Environment Protection Authority

Climate Change Action Plan 2023–26

The NSW Environment Protection Authority's plan to address climate change and protect the environment

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Published by:
NSW Environment Protection Authority
6&8 Parramatta Square
10 Darcy Street, Parramatta NSW 2150
Locked Bag 5022, Parramatta NSW 2124

Phone: +61 2 9995 5000 (switchboard)
Phone: 131 555 (NSW only – environment information and publications requests)
Fax: +61 2 9995 5999
TTY users: phone 133 677, then ask for 131 555
Speak and listen users:
phone 1300 555 727, then ask for 131 555

Email: info@epa.nsw.gov.au
Website: www.epa.nsw.gov.au

Report pollution and environmental incidents
Environment Line: 131 555 (NSW only) or
info@epa.nsw.gov.au
See also www.epa.nsw.gov.au

ISBN 978 1 922963 08 6
EPA 2023P4265
January 2023

Acknowledgement of Country

The NSW Environment Protection Authority acknowledges that Aboriginal people have a spiritual and cultural connection and an inherent right to protect the land, waters, sky and natural resources of NSW. This connection goes deep, and has since the Dreaming.

The entire landscape, including traditional lands, fresh water and seas, has spiritual and cultural significance to Aboriginal people. If the cultural and spiritual values of Aboriginal people are sustained by providing protection and respect, then many other components of Aboriginal life will be healthy. By this understanding there is no separation of Country, culture, waters and wellbeing. The health of the natural environment, fresh waters, land animals, marine animals and people are intimately connected.

In compiling this action plan, the EPA recognises that Aboriginal people as the first protectors have continuously cared for Country and been able to live effectively with changing climates for thousands of generations. Intergenerational knowledge handed down through vibrant cultures has meant Aboriginal peoples have intimate and detailed knowledge of their respective Country and climates. This knowledge has also resulted in effective understanding and management of place, including seasonal calendars which relate to specific lands and waters that guide Aboriginal people on climate matters.

The EPA recognises the connection of Aboriginal people to their land, their waters and surrounding communities and acknowledges their history and cultures here on this land.

We also acknowledge our Aboriginal and Torres Strait Islander employees are an integral part of our diverse workforce and recognise the knowledge embedded forever in Aboriginal and Torres Strait Islander custodianship of Country and culture.

Dharawal Country, Royal National Park, NSW

The EPA's Statement of Commitment to Aboriginal People of NSW

We, the NSW Environment Protection Authority, acknowledge Aboriginal people as the enduring Custodians of the land, sea, waters and sky of NSW.

We recognise the entire NSW landscape, including the lands, waters, plant and animal species and seas, has spiritual and cultural significance to all Aboriginal people of NSW. By this understanding there is no separation of nature, wellbeing and culture. The health of the natural environment, and the health of people and culture are intimately connected. In the spirit of reconciliation, the EPA is committed to:

- work in respectful partnership with Aboriginal peoples
- actively learn from and listen to Aboriginal voices, cultures and knowledges
- act boldly and bravely to play our part to mend and heal Country together
- respect Aboriginal people's knowledge and science as an equal to conventional science
- include Aboriginal knowledges and science in EPA decision-making
- ensure Aboriginal knowledge, science and Indigenous cultural and intellectual property is protected
- address both the tangible and intangible cultural elements of environmental protection
- deliver on results that have direct benefits for Aboriginal communities
- embed consistent, meaningful, and trustworthy engagement with Aboriginal communities
- improve Aboriginal cultural competency across the agency
- improve Aboriginal employment across the agency
- monitor the impact of this commitment.

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1. Setting the scene: delivering on our climate change policy

Our climate change policy

Our *Climate Change Policy* (the policy) describes the causes and consequences of climate change in NSW and outlines our commitment to deliver on our statutory objectives and duty to address climate change and our **Strategic Plan 2021–24** commitments. The policy adopts, supports and builds on the NSW Government's overarching climate change objectives, which include reducing greenhouse gas emissions and making NSW more resilient and adapted to a changing climate. The policy also gives our stakeholders certainty on our climate change regulatory approach.

This *Climate Change Action Plan 2023–26* (the action plan) sets out the specific actions we're taking to deliver on the policy's objectives. The policy and action plan should be read together.

Purpose of this action plan

The purpose of this action plan is to describe how we'll deliver on the objectives of the policy. It outlines the specific actions we'll take over the next three years, as part of our evolving regulatory response to climate change.

The action plan also signals the stronger regulatory action we intend to take over the medium to longer term, if an increased regulatory response is required to support the NSW Government's climate change actions and commitments, including achieving net zero emissions in NSW by 2050.

Our objectives

The action plan's objectives are to:

- complement, support and build on existing and new NSW Government policy and action on climate change
- respond to the community's increasing expectation that the EPA provide a strong regulatory response to climate change
- design actions to address climate change that are aligned with the principles of ecologically sustainable development and will generate broad benefits for the economy, environment, human health and Aboriginal cultural values
- build our knowledge base to better inform our approaches to regulating the causes and consequences of climate change, within our regulatory remit, as they evolve (this includes learning from Aboriginal knowledge and perspectives)
- support our regulated community and regulatory partners to build their own understanding and capacity to address climate change, where needed
- support the proactive steps our regulated community and regulatory partners are already taking

- support our regulated community to respond to the general community's increasing expectation that it take appropriate action to address climate change
- be clear, and provide certainty where possible, about what we expect from our regulated community over the next three years with respect to climate change.

Implementation, reporting and review

This action plan covers the next three years. During that period we'll build our knowledge base to better inform how we regulate the causes and consequences of climate change, within our regulatory remit.

Many actions will be implemented in stages, and many are interdependent. This is reflected in their time frames and pathways for planning and delivery. In many cases, the detail of how we'll implement our actions – for example, the specific groups of licensees we'll focus on – will be determined and refined following detailed analysis and consultation. For all our actions we'll consider the time, cost, innovations and pathways for the regulated community to meet new requirements.

We'll partner with other agencies

To implement our actions we'll work with other areas of the NSW Government, including:

- Office of Energy and Climate Change (NSW Treasury)
- Department of Planning and Environment (DPE)
- Aboriginal Affairs NSW
- NSW Reconstruction Authority
- Department of Regional NSW (including the Department of Primary Industries)
- Transport for NSW
- Infrastructure NSW
- Investment NSW.

We've listed key partnering roles against the relevant actions in this plan.

We'll continue to partner with other NSW agencies to determine if stronger regulatory action by the EPA is required to meet the State's climate change objectives.

We'll establish a dedicated **cross-government climate change technical knowledge group** to support us as we implement our climate change actions (see **Action 2**).

How we'll report and review

We'll report on the implementation of our action plan each year in our *Annual Report*.

We'll review our policy and action plan in 2026, in line with the reporting cycles for our strategic planning and the *NSW State of the Environment* report. However, we may adjust the plan and policy earlier, if required.

We'll engage with stakeholders

We're committed to engaging with Aboriginal people, young people, relevant local communities (including disaster-affected communities), our regulated community, regulatory partners (including local government) and other stakeholders as we implement, refine and improve our climate change response. See also Section 4 of our *Climate Change Policy*.

Industry-sector advisory groups

We will establish **industry-sector advisory groups** to help guide us as we develop and implement the industry-specific climate change actions detailed in this action plan. We will invite a broad range of representatives to form these advisory groups, including representatives from industry, government and the community, and experts with relevant knowledge of the sector in question.

These advisory groups will provide us with valuable information on potential options, gaps, risks and opportunities, as we design and progress these actions. They will operate under formal governance arrangements, including terms of reference that clearly set out their roles and responsibilities, to provide clarity and certainty to the representatives and the sector on the implementation of the action plan.

2. Reading our action plan

Our action plan is structured around the three key pillars of the policy:

1	**Inform and plan:** continually improving as we listen, provide support and report
2	**Mitigate:** reducing greenhouse gas emissions
3	**Adapt:** adapting and building resilience to a changing climate

Some actions address more than one pillar. We've put those under the most relevant pillar and indicated the other pillars they address.

The co-benefits of our climate change actions

Actions designed to address climate change can also have other broad benefits for the economy, environment, human health and Aboriginal cultural values.

Environmental co-benefits include:

- improved air, water and soil quality
- improved biodiversity and ecosystem services
- greater availability of natural resources
- hazard reduction (Hamilton & Akbar 2010).

There are also co-benefits for the protection of Country and Aboriginal cultural values.

Table 1 below gives examples of co-benefits. We've marked the actions in this plan with their major co-benefits, using the icons in the table.

Some of our proposed actions will have indirect rather than direct co-benefits. Those actions (e.g. many of our 'inform and plan' actions) will help us reduce greenhouse gas emissions and exposure to climate risks over time, which will ultimately help us to better address local environmental issues such as air and water pollution. For example, monitoring and reporting on the impacts of climate change (Action 1) does not have a direct benefit for the environment and human health. However, this action will help us to be better informed and able to take further action to protect the environment, where necessary, so the benefit is indirect.

Table 1 Examples of co-benefits of climate change action

	Protection of Country and Aboriginal cultural values	Protecting a sedimentation dam from increasingly severe and frequent storms (an acute impact of climate change) reduces the risk of flood damage, water pollution and erosion. This helps to protect healthy waterways, which are important to the culture and wellbeing of local Aboriginal people.
	Air quality and health	Switching from fossil fuels to renewable electricity generation reduces greenhouse gas emissions and short-lived climate pollutants (e.g. black carbon) (see Glossary). It also reduces the emission of air pollution (such as fine particles, nitrogen oxides (NOx) and volatile organic compounds (VOCs)) and the formation of ground-level ozone, which have significant impacts on human health (e.g. cardiovascular and respiratory health) in areas located close to these sources.
	Water and soil quality	Sending less organic waste to landfill cuts greenhouse gas emissions (methane). It also means the landfill generates less leachate, lowering the risk of soil and water being contaminated. Good-quality compost made from organic waste improves soil health and helps to reduce and slow run-off.
	Biodiversity and ecosystem services[1]	Rehabilitating or extending forested areas on regulated sites sequesters carbon, reducing net greenhouse gas emissions. It also provides ground cover, improving drought tolerance and resilience to climate change. This action helps protect biodiversity and provides other ecosystem services, such as helping to reduce soil loss from erosion and improving water quality.
	Availability of natural resources[2]	'Circular economy' actions reduce greenhouse gas emissions associated with manufacturing and waste disposal. They also mean less land, water and raw materials are needed to make new products and less land is needed for landfill disposal. Recycled products made from organic waste can improve water retention in soils, reducing demand for water.
	Hazard reduction	Methane gas from landfills and mines can be used to generate electricity or heat. In the process, it is converted to carbon dioxide – a greenhouse gas but a less potent one than methane. Extracting the highly flammable methane for use rather than leaving it in situ also reduces the risk of explosions.

Sometimes we may also need to consider and minimise potential environmental trade-offs or disbenefits. For example, the widespread uptake of solar panels and large batteries reduces greenhouse gas emissions – a significant benefit. However, it also generates more electronic waste (e-waste). This e-waste has to be carefully managed to avoid adverse environmental impacts.[3]

1 Ecosystem services: e.g. clean air, water, and food **(see Glossary)**.

2 Natural resources: e.g. soil, land and water resources; biological resources; mineral and energy resources (see **Glossary**).

3 E-waste is addressed in the *NSW Waste and Sustainable Materials Strategy* (DPIE 2021b), under the key focus area 'Meeting our future infrastructure and service needs'.

Elements of our regulatory approach

Our action plan uses all eight elements of our regulatory approach (EPA 2021a) to help mitigate greenhouse gas emissions and make NSW more resilient and adapted to a changing climate. These elements are shown in **Figure 1** below. For each of the actions in this plan, we've identified which regulatory elements are being used.

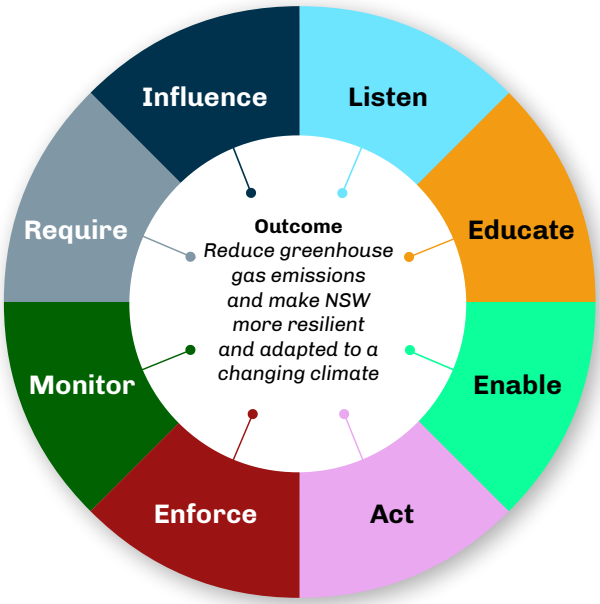

Figure 1 The EPA uses all elements of its regulatory approach to address climate change

Note: The elements of our regulatory approach are described in our *Regulatory Strategy* (EPA 2021a).

