paul Grimes	Chair	✓	✓	✓	✓	✓	✓	✓	✓	
Associate Professor Nick Rowley	Chair									
Ms Maria Atkinson AM	Commissioner	✓	✓	✓	✓	✓	✓	✗	✗	✓
Mr Oliver Costello	Commissioner	✓	✓	✓	✓	✓	✓	✓	✓	✓
Professor Frank Jotzo	Commissioner	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ms Katerina Kimmorley	Commissioner	✓	✓	✓	✓	✓	✓	✗	✓	✓
Ms Meg McDonald	Commissioner	✓	✓	✓	✓	✓	✓	✓	✓	
	Interim Chair									✓
Professor Andrew Pitman AO	Commissioner	✓	✓	✓	✗	✓	✓	✓	✓	✓
Professor Hugh Durrant-Whyte	Ex-Officio member	✓	✗	✓	✗	✓	✓	✓	✓	✓

Name	Role	Meeting 10 5 May 2025	Meeting 11 2 Jun 2025	Meeting 12 7 Jul 2025	Meeting 13 11 Aug 2025	Meeting 14 1 Sep 2025	Meeting 15 14 Oct 2025	Meeting 16 17 Nov 2025	Meeting 17 15 Dec 2025
Dr Paul Grimes	Chair								
Associate Professor Nick Rowley	Chair						✓	✓	✓
Ms Maria Atkinson AM	Commissioner	✓	✓	✓	✓	✓	✓	✗	✓
Mr Oliver Costello	Commissioner	✓	✓	✓	✓	✓	✓	✓	✓
Professor Frank Jotzo	Commissioner	✓ (Presiding Commissioner)[86]	✓	✓	✓	✗	✗	✗	✓
Ms Katerina Kimmorley	Commissioner	✓	✓	✓	✓	✓	✓	✓	✓
Ms Meg McDonald	Commissioner						✓	✓	✓
	Interim Chair	✗	✓	✓	✓	✓			
Professor Andrew Pitman AO	Commissioner	✗	✓	✓	✗	✓	✓	✓	✓
Professor Hugh Durrant-Whyte	Ex-Officio	✗	✓	✓	✗	✗	✓	✓	✓

✓ Attended ✗ Apology

86 If the chair is absent from a Commission meeting, a commissioner is elected to preside at the meeting.



Brinae Smith

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