Time frames for delivering our actions

Our action plan spans three years. Some actions will be delivered earlier, some later, and some will be ongoing. We've used icons to indicate these **delivery time frames:**

⟩⟩⟩	**Year 1:**	< 12 months
⟩⟩⟩	**Year 2:**	12–24 months
⟩⟩⟩	**Year 3+**	+ 24–36 months or more
↻	**Ongoing**	

Our delivery time frames are based on our current understanding of the effort and resources that will be needed to implement each action. We'll refine and provide more detailed time frames for our actions as we implement our climate change policy and action plan, in consultation with our stakeholders.

Our actions will be staged

The climate change policy landscape is complex and evolving and many of our licensees are already forging ahead of mandated requirements. It is important that we step into the regulatory space in a way that is deliberate, systematic, well-informed and properly paced.

This is why we are implementing our climate change actions in a staged way (see **Figure 2** below). This staged approach will help us achieve the best environment and human health outcomes, while working together with our regulated community as we transition to a low carbon economy. It will give our regulated community time to consider and respond to new information, to plan and to adjust to new obligations. This staged approach will also provide greater certainty to industries regulated by the EPA and enable the EPA to work with them to minimise potential compliance costs.

For example:

- We will listen, learn and gather information from our environment protection licensees, including the proactive work of industry leaders (see **Action 5(a)**). This will help us understand what our licensees are already doing to reduce greenhouse gas emissions and adapt to climate change impacts.
- Based on feedback from industry and our analysis and research, we will then progressively set feasible, evidence-based emission reduction targets for key industry sectors we license (or parts of them as needed) and provide guidance as to how the targets can be attained (see **Action 16**).
- We will then progressively require industry to prepare and implement climate change mitigation and adaptation plans (CCMAPs) (see **Action 5(b)**). These plans will complement NSW Government policies and programs that are supporting adaptation and the transition to a de-carbonised economy.

- We will then move to progressively placing other requirements on licences (see Action 18). The requirements will be designed in consultation with industry, consider what is reasonable and feasible, and include transitional provisions. Requirements are likely to be different for new licensees and existing licensees.
- **Figure 2** indicates the stages and examples of key work involved in each stage. The timing of each step may differ depending on the sector, emission source or type of climate risk the EPA is working with and focusing on.

Figure 2 The EPA's climate change actions will be staged, progressive and iterative – allowing time for licensees to adjust and for data to inform what actions must be taken and where

Listen and gather information	Set targets and provide guidance	Enable and require	Require improved performance
• Survey licensees • EPA research and analysis	• Set emission reduction targets for key industry sectors • Provide climate change mititgation and adaptation guidance	**Existing licensees** • Emissions benchmarking against guidance • CCMAPs **New licensees** • Ensure best practice • CCMAPs • limits and requirements	**Existing licensees** • Range of tools to require performance e.g. PRPs **New licensees** • Ensure best practice • CCMAPs • limits and requirements

Note: CCMAPs = climate change mitigation and adaptation plans; PRPs = pollution reduction programs

Measuring our success

We've set key performance indicators or expected deliverables for each action to help us track our progress. We'll review progress against our actions each year in our *Annual Report*.

Our action plan

The next three chapters set out our actions to deliver on the objectives of the policy. The actions are also summarised in tables in the Appendix, along with the relevant policy pillars, environmental co-benefits, regulatory elements, delivery time frames and key performance indicators/deliverables.

3. Action plan pillar 1: **Inform and plan**

Reliable, high-quality information and planning are critical for establishing and maintaining an effective climate change response and improving over time. Actions in this area include determining baselines, assessing risks, promoting good practices, measuring success, reporting in a transparent way, providing advice, and improving in response to new evidence and stakeholder feedback.

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What is the NSW Government already doing?		13
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Action 8	Prepare an annual EPA statement on climate change impacts, risks and adaptation to better understand and prepare for the impacts of climate change on our operations	25
Action 9	Report on the progress of our action plan in our *Annual Report*	24

What is the NSW Government already doing?

The NSW Government has a comprehensive plan for addressing climate change, based on sound science and including the latest available climate projections and emissions modelling. The NSW **Climate Change Policy Framework** (OEH 2016), **Net Zero Plan** (DPIE 2020) and **Climate Change Adaptation Strategy** (NSW Government 2022) are central components of the Government's climate change response.

- Implementation updates have been published for the Net Zero Plan: The **Net Zero Plan Stage 1: 2020–2030 Implementation Update** (DPIE 2021) and the **Net Zero Plan Implementation Update 2022** (OECC 2022). These documents give a detailed update on the Net Zero Plan and other key achievements. These include NSW Government objectives to reduce emissions by 50% below 2005 levels by 2030 (DPIE 2021), and 70% below 2005 levels by 2035 (OECC 2022). These objectives are supported by the emission reductions to be delivered by the Net Zero Plan and broader decarbonisation trends in the NSW economy.
- The **NSW Climate Change Adaptation Strategy** sets out the NSW Government's strategic approach for managing the impacts of climate change on the State.
- The **NSW State of the Environment 2021** report (EPA 2021c) provides an overview of NSW Government responses to climate change, including information on the implementation and effectiveness of the NSW Net Zero Plan (see 'Climate change', 'Greenhouse gas emissions' and 'Net Zero Plan' topics).

The Government is also currently preparing:

- a State Resilience Strategy, which will provide strategic direction on embedding disaster resilience across NSW, from prevention through to recovery. The strategy will also outline priority actions for government in terms of building disaster resilience across NSW
- a Sustainable Finance Framework, which will ensure the NSW Government's financial activities are aligned with its environmental and social priorities.

Existing actions the EPA will continue and strengthen

Action 1 Monitor and report on the impacts of climate change, greenhouse gas emissions and the implementation and effectiveness of the NSW Net Zero Plan, in NSW State of the Environment reports

The EPA is responsible for informing the public about the condition of the NSW environment and the Government's response through the *NSW State of the Environment* (SoE) reports, which are produced every three years. The **SoE** 2021 report (EPA 2021c) gives an overview of the impacts of climate change and the NSW Government's response, under the **Climate and Air** theme. It has information on the implementation and effectiveness of the NSW Net Zero Plan, including emissions reduced (and how much more they could be reduced in the future), and the effect of the Net Zero Plan on the economy.

Appendix A of our *Climate Change Policy* contains a brief summary of the key information contained in the SoE 2021 report, on the causes and consequences of climate change in NSW.

We'll continue to provide this information in SoE reports until 2030, as required by the *Net Zero Plan Stage 1: 2020–2030*.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
	Indirect	Monitor Educate		**Deliverable** • EPA includes information on the impacts of climate change in NSW, greenhouse gas emissions and the implementation and effectiveness of the Net Zero Plan Stage 1, in all *NSW State of the Environment* (SoE) reports up to 2030.

Action 2 Engage and collaborate with climate change experts across the NSW Government, and with other jurisdictions, as the EPA develops and implements its climate change actions

The EPA will continue to draw on the expertise of climate change policy and technical experts across government as it develops and implements its climate change approach. These experts are located within NSW Government agencies such as the Office of Energy and Climate Change, the Department of Planning and Environment, the Department of Regional NSW, NSW Health, Transport for NSW, the NSW Reconstruction Authority and the Department of Premier and Cabinet.

To strengthen this approach, we will establish a dedicated **cross-government climate change technical knowledge group** to better support the EPA implement its climate change actions, where required.

The NSW EPA regularly engages with other jurisdictions on a range of issues, both formally and informally. We are active members of the **Heads of EPA Australia and New Zealand** (HEPA) and the **Australasian Environmental Law Enforcement and Regulators neTwork** (AELERT).

We'll continue to collaborate with our colleagues in HEPA and AELERT on climate change, to share learnings and align approaches, where appropriate. We'll also continue to engage with other relevant Commonwealth and state agencies.

In particular, we will work closely with our NSW and Commonwealth Government colleagues to ensure our climate change approaches complement (and do not conflict with or duplicate) actions already taking place under the *NSW Net Zero Plan*, and any actions being taken by the Commonwealth Government, especially the **Safeguard Mechanism**. Licensees will not be required to report the same information twice.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
	Indirect	Listen Enable Influence		**Deliverables** • EPA has engaged with climate change experts within relevant NSW Government agencies to inform the implementation of its climate change actions • EPA has established a dedicated cross-government climate change technical knowledge group • EPA has engaged with HEPA and AELERT and liaised with other relevant agencies, on climate change approaches.

Action 3 Monitor emerging issues, trends, risks and opportunities surrounding the issue of climate change and the transition to a decarbonised economy

Worldwide, industry is evolving rapidly as part of the transition to a decarbonised economy and a changing climate. Regulatory approaches are also changing in response.

We'll continue to scan the horizon, keeping abreast of emerging issues and trends so we're prepared for the opportunities and regulatory challenges they will pose. As part of this process we'll continue to consider the work of other jurisdictions, other NSW Government agencies, local government, industry and the private sector. These scans will be ongoing and at least annual.

We'll also partner with relevant NSW Government agencies to investigate establishing an environment and climate data insights centre. Such a centre could better harness evidence-based and intelligence-led data and insights and so enhance our climate change decisions and actions.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
	Indirect	Monitor Educate Enable		**Deliverable** • EPA has carried out an annual climate change horizon scan. **KPI** • EPA is incorporating learnings into its regulatory response to climate change.

New actions we'll take over the next three years

Action 4 Support EPA officers to make climate-change-related decisions

We are committed to embedding climate change considerations explicitly and transparently into our decision-making processes.

We make decisions across the full breadth of our regulatory activities, for example when we:

- progress legislative reforms
- review or develop new policies, guidelines and strategies that deliver the EPA's regulatory objectives and government policy objectives
- provide approvals and advice on strategic and project-level planning matters

- regulate various activities through regulations, licensing, notices, orders and other regulatory instruments
- take compliance and enforcement actions
- provide programs, grants and other assistance to businesses and communities.

We also make decisions related to our internal activities – about, for example, procurement, human resources and travel. When we make these decisions, we'll aim to minimise our greenhouse gas emissions and exposure to climate-related risks. (See also the related Action 8.)

As we work through the actions in this plan, we'll prepare a suite of training and guidance materials that will help EPA officers consider climate change in their decision-making. We'll build on our decision-making framework over time, as our regulatory response evolves and as we improve our knowledge, skills and experience about the most efficient and effective ways to integrate climate change considerations into our decisions and operations.

This will involve:

- **updating existing EPA guidance and training** – e.g. we'll update our internal guidance for officers that explains the factors they must consider when making licensing decisions,[4] to ensure climate change issues are considered
- **adopting and/or adapting existing external guidance and training** – e.g. the NSW Government has developed a *Climate Risk Ready NSW Guide* and course (DPIE 2021a) to assist NSW Government agencies consider and adapt to climate impacts; we're already participating in this program and it will inform our annual *Climate Change Impacts, Risks and Adaptation Statements* (see Action 8)
- **developing new guidance and training** – e.g. we'll prepare guidance and training for EPA officers to help them determine appropriate greenhouse gas emission limits and/or other metrics and requirements for environment protection licences (see Action 17).

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
	Indirect	Enable Act		**Deliverable** • EPA has identified and prioritised guidance and training it needs to prepare for officers. **KPI** • The proportion of identified high-priority documents that has been prepared.

4 Section 45 of the *Protection of the Environment Operations Act 1997* (POEO Act) sets out a range of matters the EPA must consider, where relevant, when exercising its licensing functions under Chapter 3 of the POEO Act. The EPA's obligation to consider these matters extends to the causes and consequences of climate change (see EPA *Climate Change Policy*, Box 3, p15).

Action 5 Require and support our regulated community to develop and implement plans to minimise emissions and exposure to climate risks

Why we want to work more closely with our regulated community on climate change

The EPA will be seeking climate-related information from its licensees and requiring them to make and implement plans. This will allow us to:

- raise our licensees' awareness and ensure they have identified their main sources of emissions and their exposure to climate risks
- ensure licensees are actively considering how to reduce emissions and their exposure to climate risks, and are acting on the findings
- ensure licensees are being transparent about what they are doing – to better inform the community
- address information gaps
- develop fit-for-purpose regulatory approaches that are evidence-based, practical, reasonable, feasible and appropriately paced.

Action 5(a) Focus our regulatory effort by first listening to our regulated community, so we understand the climate change actions already being taken

To ensure we are an outcomes-focused and service-oriented organisation, we will work collaboratively with our regulated community to influence and enable appropriate environmental outcomes.

We recognise that there will be some significant differences between types of activities, individual operators and different sites that we regulate. For example:

- some activities emit more greenhouse gases than others
- some sources of greenhouse gas emissions are easier to abate than others (due to technological and other factors)
- some sites are more exposed to the impacts of climate change than others (and may require additional support with adaptation planning)
- many in our regulated community are already taking action to reduce their greenhouse gas emissions and adapt to climate change.

We'll start by focusing on our environment protection licensees and public authorities that we regulate (e.g. State-owned corporations, local councils). We'll:

- **survey our licensees** so we understand the climate change actions they are taking (we'll develop this survey in consultation with dedicated **industry-sector advisory groups** (see Section 1), DPE and other relevant agencies)
- **assess** this information to determine where we should focus our regulatory effort.

We'll ask our licensees to tell us, via a mandatory survey, how they are contributing to the NSW Government's climate change objectives. We'll also ask how we can support them to build capacity to take meaningful action. We'll use the opportunity to educate our licensees about information and assistance that is already available to them through existing government programs. The survey will be mandatory to ensure we get a timely response from all our licensees.

We'll use this information to determine when and where we should focus our regulatory effort, provide support and build on this action plan: for example, we'll determine which licensed sectors have the greatest scope to reduce emissions, and/or their exposure to climate risks.

We'll also consider how best to work with other members of our regulated community (e.g. managers of contaminated sites).

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
	Indirect	Listen Influence		**Deliverable** • EPA has completed the licensee survey, analysed the results and determined when/where to focus its regulatory effort and support for licensees.

Action 5(b) Progressively require and support our licensees to prepare, implement and report on climate change mitigation and adaptation plans

We'll progressively require our environment protection licensees to prepare and implement climate change mitigation and adaptation plans (CCMAPs) and to report on the effectiveness of their plans over time.

We will initially be focusing on our licensees because:

- they are the largest source of greenhouse gas emissions within our regulatory remit
- their premises and activities pose greater risks to the environment if the impacts of climate change are not adequately considered.

Using this CCMAP approach, we'll ensure our licensees demonstrate that they have considered how they can minimise their greenhouse gas emissions and exposure to climate risk. We'll consider the best way to leverage behavioural change approaches to support this requirement (see **Action 5(d)** and **Action 12**).

We'll require CCMAPs (or sections of them) to be published on corporate websites, including progress updates. This is similar to the existing requirement for licensees to publish sections of their pollution incident response management plans (PIRMPs) and in many cases commonplace in corporate annual reporting. This approach ensures transparency and provides an incentive for licensees to remain accountable to their public commitments, while reducing duplicative data capture and reporting obligations.

We'll also consider using licence conditions to explicitly require practical mitigation and adaptation actions identified in CCMAPs to be implemented. We'll consult with dedicated **industry-sector advisory groups** (see **Section 1**) to ensure that our approach is reasonable (including recognising that changes take time to plan and implement) and does not discourage our licensees from being progressive in the practical actions they propose to take.

Guidance for preparing CCMAPs

We'll develop an EPA guideline for preparing CCMAPs, including templates, to support our licensees to develop, implement and report on these plans. We'll co-design the guideline with relevant agencies and our licensees to ensure it is fit for purpose, does not duplicate existing requirements and allows comparable information to be provided, where appropriate. We'll also consider whether additional tools or resources (e.g. climate projections) are needed to help our licensees to understand their climate change obligations generally, including the requirement for CCMAPs.

We know that some of our regulated community already have similar types of plans in place, such as greenhouse gas management plans (required by DPE Planning for some significant developments), or statements about an organisation's exposure to climate-related risks (known as TCFD Statements)[5]. Our guideline will recognise these types of plans and statements to avoid duplication and help our licensees to identify any gaps. CCMAPs may form part of a broader plan, such as an environmental management plan.

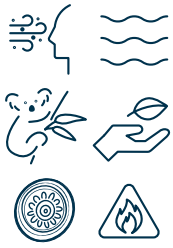
Staged implementation

The requirement for developing CCMAPs may need to be implemented in a staged way. We'll consider whether transitional measures are needed to minimise the regulatory burden on our licensees, particularly smaller businesses. We'll also evaluate the effectiveness of the CCMAP approach and identify any required improvements.

Benefits of CCMAPs

Our CCMAPs approach will:

- allow our regulated community to adopt approaches most suitable to their site/operations
- help inform our evolving climate change response
- increase transparency as our regulated community publicly commits to certain actions
- help identify good performance and lift standards across the board.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
		Require Listen Enable Influence		**Deliverables** • EPA has developed a CCMAP guide and tested its usefulness • EPA has evaluated the CCMAP approach and has identified any required improvements. **KPIs** • Proportion of licensees with appropriate CCMAPs (or similar) • Proportion of licensees that report that the process of developing CCMAPs (or similar) has encouraged and assisted them to reduce their emissions and/or exposure to climate risks • EPA is responding to all requests from licensees for additional support • EPA is tracking licensees' reported progress against their CCMAP commitments.

5 A statement consistent with the framework established by the Task Force on Climate-related Financial Disclosures

Action 5(c) Partner with DPE to seek to ensure climate change is being adequately addressed by proponents of activities we'll regulate, and that approvals contain appropriate conditions

We'll partner with DPE, to seek to ensure that climate change mitigation and adaptation has been adequately considered as part of all planning proposals for activities we'll regulate, and that proponents are bound by appropriate performance requirements. Together we'll:

- develop climate change guidance and place-based policies to support the planning approvals process, including guidance and advice for other consent authorities and businesses
- require and support proponents to adequately consider climate change in their applications
- develop appropriate climate change conditions for development approvals.

We will also engage with our **cross-government climate change technical knowledge group** (see Action 2) as we progress this action.

Developing climate change guidance and place-based policies to support the planning approvals process, including guidance and advice for consent authorities and businesses

We'll partner with DPE to develop materials to support EPA officers, DPE Planning officers, other consent authorities (including local councils) and proponents to adequately consider climate change mitigation and adaptation for proposed activities that we will ultimately regulate.

As an early step, we'll partner with DPE, Infrastructure NSW and the Office of Energy and Climate Change (OECC) to adopt consistent carbon reporting requirements for public infrastructure projects via policy or regulatory instruments and work towards future carbon intensity targets (see **Box 1** below).

Box 1 Reducing embodied emissions in the delivery of public infrastructure

The EPA is working with Infrastructure NSW on opportunities to decarbonise government infrastructure. The intention is to reduce embodied emissions in the delivery of public infrastructure across the planning, design and construction phases.

The term 'embodied emissions' (also known as 'embodied carbon') refers to the carbon footprint of a building or infrastructure before it is operational: that is, the greenhouse gas emissions created during the manufacturing of construction materials, the transport of materials to the site, and construction.

It is expected a policy will be prepared to address the current absence of a clear mandate and lack of incentives for agencies and delivery partners, which has been a key barrier to reducing embodied emissions in infrastructure construction to date.

The principles seek to bring a consistent approach to measuring and managing embodied emissions in public infrastructure.

To support this process, the EPA will work with DPE, Infrastructure NSW, OECC, and any other partner agencies to determine the appropriate policy and regulatory framework for emissions reduction for the whole infrastructure sector. This will initially focus on the measurement and reporting of embodied emissions before the development of targets.

Requiring and supporting proponents to adequately consider climate change in their applications

We'll partner with DPE to require proponents of activities we'll regulate to consider how they'll contribute to the NSW Government's net zero targets and resilience goals (see Glossary).

DPE Planning already requires some development applications to consider their potential greenhouse gas emissions as part of the environmental impact assessment process.

For example, proponents of development applications assessed under the State Environmental Planning Policy (Resources and Energy) 2021 are required to demonstrate that the development will minimise greenhouse gas emissions to the greatest extent practicable. This has often resulted in consent conditions that require the proponent to develop greenhouse gas management plans.

We'll work with DPE to build on this existing process so that it applies to all activities we'll regulate, and also addresses climate change adaptation.

We'll ensure climate change is adequately reflected in environmental assessment requirements. Proponents will also be able to consider climate change mitigation and adaptation guidance developed or identified by the EPA (see Actions 17 and 24).

Climate change mitigation and adaptation plans (CCMAPs)

Proponents will be required to develop and commit to implementing CCMAPs for their proposed operations (see Action 5(b) for a description of CCMAPs). This requirement will also apply to significant variations to existing developments.

CCMAPs developed in the planning approvals process will serve a slightly different purpose to CCMAPs for existing environment protection licensees. The CCMAP for the licence will focus on the operational stage of the project and the ongoing performance of the activity (i.e. minimising emissions and exposure to climate risk). In the planning process, CCMAPs will also consider how the development proposal itself can be modified to achieve the best outcomes.

CCMAPs will also allow proponents to demonstrate that they have considered contingency measures, should additional greenhouse gas mitigation measures be required once operational. These might be needed, for example, if proof of performance monitoring demonstrates that a licensed premises is producing more greenhouse gas emissions than predicted in their environmental impact assessment or allowed for in their consent and licence. We take a similar approach for other regulatory purposes to ensure mitigation of impacts is fit for purpose, practical and cost-effective.

Developing appropriate climate change conditions for development approvals

We'll partner with DPE to develop appropriate climate change mitigation and adaptation conditions for development approvals for activities we'll ultimately regulate. This will include working towards the development of greenhouse gas emission limits and other requirements (see Action 18) once mitigation and adaptation guidance has been developed or identified for a sector (see Actions 17 and 24).

This action will help ensure proponents are contributing to the State's net zero targets and goal of making NSW more resilient and adapted to a changing climate. It will also provide mechanisms for climate change requirements to be reviewed and revised as best-practice control technology evolves.

As an early step, we'll partner with DPE and OECC to provide regulatory frameworks to support government policy and ensure net zero emission objectives for firming infrastructure are achieved beyond the life of a Long Term Energy Service Agreement under the *Electricity Infrastructure Investment Act 2020*. See Box 2 below.

Box 2 Requiring net zero emissions from new electricity infrastructure

The Electricity Infrastructure Roadmap (DPIE 2020a) is the State's landmark energy policy designed to transition NSW's current electricity generation capacity to renewables.

We'll work with OECC and DPE to provide additional regulatory support for new electricity generation projects. This will include new **firming infrastructure**, which is designed to support the transition to renewables in NSW.

We're likely to use existing regulatory frameworks, including environment protection licences, to support the NSW Government's net zero objectives. Our focus will be on both the development application and the operational phases of the activity.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
		Influence Require		**Deliverables** • EPA has developed climate change guidance and policies to support the EPA's input into the planning process • EPA has provided advice to DPE Planning to improve how proponents consider climate change in their applications. **KPI** • Proportion of development applications for activities the EPA will regulate, where the EPA has provided climate-change-related advice to DPE Planning.

Action 5(d) **Require and support all our licensees to specifically consider how a changing climate might increase their risk of pollution incidents, and require them to update their pollution incident response management plans accordingly**

We'll work with our environment protection licensees to ensure that their pollution incident response management plans (PIRMPs) are progressively updated to consider climate-related risks.

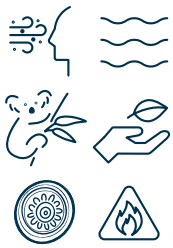
A PIRMP is a document that licensees prepare to describe the procedures they have in place to minimise the risk of pollution incidents and ensure they are appropriately prepared to respond. PIRMPs must be prepared in accordance with section 153A of the *Protection of the Environment Operations Act 1997*. Our PIRMP Guideline (NSW EPA 2019) requires licensees to consider the potential for incidents due to severe weather events and natural disasters (such as dust storms, floods, bushfires); however, there is no explicit requirement to consider their exposure to climate risks.

With climate change, severe weather events may become more common, prolonged and severe in some areas, which can lead to significant air pollution events (e.g. from bushfires and dust storms) and water pollution events (e.g. from floods). These are the **acute impacts of climate change** (see also **Glossary**).

Chronic impacts of climate change such as sustained high temperatures, sustained low or high rainfall and sea level rise (see also **Glossary**), also need to be considered. They too can lead to pollution incidents and longer-term impacts: for example, increasing temperatures lead to increases in ozone and secondary particle ($PM_{2.5}$) formation, reducing air quality.

We'll work with our licensees to ensure that all PIRMPs are progressively updated to consider all relevant climate risks. We'll update our PIRMP Guidelines and ensure our licensees have access to available tools and other guidance to help them assess their exposure to climate risks. We'll consider the best way to incorporate behavioural change approaches along with this requirement, targeting both adaptation and resilience.

There are commonalities between PIRMPs and the climate change mitigation and adaptation plans (CCMAPs) that are now required (see **Action 5(b)**). However, PIRMPs are a specific legal requirement for licensees to help minimise the risk of pollution incidents generally (i.e. they are not climate change specific) and they need to be self-contained. We'll ensure strong links between the PIRMP and CCMAP processes, streamlining the processes where possible, to avoid any unnecessary duplication of effort.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
		Require Enable Enforce		**Deliverable** • EPA has updated the PIRMP Guidelines. **KPI** • Proportion of licensees with PIRMPs that explicitly consider climate change impacts.

Action 6 Listen to and learn from Aboriginal people; create opportunities to meaningfully engage and receive feedback on our climate change response

The EPA is committed to incorporating Aboriginal knowledge and perspectives into our work and in important environmental issues by building relationships with Aboriginal people and working to maintain these relationships for the long term (EPA 2021). We want to ensure that our climate change response respects and aligns with NSW Aboriginal people's cultural values and responsibilities for protecting Country as well as the **EPA's Statement of Commitment to Aboriginal People of NSW**.

To put this commitment into action, we'll actively listen to Aboriginal people, considering and incorporating their cultural values and knowledge into our climate change response. Our engagement will be guided by Aboriginal people to ensure we're working in respectful partnership, consistent with the NSW Government's commitment under the **National Agreement on Closing the Gap**. While doing this, we will ensure Aboriginal knowledge, science and Indigenous cultural and intellectual property is protected, in line with our Statement of Commitment.

As an example, the EPA has worked in a respectful partnership with the Aboriginal People's Knowledge Group to embed the input and perspectives of Aboriginal people into our 2021 SoE report. Further, as part of realising our Statement of Commitment, we have started work to include Aboriginal people's voices, knowledge and perspectives in all areas of the EPA's activity.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
		Listen		**Deliverables** EPA has: • consulted with Aboriginal people to meaningfully engage on the EPA's climate change response • sought feedback directly from Aboriginal people on the quality of this engagement • developed a plan for future engagement based on feedback and any actions arising from the initial consultation.

Action 7 Regularly discuss our climate change approach with the EPA's Environment Youth Advisory Council, to ensure we're putting intergenerational equity into practice

The EPA is committed to listening to young people as we seek to improve our climate change responses now and into the future. We'll seek their views, look to address their concerns and provide opportunities for them to provide their ideas and to get more involved. We'll also report on what we heard and how we're responding.

We'll initially provide these opportunities through the EPA's Environment Youth Advisory Council. We have established this council to seek input from young people aged 15–22 years on a range of environmental issues and to hear their views to help inform our Youth Engagement Strategy. The council consists of 12 members with diverse backgrounds from all over NSW. Our inaugural council members come from areas across NSW including Northern Sydney, Western Sydney, inner Sydney, Blue Mountains, Young, Albury, Mudgee and the Central Coast.

We'll formally give the council information about our climate change response and seek its advice every six months. We'll also seek its advice about other ways that young people can get involved in helping us to address climate change.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
	Indirect	Listen		**Deliverables** EPA has: • engaged with its Environment Youth Advisory Council on its climate change response • sought feedback from the council on the quality of this engagement • developed a plan for future engagement based on feedback.

Action 8 Prepare an annual EPA statement on climate change impacts, risks and adaptation to better understand and prepare for the impacts of climate change on our operations

Under the Net Zero Plan Stage 1: 2020–2030 Implementation Update we are committed to preparing a pilot EPA statement on climate change impacts, risks and adaptation, consistent with the framework established by the Task Force on Climate-related Financial Disclosures (TCFD) or other evolving best practices. This statement will inform our stakeholders of the economic, financial and physical impacts of climate change on our own operations, including risks and opportunities under various climate scenarios.

We'll publish this pilot statement alongside our 2021–22 *Annual Report*. This may help other NSW Government regulators prepare their own statements.

We'll prepare an EPA statement on climate change impacts, risks and adaptation each year. We'll use the information we collect for preparing the statement to improve our climate change response over time.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
	Indirect	Educate Influence		**Deliverable** • EPA has prepared annual climate change impacts, risk and adaptation statements consistent with the TCFD framework or other evolving best practices.

Action 9 Report on the progress of our action plan in our *Annual Report*

We're committed to reporting on our progress towards achieving the climate change outcomes we've set out in our *Strategic Plan* (EPA, 2021). We'll provide a summary of the progress we are making on our action plan in our *Annual Report*, which summarises our activities and performance for each financial year. We'll also provide an update on how we are progressing with the staging of our actions and where we are intending to focus our efforts for the year ahead.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
	Indirect	Monitor Educate		**Deliverable** • EPA provides a summary of progress on its action plan, within its *Annual Report*.

4. Action plan pillar 2: **Mitigate**

Mitigate

Climate change mitigation is about taking action to reduce the rate of climate change. This includes actions that limit or prevent greenhouse gas emissions and activities that remove these gases from the atmosphere.

The build-up of greenhouse gases in the atmosphere since the beginning of the industrial age is causing our climate to change with potentially serious consequences. These changes are now being acutely felt.

The levels and trends in greenhouse gas emissions in NSW are described in the **Greenhouse Gas Emissions** topic of the EPA's **NSW State of the Environment (SoE) 2021** report. In addition, the **Net Zero Plan Stage 1: 2020–2030** topic provides an update on the status of the various initiatives under the NSW Government's Net Zero Plan, outlines how key sectors are being transformed, and tracks performance across the plan's priority areas.

Appendix A of our *Climate Change Policy* provides a summary of the causes and consequences of climate change in NSW, as described in our SoE 2021 report under the **Climate and Air** theme.

The EPA is committed to working with its regulated community, especially environment protection licensees, to help ensure that the community is making fair and reasonable contributions to the State's **net zero targets** (see **Glossary**).

Our licensees are the largest source of greenhouse gas emissions within our regulatory remit. **Figure 2** in our *Climate Change Policy* provides an overview of the main sources of greenhouse gas emissions in NSW and a description of the relative amount covered by the EPA's regulatory remit.

We've already been encouraging some of our licensees to proactively reduce their greenhouse gas emissions. We'll expand our efforts, working with all of our licensees and our broader regulated community to reduce their emissions.

In this section we describe new and continuing actions that complement and build on the actions described under **Inform and plan** (Section 3).

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Existing actions the EPA will continue and strengthen		29
Action 10	Develop and implement programs to reduce greenhouse gas emissions from the waste sector, including our target of net zero emissions from organic waste from landfills by 2030	29
Action 11	Support the whole-of-government approach to streamlining project approvals in renewable energy zones	29
Action 12	Develop and implement tailored behavioural change programs to encourage and enable greenhouse gas emission reductions	30
Action 13	Ensure methane emissions from EPA-licensed onshore gas operators are minimised; review existing leak detection and repair programs	30
Action 14	Regulate short-lived climate pollutants from our licensees	31
Action 15	Lead by example, maintaining efforts to become a carbon-neutral organisation by 2030	31
New actions we'll take over the next three years		32
Action 16	Develop a series of greenhouse gas emission reduction targets and related pathways for key industry sectors we license, to help guide our regulatory effort	32
Action 17	Prepare or adopt climate change mitigation guidance for key industry sectors we license, including the performance outcomes we seek	38
Action 18	Progressively place greenhouse gas emission limits and other requirements on licences for key industry sectors	38
Action 19	Encourage and support our regulated community to innovate	39

What is the NSW Government already doing?

Under the **Net Zero Plan**, the **Net Zero Plan Stage 1: 2020–2030 Implementation Update** and the **Net Zero Plan Implementation Update 2022**, the NSW Government is committed to reducing greenhouse gas emissions in NSW. The State's **net zero targets** are:

- a 50% reduction in emissions (compared to 2005 levels) by 2030
- a 70% reduction in emissions (compared to 2005 levels) by 2035
- net zero emissions by 2050.

These commitments are being achieved through a variety of strategies and programs, such as the Net Zero Plan itself, the **Electricity Infrastructure Roadmap**, the **NSW Waste and Sustainable Materials Strategy** (DPIE 2021b) and the **Hydrogen Strategy** (DPIE 2021c).

Our **SoE 2021 report** provides more detail about these and other mitigation initiatives (see the 'Responses' under the 'Greenhouse gas' topic, and the 'Net Zero Plan' topic).

The NSW Government is also working to ensure emerging technologies needed to decarbonise hard-to-abate sectors of the economy are given the necessary support to become scalable, replicable and cost-effective. Innovation programs it is supporting include:

- the **Net Zero Industry and Innovation Program** (DPIE 2021d)
- **Coal Innovation NSW**
- the **Decarbonisation Innovation Hub**
- **Sustainability Advantage**.

Our **SoE 2021** report gives more detail about these and other innovation initiatives (see 'Status of initiatives' under the 'Net Zero Plan' topic).

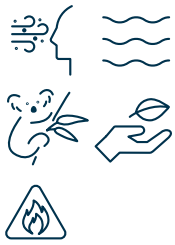
Existing actions the EPA will continue and strengthen

Action 10 Develop and implement programs to reduce greenhouse gas emissions from the waste sector, including our target of net zero emissions from organic waste from landfills by 2030

The EPA is responsible for delivering on the NSW Government's commitment to achieve **net zero emissions from organic waste from landfills by 2030**, under the **Net Zero Plan**. This commitment was also reaffirmed in the **NSW Waste and Sustainable Materials Strategy 2041** (WASM).

Under the WASM, we are also committed to implementing a range of other waste-focused programs and initiatives that help reduce greenhouse gas emissions. We've described how we'll do this in our **Waste Delivery Plan** (EPA 2021d). In addition to diverting organics from landfill, our delivery plan includes specific actions and time frames for increasing the uptake of landfill gas capture and waste-derived biogas, creating a carbon-negative waste sector, enabling a circular economy and encouraging business recycling.

We are also continuing programs to re-use coal ash from power generation and encourage material substitution in manufacturing and construction, our **Organics Infrastructure Fund**, and our **Bin Trim** and **Love Food Hate Waste** programs.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
CO_2 i		Act Influence Educate Enable		**KPI** • The amount of organic waste sent to landfill per year (and associated emissions) is on track to meet the target of net zero by 2030.

Action 11 Support the whole-of-government approach to streamlining project approvals in renewable energy zones

The NSW Government is investing in the development of renewable energy zones (REZs). REZs are modern-day power stations. They combine renewable energy generation such as wind and solar, storage such as batteries, and high-voltage poles and wires, to deliver energy to homes, businesses and industries. The NSW Government's **Electricity Strategy** (DPIE 2019) and **Electricity Infrastructure Roadmap** set out a plan to deliver the State's first five REZs in the Central–West Orana, New England, South–West, Hunter–Central Coast and Illawarra regions.

The EPA will continue to support a whole-of-government approach to streamlining the project approval process for low or zero emissions projects, or renewable energy projects, in these zones.

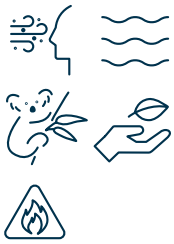
Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
CO_2 i		Influence Enable		**Deliverable** • EPA has contributed to the whole-of-government approach to streamlining project approval processes in REZs.

Action 12 Develop and implement tailored behavioural change programs to encourage and enable greenhouse gas emission reductions

Behavioural change programs use behavioural insights to foster behaviours that will reduce emissions. Programs can be tailored to specific groups, sectors or regions.

The EPA runs successful behavioural change programs, for example for reducing food waste. The Scrap Together food organics and garden organics (FOGO) education campaign is helping households divert more food waste for recycling, and reducing contamination to ensure a cleaner waste stream. Sending less organic waste to landfill can cut greenhouse gas emissions. We've described how we're doing this in our Waste Delivery Plan.

To strengthen our work, we'll look for opportunities to develop and implement new behavioural change programs to complement voluntary or mandatory emission reduction activities. We'll also consider the best way to incorporate behaviour change approaches into our requirements for climate change mitigation and adaptation plans (see Action 5(b)).

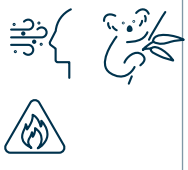
Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
		Educate Enable Act		**Deliverable** • EPA has determined and prioritised the behavioural change programs it needs to develop. **KPI** • The proportion of identified high-priority programs that has been developed.

Action 13 Ensure methane emissions from EPA-licensed onshore-gas operators are minimised; review existing leak detection and repair programs

The EPA requires its onshore-gas environment protection licensees that have gas reticulation systems, including wellheads and gas gathering lines, to undertake effective leak detection and repair (LDAR) programs, using best available leak detection technology. This helps minimise methane emissions as far as practicable.

To strengthen our approach, we'll review our licensees' LDAR programs to see how they can be improved. We'll:

- consider extending the program to cover other components of the gas reticulation system (e.g. including wellheads)
- consider increasing the inspection frequency (e.g. from six-monthly to three-monthly)
- investigate using additional, innovative monitoring methods such as satellite imagery and drones, which will enable leak detection to be performed more frequently and at less expense.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
		Monitor Act Require Enforce		**Deliverable** • EPA has reviewed its licensees' LDAR programs and identified actions for improving them.

Action 14 Regulate short-lived climate pollutants from our licensees

Short-lived climate pollutants (SLCPs) contribute to global warming (see Glossary). They include black carbon (air particulates that are products of combustion), methane, ground-level ozone (the main ingredient in smog) and hydrofluorocarbons. Carbon monoxide (CO), nitrogen oxides (NOx) and volatile organic compounds (VOCs) do not directly contribute to global warming, but they can chemically react in the presence of sunlight to form ground-level ozone and so are also classed as SLCPs. (See also EPA *Climate Change Policy*, **Box 1**).

The EPA will continue to directly regulate our environment protection licensees' emissions of particulates, NOx, VOCs and CO: doing so reduces air pollution in the short term and climate change in the long term. We require that these emissions are prevented or minimised from fugitive sources as much as practicable. Our requirements significantly reduce black carbon emissions and the formation of ground-level ozone.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
		Monitor Require Enforce		**KPI** • EPA is continuing to regulate short-lived climate pollutants.

Action 15 Lead by example, maintaining efforts to become a carbon-neutral organisation by 2030

The EPA is aiming to become a carbon-neutral organisation by 2030. We've already started examining the greenhouse gas emissions from our operations and we are working towards establishing a robust, clear and accountable carbon-neutral pathway for the EPA.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
	Indirect	Act Influence		**Deliverable** • EPA has established a 2030 carbon-neutral pathway for its operations. **KPI** • EPA is on track to achieving its ambition to become a carbon-neutral organisation by 2030.

New actions we'll take over the next three years

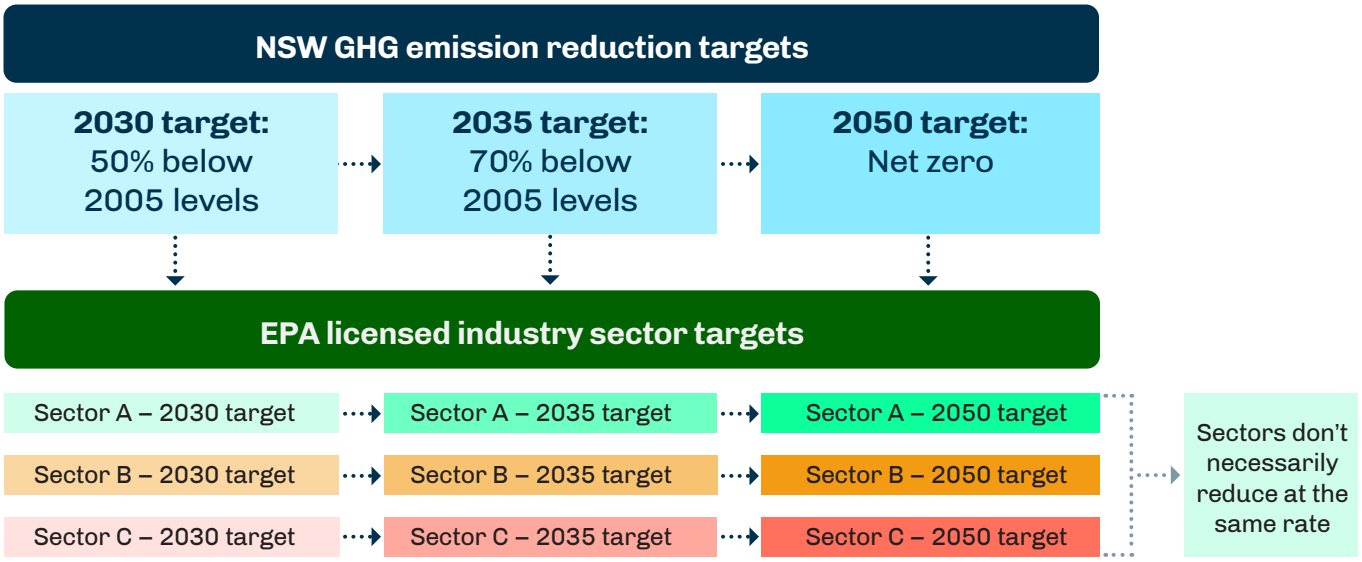
Action 16 Develop a series of greenhouse gas emission reduction targets and related pathways for key industry sectors we license, to help guide our regulatory effort

The EPA will partner with OECC (Treasury Cluster) and DPE Environment and Heritage to develop a series of feasible, evidence-based emission reduction targets and related pathways for key industry sectors that we license (or parts of those sectors), that will help contribute to the broader NSW **net zero targets** (see **Figure 3** below). These targets will help us to focus our regulatory effort on where we can achieve the best outcomes.

This approach will build on the target we already have for the landfill sector (i.e. net zero emissions from organic waste from landfills by 2030: see **Action 10**).

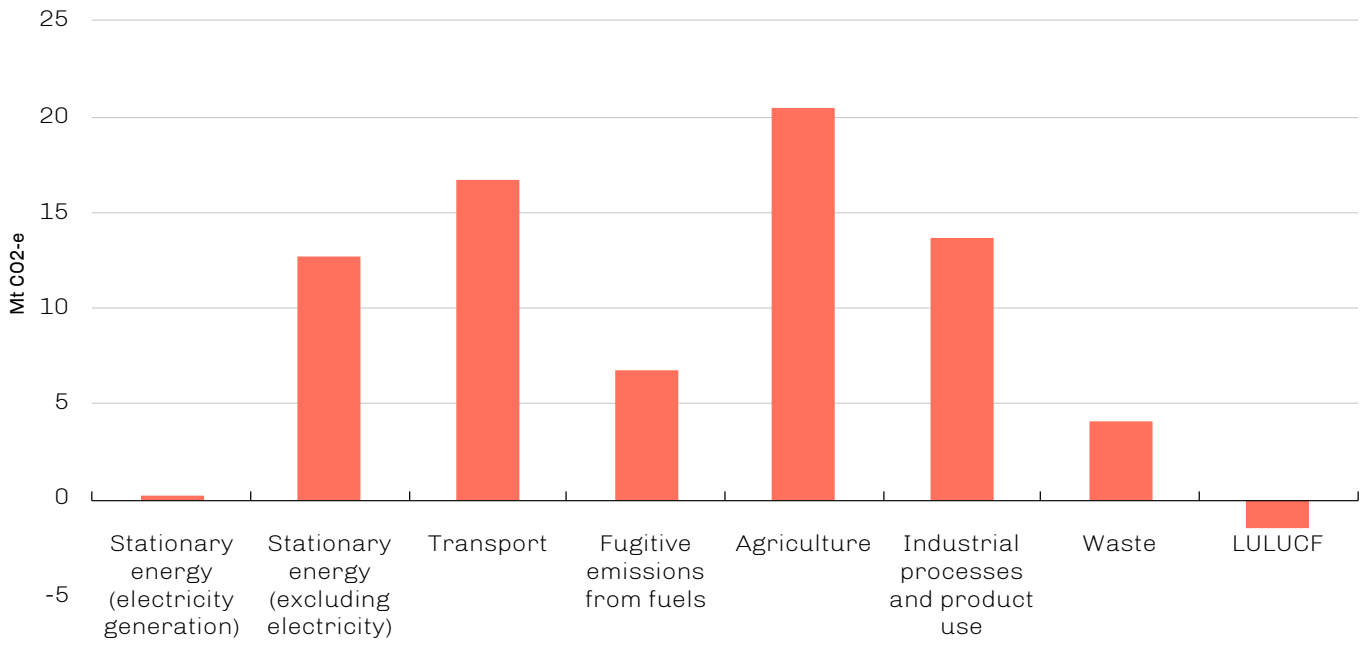
While the NSW Government has set overarching 2030, 2035 and 2050 **net zero targets** for the State, it is neither intended nor feasible for all sectors of the NSW economy to reduce their emissions at the same rate.

Figure 3 Relationship between overarching NSW emission reduction targets and EPA sector targets



Our SoE 2021 report explains that emissions from the electricity generation sector are forecast to reduce significantly as existing coal-fired power stations retire and the State shifts towards renewable generation. **Figure 4** below shows projected emissions for key sectors in 2050 based on current Net Zero Plan Stage 1 policies. More action will be needed across most sectors to ensure NSW achieves net zero by 2050.

Figure 4 Projected NSW emissions in 2050 by sector, with current Net Zero Plan Stage 1 policies implemented (based on UNFCCC key categories); SoE 2021 report



Source: Adapted from Figure 23.6, SoE 2021 report

Note: LULUCF =Land use, land use change and forestry. The latest available NSW emission projections can be accessed on the NSW Net Zero Emissions Dashboard, through the NSW Government's Sharing and Enabling Environmental Data (SEED) portal.

Sector targets will guide the EPA's regulatory efforts: they will be developed in a collaborative way

The purpose of setting industry-sector targets (or sub-sector targets) is to help us focus our regulatory effort where we can achieve the greatest gains. We will focus our efforts by using the suite of regulatory approaches available to us, such as information and guidance, behavioural change programs, and (where appropriate) enforceable requirements and licence conditions (see Figure 5 below).

The targets themselves will not be enforceable, as they will apply to the industry sector as a whole (not to an individual licensee). However, our targets will provide tailored and transparent signals for the industry sectors in question, as we work with them to influence and require greenhouse gas emission reductions.

In addition to sector-specific targets, we might also consider targets for an emission source, such as stationary energy (excluding electricity generation), that is relevant to many sectors. Again, this will help to focus our regulatory efforts.

Setting sector-specific targets requires the design of appropriate pathways for the regulated community to meet the targets, which will involve significant analysis and consultation. We are committed to developing these sector targets and related pathways in partnership with relevant Government agencies (including our proposed **cross-government climate change technical knowledge group**: see Action 2) and in consultation with dedicated industry-sector advisory groups (see Section 1), to ensure they are based on what is reasonable and feasible for the sector.

To support this work, we'll also seek expert advice from the NSW Chief Scientist and Engineer, the Net Zero Emissions and Clean Economy Board (see Box 3 below), and other experts as required. We'll also engage closely with other Australian jurisdictions on our approach, including the Commonwealth, and we'll seek to align with or complement existing approaches, where appropriate.

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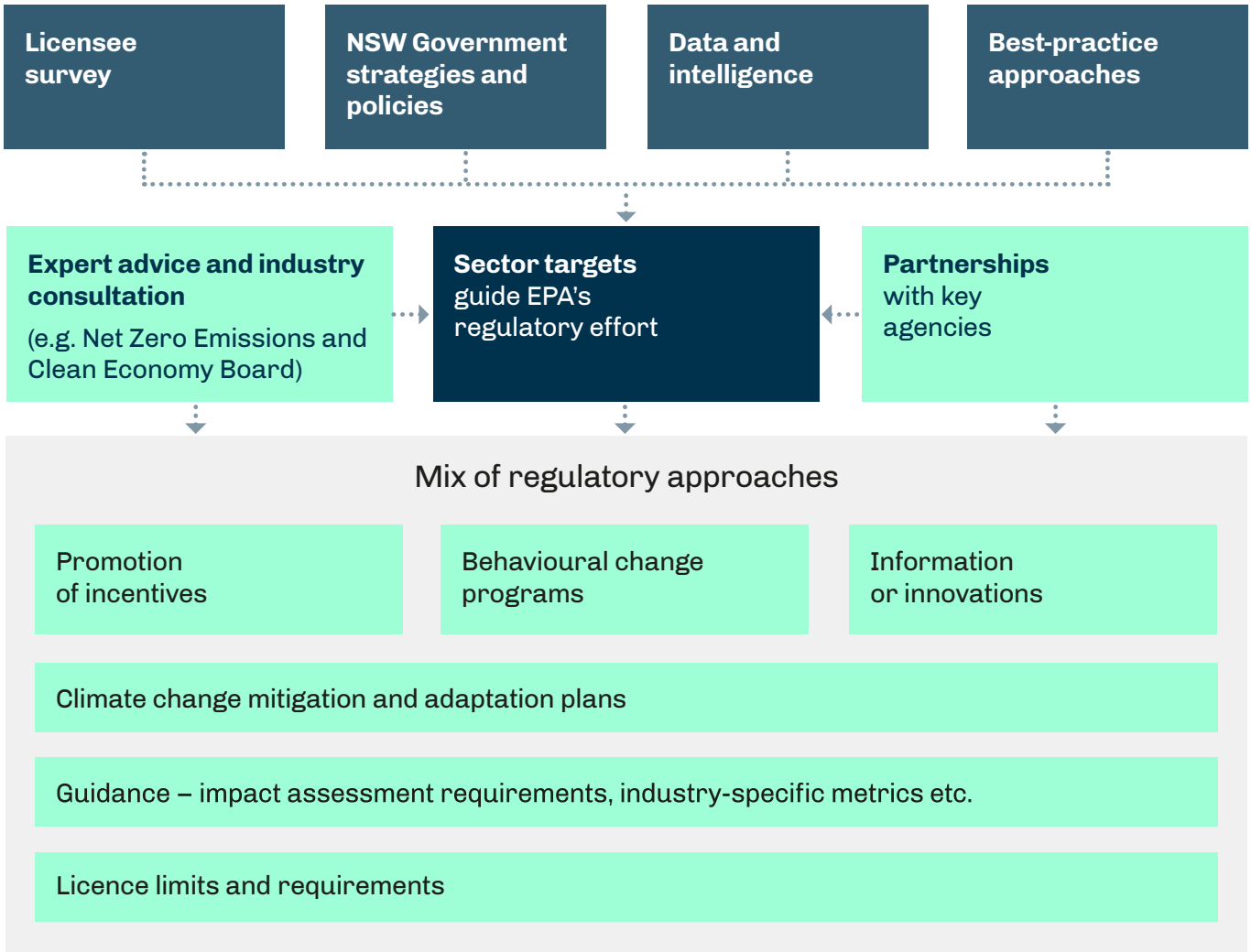
Figure 5 The EPA will use a mix of approaches to achieve sector targets



Box 3 Net Zero Emissions and Clean Economy Board

The Net Zero Emissions and Clean Economy Board is established under the **Energy and Utilities Administration Regulation 2021** and members are appointed by the Minister for Energy.

The Board advises the NSW Government on the implementation of the state's Net Zero Plan. The Board provides advice on the design of net zero programs and policies, opportunities for low emissions research, and strategies to support existing industries to decarbonise.

The Regulation requires that Board members have substantial knowledge of, and significant experience in, at least one of the following areas:

- the electricity industry
- the powerfuels industry
- the transport industry
- primary industries
- manufacturing
- technology and innovation
- heavy industries
- climate science
- climate or related public policy
- finance.

A full list of Board members is available on the **NSW Climate and Energy Action** website.

Sector targets will inform (not dictate) licence requirements

We don't intend for sector targets to be translated directly into consent or licence conditions. However, the sector targets, along with any relevant best-practice guidance developed for that sector, are likely to **guide and inform** planning and licensing decisions (this is further described under Action 18). We'll also keep track of the performance of these sector targets in future *NSW State of the Environment* (SoE) reports (Action 1).

A staged approach to developing sector targets

We'll develop and release in stages the targets and related pathways for key industry sectors we license (or parts of those sectors). By assessing the emission profiles of key industries, we'll also seek to identify information gaps and work out how to address them.

We'll focus our efforts by setting targets for where we can achieve the best environmental outcomes (e.g. we're likely to start with high-emitting sectors where there is no other significant NSW or Commonwealth Government emission reduction strategy already in place). For example, the NSW Government's Electricity Strategy and Electricity Infrastructure Roadmap are designed to enable the orderly transition to renewables as existing coal-fired power stations retire. These initiatives are now being progressed. While we have a role in supporting this transition, we are unlikely to focus our initial efforts in setting emission reduction targets for this sector. We would instead focus on those sectors (or sub-sectors) where there is no explicit policy in place to reduce emissions, and where there are still significant opportunities for us to both influence and require emission reductions.

We'll provide updates on our staged approach to developing sector targets as part of our annual progress reporting (see Action 9), including where we intend to focus our efforts for the coming year.

We'll review the sector targets frequently, taking any new evidence into account.

Over time, this work will help us track industry's progress in reducing emissions and identify where we may need to exert more influence or additional regulatory effort.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
CO_2 i	Indirect	Educate Act		**Deliverable** • EPA has determined and prioritised which licensed industry sectors (or parts of those sectors) require emission reduction targets. **KPIs** • The proportion of identified high-priority sector targets that has been developed • As tracked by EPA, how each sector is performing against any relevant sector target.

Action 17 Prepare or adopt climate change mitigation guidance for key industry sectors we license, including the performance outcomes we seek

We'll prepare climate change mitigation guides that meet our environment protection licensees' needs and make clear the outcomes we're seeking. We'll adopt or adapt existing guidance, where it is fit for purpose, or create new guidance where there is a gap.
These guides will help our licensees prepare their climate change mitigation and adaptation plans (CCMAPs; see **Action 5(b)**) and reduce emissions. They'll also help EPA officers carry out their regulatory functions consistently.
We'll prepare these guides in consultation with relevant agencies and dedicated **industry-sector advisory groups** (see Section 1). To support this work, we'll seek expert advice from the NSW Chief Scientist and Engineer, the Net Zero Emissions and Clean Economy Board (see **Box 3**), and other experts as required.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
	Indirect	Educate Enable Act Influence		**Deliverable** • EPA has determined and prioritised the mitigation guidance it needs to prepare. **KPI** • The proportion of high-priority mitigation guides that has been prepared.

Action 18 Progressively place greenhouse gas emission limits and other requirements on licences for key industry sectors

The EPA will progressively place feasible, evidence-based greenhouse gas emission limits and other requirements on new and existing environment protection licences, for key industry sectors that we regulate. In addition to emissions limits, other licence conditions could include:

- monitoring and/or emission estimation conditions
- other performance requirements (e.g. see Box 5 **Better management of non-road diesel emissions at coal mines** below)
- reporting conditions
- pollution reduction studies and programs.

We'll develop these emission limits and other licence requirements to help NSW meet its net zero targets. Our requirements will also be informed by any **sector emission reduction targets** we have developed for the industries we license (see **Action 16**).

Requirements will be reasonable and feasible for licensees to implement, evidence-based, and developed in consultation with industry. We will consider the social, economic and environmental costs and benefits of the proposed requirements, such as the:

- availability of relevant technologies and techniques
- alignment with existing requirements at the state and national levels (avoiding any conflicts with or duplication of NSW or Commonwealth requirements)
- additional cost to licensees to comply with the requirements
- broader costs and benefits to industry
- social and environmental costs and benefits of the proposed requirements, including potential impacts on the cost of living.

We will ensure any emission limits or other licence requirements complement (and do not duplicate) NSW Government actions already taking place under the *NSW Net Zero Plan*, and any actions being taken by the Commonwealth Government (e.g. under the **Safeguard Mechanism**). Licensees will not be required to report the same information twice. We will also consider how to future-proof our approach, so that it recognises and allows for any future changes to Commonwealth policies or initiatives.

We'll seek expert advice from the NSW Chief Scientist and Engineer, the Net Zero Emissions and Clean Economy Board (see **Box 3**), and other experts as required, about the practicalities of placing emission limits, implementation pathways and other requirements on our licensees.

We'll consult with relevant Government agencies (including our proposed **cross-government climate change technical knowledge group**; see **Action 2**) and industry as we progress this action. We will also engage closely with other Australian jurisdictions on our approach, including the Commonwealth, and we'll seek to align with or complement existing approaches, where appropriate.

Emission limits and other requirements will be placed on licences progressively, on a sector-wide basis, as:

- we develop or identify climate change mitigation guidance relevant to key industry sectors we license (see **Action 17**)
- our licensees develop their climate change mitigation and adaptation plans **(see Action 5(b))**.

We'll prioritise consistency across each licensed industry sector, while still ensuring our requirements are fit for purpose at the site level.

Where needed, we'll require our licensees to benchmark their existing or proposed greenhouse gas mitigation controls against best practice for the sector. If controls are not best-practice, licensees will have to justify why they aren't (taking into account what is reasonable and feasible for their operations).

Box 4 What could greenhouse gas emission limits look like?

Limits could be **emission intensity limits** (e.g. CO_2-equivalent (CO_2-e) emissions per tonne of production) and/or **load limits** (an absolute limit e.g. total CO_2-e emissions per year).

Load limits could be set based on the emission projections included in a proponent's environmental impact assessment. This would help ensure the proponent provides well-informed and robust projections.

Where licensees cannot meet an emission limit, we could consider allowing them to use offsets.

As an early step, we're improving the management of non-road diesel emissions at NSW coal mines, by requiring all **new** large non-road diesel equipment to meet US EPA Tier 4 emission standards (or better) (see Box 5 below).

Box 5 Better management of non-road diesel emissions at coal mines

Diesel emissions are known to adversely affect health. They also contain **short-lived climate pollutants**.

Australia currently has no national emission standards for non-road diesel engines and equipment. The NSW Government is pursuing the introduction of national standards by working with the Commonwealth under the **National Clean Air Agreement** to investigate the potential for a national approach to reducing non-road diesel emissions. The EPA is supporting this process.

In addition, we're already working with our regulated community to reduce emissions from non-road diesel equipment in the near future. This project will help the NSW Government deliver the NSW Clean Air Strategy action to 'drive emissions reductions from non-road diesel vehicles and equipment' and also reduce short-lived climate pollutants.

Coal mining is the largest contributor of non-road diesel combustion emissions in NSW. We want to bring emissions standards for non-road diesel equipment into line with global best practice and encourage the uptake of cost-effective low emission technologies in NSW.

We'll be requiring all **new** large non-road diesel machinery at all NSW coal mines to meet US EPA Tier 4 emission standards (or better – for example, zero emissions), via a licence variation. (The Tier 4 standard reduces emissions of nitrogen oxides (NOx) and $PM_{2.5}$, which are harmful to human health and contribute short-lived climate pollutants). Tier 4 machines have the same or lower greenhouse gas emissions as other standard equipment. Many recently approved coal mines are already meeting the Tier 4 emissions standard, as it is a requirement of their development consent.

We will be working with the coal mining sector to begin implementing this requirement in 2023, ensuring the requirement represents cost-effective abatement.

We will also work with the sector to ensure appropriate transitional arrangements are in place, and that any regulatory barriers to implementing the better-performing equipment are removed.

The requirement will not apply to existing or ordered machinery. Licensees will be given a reasonable grace period (to be determined) to enable them to prepare for the change. They will need to upgrade their surface non-road diesel fleet to meet this standard (as a minimum) over time as they replace their equipment.

This action will have significant benefits for local air quality and co-benefits for climate because it will cut greenhouse gas emissions, including short-lived climate pollutants.

Tier 4 emission standards or their equivalent are already required for new diesel machinery in many overseas jurisdictions (e.g. the European Union, the USA, all OECD countries, India, Russia, China, Brazil, Singapore, Japan and South Korea).

Once we've applied the standards to coal mines, we'll work with other sectors of our regulated community to require better performance from non-road diesel engines.

We'll provide updates on where we placed limits and requirements on licences, including the licensees we have focused on, as part of our annual reporting (see **Action 9**). We'll also indicate where we intend to focus our efforts for the coming year.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
		Act Require Monitor Enforce		**Deliverables** • EPA has determined which groups of licensees require greenhouse gas emission limits and other requirements on their licences, and has prioritised them • EPA has placed conditions on all NSW coal mine licences during 2023 that require all new large non-road diesel machinery to meet US EPA Tier 4 emission standards (or better). **KPI** • The proportion of identified high-priority licences with greenhouse gas emission limits or other requirements.

Action 19 Encourage and support our regulated community to innovate

Other parts of the NSW Government are primarily responsible for promoting industry innovation and transformation to address climate change mitigation and adaptation. However, the EPA can use its relationship with its regulated community to encourage and support innovation.

We'll encourage and support our environment protection licensees and other parts of our regulated community to access government programs such as the Net Zero Industry and Innovation Program, the Coal Innovation Fund, the Emissions Intensity Reduction Program and Sustainability Advantage. See the **NSW State of the Environment** 2021 report for more details ('Status of initiatives' under the 'Net Zero Plan' topic).

We'll also work with OECC and other relevant agencies to provide regulatory support for industry grant programs for clean technology development and decarbonisation.

We will consider whether our licensees require additional targeted assistance to reduce their emissions or exposure to climate risks, and we will report back to the Government on this.

We'll also explore new ways to provide a regulatory environment that fosters and stimulates innovation. For example, we'll:

- consider if changes to our policies or procedures could assist with innovation
- explore regulatory reforms or consider alternative forms of regulation (e.g. for low-risk renewable energy projects)
- provide links to relevant programs, case studies and the latest trends on our website
- consider how to recognise and showcase licensees and other regulated entities who have made significant efforts to reduce their emissions or exposure to climate risks
- regularly engage with relevant licensees and industry groups to provide up-to-date information on innovation opportunities and programs, new regulatory approaches and emerging initiatives, through regular meeting forums, the newsletter *EPA Connect* and EPA Roadshows
- invite program leaders from across government to speak at EPA events such as EPA Roadshows, regular meeting forums and targeted innovation forums for licensees
- support the development of innovative technologies and approaches that reduce emissions, particularly in the waste sector
- showcase the success of industry-led innovative climate-friendly practices.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
	Indirect	Influence Act Enable		**Deliverables** EPA has: • reported back to the Government on whether its licensees require additional assistance to reduce their emissions or exposure to climate risks • shared information with its licensees about innovation programs, examples and opportunities • provided opportunities for feedback about innovation opportunities • addressed any relevant issues that have been raised • developed practical and transparent approaches for recognising licensees that have made significant efforts to reduce emissions and/or exposure to climate risks. **KPI** • Proportion of licensees that report that the EPA's support has encouraged and assisted them to innovate.

5. Action plan pillar 3: **Adapt**

Climate change adaptation is about adjusting to the actual or expected effects of climate change. Adaptation enables communities, business and the economy to plan for, and recover more quickly and easily from, the acute and chronic impacts of climate change

Taking adaptation actions now will help us to build resilience to types of impacts we can expect from a changing climate in the future.

The **Climate Change** topic of the EPA's **NSW State of the Environment 2021** report describes the changes in current temperature and weather patterns in NSW, the future projections of change, and the impacts of these changes on the environment more generally. Appendix A of our *Climate Change Policy* provides a summary of the causes and consequences of climate change in NSW, as described in our SoE 2021 report under the **Climate and Air** theme.

We play an important role in responding to the environmental impacts of climate-change-related incidents, emergencies and disasters, under the State's emergency management arrangements. This includes managing the impact of these events on the environment and communities, (including Aboriginal communities), through response and recovery activities. We're increasingly being called on to respond to these events, and we're spending more resources than ever leading clean-up efforts to protect the environment and human health.

Case study: How we're supporting communities to recover from climate-change-related disasters

The EPA works to protect the NSW environment during emergency and disaster responses, helping manage the immediate impact of these disasters on the environment and communities, (including Aboriginal communities). We also help communities recover from these events in the medium and longer term by delivering a range of clean-up and recovery programs.

Since 2019, NSW has experienced consecutive, concurrent and compounding climate-change-related disasters across the State, including the devastating 2019–20 Black Summer bushfires and several major floods in 2021 and 2022.

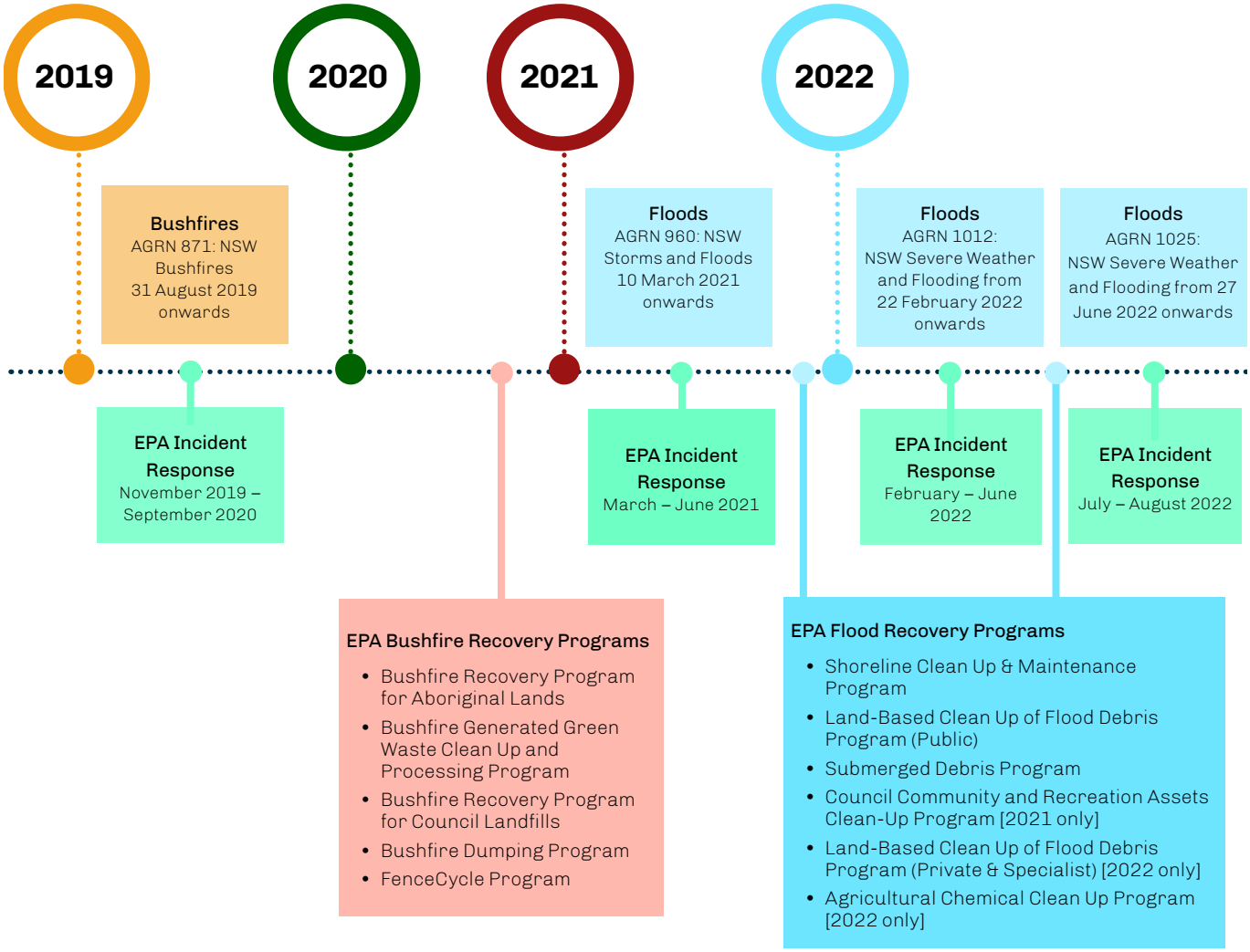
Our immediate responses to these events included:

- deploying staff to **Emergency Operation Centres and Recovery Coordination Centres** across the State to help with the relief effort. There they provided environmental advice and services to local councils and communities, working alongside the NSW State Emergency Service, Fire and Rescue NSW, NSW Police, NSW Rural Fire Service, the NSW Reconstruction Authority, Public Works and the Office of Local Government
- activating **incident management teams** for each event. These teams coordinated support for our regulated community, identified and located environmental impacts, and engaged clean-up contractors to remove and dispose of waste, to protect the environment and human health.

We've also been helping NSW communities recover from these events, delivering over **$140 million** in support to disaster-impacted communities through our **Bushfire recovery programs** ($66 million) and our **Flood recovery programs** ($74.5 million). This assistance is made possible through the joint Australian Government–State *Disaster Recovery Funding Arrangements*[5].

5 Through the ***Disaster Recovery Funding Arrangements 2018***, the Australian Government provides financial assistance directly to the states to assist them with costs associated with certain disaster relief and recovery assistance measures.

Figure 6 Disaster timeline, including the EPA's emergency response and recovery programs*



* All time frames shown in this figure are indicative only
AGRN = Australian Government Reference Number for natural disaster declarations

Pillar 3: Adapt

We expect our regulated community, especially our environment protection licensees, to contribute in a fair and reasonable way to achieving the State's goal of **making NSW more resilient and adapted to a changing climate**.

Our licensees' premises and activities pose greater risks to the environment if the impacts of climate change are not adequately considered: for example, more frequent severe storms might increase a premises' risk of polluting waters and sustained high rainfall might increase odour complaints. We'll work with our licensees to minimise the environmental risks that will arise from both the **acute impacts** of climate change (e.g. more frequent severe weather) and the **chronic impacts** (e.g. sustained high temperatures, higher or lower rainfall, sea level rise) – see **Glossary**.

In this section we describe new and continuing actions that will work together to help us build the community's resilience to a changing climate. These actions build on actions described in **Inform and plan** (Section 3) that have clear benefits for climate change adaptation. For example, **Action 5(b)** will require our licensees to develop and implement climate change mitigation and adaptation plans (CCMAPs). This action will help ensure our licensees have considered their exposure to climate risks and are taking genuine action to implement practical and feasible options over time.

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Action 22	Develop an adaptation and resilience delivery plan for the EPA	50
Action 23	Develop and implement environmental resilience programs and initiatives	51
Action 24	Prepare or adopt climate change adaptation guidance for key industry sectors we license, including the performance outcomes we seek	52
Action 25	Develop a climate change citizen-science strategy and community education program to encourage and support young people to make observations about changes in their local environment	53

What is the NSW Government already doing?

Under the **NSW Climate Change Policy Framework**, the NSW Government is committed to making NSW more resilient and adapted to a changing climate. This is being achieved through a variety of strategies and programs: for instance, the **Increasing Resilience to Climate Change grants program** funds local councils and community groups to adapt, foster partnerships and manage climate change impacts.

The NSW Government's **NSW Climate Change Adaptation Strategy** sets a strategic approach for managing the impacts of climate change on the State. The strategy provides a framework that will strengthen and expand action to adapt to climate change now and over the long term.

In addition, the NSW Reconstruction Authority is preparing a State Resilience Strategy, which will provide strategic direction on embedding disaster resilience across NSW, from prevention through to recovery. The strategy will also outline priority actions for government in terms of building disaster resilience across NSW.

We'll ensure that our climate change adaptation actions and approaches complement the NSW **Climate Change Adaptation Strategy** and the State Resilience Strategy.

Our **SoE 2021 report** provides more detail about these and other adaptation initiatives (see 'Responses' under the 'Climate change' topic).

Existing actions the EPA will continue and strengthen

Action 20 **Protect the environment during emergency response and recovery, and strengthen our approach by being better prepared for the impacts of climate change**

The EPA works to protect the NSW environment during emergency and disaster responses, helping manage the impact of pollution incidents on the environment and communities. In doing this, we work closely with agencies such as Fire and Rescue NSW and the NSW Reconstruction Authority.

Addressing and being well prepared for the risks and impacts of climate change is a significant challenge for the emergency management sector, and we collaborate with emergency management agencies at the State and national levels on these issues.

The EPA's role and responsibilities

NSW has a **NSW State Emergency Management Plan** (EMPLAN; NSW Government 2018), which outlines the roles and responsibilities of the different agencies involved in emergency management in this State. This plan identifies the EPA's role in responding to emergencies and its responsibility for coordinating the **Environmental Services Functional Area**.

The NSW **Environmental Services Functional Area Supporting Plan** (EnviroPlan; NSW Government 2019) sets out the emergency management arrangements for the protection of the environment before, during and after an emergency. The EPA is responsible for reviewing EnviroPlan: it is to be reviewed at least every five years (or earlier, if required).

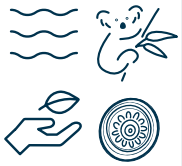
In accordance with EnviroPlan and in collaboration with other NSW agencies, the EPA:

- determines measures to prepare for and help prevent incidents that may impact on public health and the environment
- coordinates environment protection during emergency response and recovery (e.g. see our case study on page 44)
- coordinates the clean-up of land and inland waters affected by serious incidents.

The EPA sits on the State Emergency Management Committee Climate Change Advisory Group and the Australasian Fire and Emergency Service Authorities Council Climate Change Group, which aim to provide advice on climate-related risks to inform emergency management strategies, planning, processes and decision-making. We will continue to work with these advisory groups.

To strengthen our approach, when we review the EnviroPlan we'll ensure that it:

- adequately addresses and considers the risks and impacts of climate change on the State's emergency response and recovery operations
- incorporates the concept of building environmental resilience.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
		Act Enable		**Deliverable** • EPA has reviewed the Environmental Services Functional Area Supporting Plan (EnviroPlan) to ensure it has adequately addressed climate risks.

Action 21 Ensure climate risks are considered in native forestry via the Forest Monitoring and Improvement Program

The EPA is responsible for the compliance and enforcement of native forestry operations; however, the NSW Government is responsible for the environmental regulations that apply. While native forests can act as long-term carbon storage and sequestration, the health of native forests and the biodiversity they support are both increasingly vulnerable to the impacts of climate change, particularly fire, pests and pathogens, drought, floods and higher-intensity rainfall.

The EPA is an active participant in the **NSW Forest Monitoring and Improvement Program** (FMIP), which is a requirement of the environmental rules that apply to native forestry – the Integrated Forestry Operations Approvals and the Private Native Forestry Codes of Practice. The FMIP undertakes broadscale forest monitoring and targeted research to provide evidence to the NSW Government that the **NSW forest management framework** is delivering ecologically sustainable forest management (ESFM) outcomes, including ensuring the ongoing effectiveness of native forest in contributing to carbon sequestration and its resilience to climate change consequences.

The EPA will continue to work with the NSW Natural Resources Commission, Regional NSW and the Forestry Corporation of NSW as part of the FMIP to ensure climate risks are identified and consequences are appropriately managed in the Integrated Forestry Operations Approvals and Private Native Forestry Codes of Practice.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
		Influence		**Deliverables** • EPA supports and participates in the FMIP • EPA implements policy and regulatory improvements recommended by the FMIP Steering Committee to ensure the ongoing achievement of ESFM, including addressing climate change risks.

New actions we'll take over the next three years

Action 22 Develop an adaptation and resilience delivery plan for the EPA

The **acute** and **chronic** impacts of climate change (see **Glossary**) are putting pressure on our environment and our communities. Since 2019 we have experienced consecutive, concurrent and compounding climate-change-related incidents, emergencies and disasters across the State, including devastating bushfires, multiple major flooding events and biosecurity events such as the mouse plague, all overlaid with the complexities of the COVID-19 pandemic. This presents significant challenges for all sectors of our community, as well as for our emergency response and recovery work, our regulated community and our own operations.

As we continue to experience tangible and devastating impacts of climate change, governments at every level across Australia are increasingly focused on climate change adaptation and building community and environmental resilience. There is a lot of work happening in this space and the policy landscape is evolving quickly. The **NSW Climate Change Adaptation Strategy**, together with the development of the State Resilience Strategy, will provide a strategic and coordinated approach for managing these climate risks and impacts and building resilience in NSW.

To ensure that the EPA remains at the forefront of this work, we'll develop an adaptation and resilience delivery plan, in consultation with relevant agencies. This delivery plan will inform our stakeholders about the collective actions we intend to take to minimise the impacts of climate change and build resilience in the context of:

- our role in emergency response and recovery
- our role as regulator, considering the risks faced by our regulated community, especially our environment protection licensees
- our own operations.

Our delivery plan will also show how we'll deliver on our agency-specific responsibilities under the NSW Climate Change Adaptation Strategy. This includes responsibilities that relate to (or inform) the following, which will not be led by the EPA:

- specific, measurable and time-bound metrics to measure progress toward climate change resilience and adaptation for all of NSW
- whole-of-NSW climate change risk and opportunity assessments
- whole-of-NSW adaptation action plans.

The first iteration of these metrics and documents is due to be published in 2023.

Our delivery plan will also show how we'll deliver on our responsibilities under the State Resilience Strategy, which is currently in development.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
	Indirect	Act Educate Enable		**Deliverable** • EPA has published an EPA adaptation and resilience delivery plan.

Action 23 Develop and implement environmental resilience programs and initiatives

We're building environmental resilience by planning, preparing for and preventing climate-change-related incidents, emergencies and disasters where we can, as well as responding to them.

A key focus of our **adaptation and resilience delivery plan** (see Action 22 above) will be to develop and implement a range of environmental resilience programs and initiatives.

We're positioning ourselves to be 'season ready' and better prepared for the acute and chronic impacts of climate change (see Glossary). We're enhancing our ability to deliver **rapid recovery programs**, building on lessons we've learned from our own bushfire and flood recovery programs and the work of other jurisdictions. We're increasing our ability to scale up quickly and to help the community and environment to recover, working as needed over extended periods.

We'll also explore programs to build environmental resilience, using solutions underpinned by **partnerships** and **behavioural insights**. This will benefit our regulatory partners, local communities and councils, Aboriginal land managers and other public land managers. We will consult with our stakeholders as we develop these programs.

We'll develop sector-based initiatives to help our **environment protection licensees** build climate resilience and protect the environment. We're already focusing on **building waste sector resilience to climate change**. We've described how we'll implement this initiative in our **Waste Delivery Plan**, our plan for delivering on our priorities under the NSW Government's **Waste and Sustainable Materials Strategy 2041**.

The waste sector is already stressed by consecutive, concurrent and compounding climate-change-related disasters across the State, and this in turn is putting significant pressure on our environment. We're commissioning research into the impacts of climate change on waste transportation, storage, processing, disposal and legacy sites. We'll use the findings to support the development of contingency waste capacity and overall climate preparedness across the waste sector.

We'll also consider the best way to target **behaviour-change approaches** to parts of our regulated community beyond licensees.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
		Act Enable		**Deliverable** • EPA has determined and prioritised the environment resilience programs and initiatives it needs to develop, based on immediate and long-term community needs. **KPI** • The proportion of identified high-priority programs and initiatives that has been developed.

Action 24 Prepare or adopt climate change adaptation guidance for key industry sectors we license, including the performance outcomes we seek

We'll prepare climate change adaptation guides that meet our environment protection licensees' needs and make clear the outcomes we're seeking. We'll adopt or adapt existing guidance, where it is fit for purpose, or create new guidance where there is a gap.
These guides will help our licensees prepare their climate change mitigation and adaptation plans (CCMAPs; see **Action 5(b)**) and build resilience. They'll also help EPA officers carry out their regulatory functions consistently.
We'll prepare these guides in consultation with relevant agencies and dedicated **industry-sector advisory groups** (see Section 1). To support this work, we'll seek expert advice from the NSW Chief Scientist and Engineer, the Net Zero Emissions and Clean Economy Board (see **Box 3**), and other experts as required.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
	Indirect	Educate Enable Act Influence		**Deliverable** • EPA has determined and prioritised the adaptation guidance it needs to prepare. **KPI** • The proportion of identified high-priority adaptation guidance that has been prepared.

Action 25 Develop a climate change citizen-science strategy and community education program to encourage and support young people to make observations about changes in their local environment

The EPA will partner with DPE Environment and Heritage to develop a strategy for citizen-science to identify changes in the local environment, engaging with place-based issues of concern to the community. While targeting young people, the program would encourage others – teachers, parents and volunteers helping young people with their observations – to get involved.

To support the strategy, we'll develop a range of innovative online tools and a community education program to raise awareness about climate change. The program and online tools, including a website and database, would empower the community (especially young people, for example, high school students) to get involved in identifying the impacts of climate change, and would also encourage positive behavioural changes.

Local environmental changes that could be recorded include the quality and quantity of river water, the progress of erosion, air quality and temperature patterns.

While this is not intended to be part of the NSW school curriculum, schools and community groups could use the education program and online tools if they wish to raise awareness of climate change, while Landcare and other community organisations could use them to track changes in their local area.

This action will give the EPA and policymakers across government more place-based information to guide future policy and regulatory settings, so helping to keep NSW on track to meet its commitments for net zero by 2050.

Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
	Indirect	Educate Enable Listen		**Deliverables** • EPA has developed a climate change citizen-science strategy and it is being implemented • EPA has developed a community education program and online tools to support the climate change citizen-science strategy.

6. Stronger regulatory responses we'll consider in the future

Over the life of this action plan, we'll be monitoring how NSW is tracking against its **net zero targets** (see **Glossary**). We'll also be working with our regulated community to implement our action plan and monitoring how successfully it is reducing its greenhouse gas emissions and exposure to climate risks (and whether it is taking genuine steps to do so).

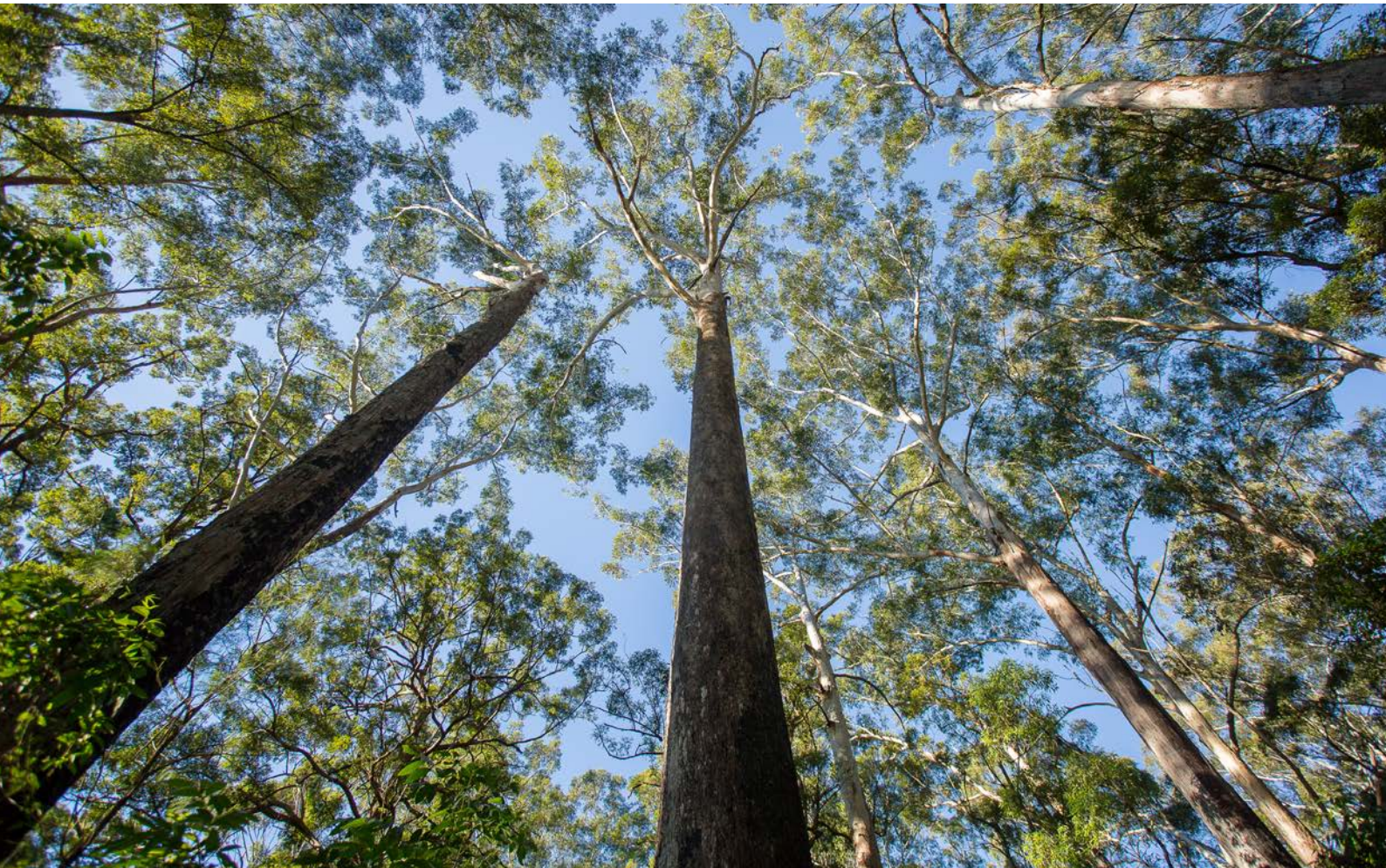
We're committed to strengthening our regulatory response in the medium to longer term if it is required to support the NSW Government's climate change actions and commitments, including the NSW net zero targets. That includes considering whether market-based approaches might be needed to encourage faster decarbonisation.

We use market-based instruments and other economic incentives to regulate pollution in economically efficient ways by harnessing innovation and market forces to achieve improvements in environmental performance. We'll consider the need for this type of approach if regular reviews and reporting of progress (including implementation updates on the Net Zero Plan) show that a stronger regulatory response is warranted to meet the State's net zero targets.

Market-based approaches could include using the load-based licensing scheme and charging a fee for greenhouse gas emissions. We could also investigate whether a targeted cap, offsets and trading scheme for greenhouse gas emissions would be more effective and provide greater certainty. Our regulatory framework lets us operate different mechanisms concurrently, so that we have fit-for-purpose and complementary approaches for different types of emitters.

If a market-based approach appears to be appropriate and warranted, we'll work with other relevant agencies to consider:

- possible models and designs
- costs and benefits of any proposal
- appropriate timing (and potentially staging)
- the need for transitional arrangements.



Glossary

Term	Definition
Acute impacts of climate change	The **acute impacts of climate change** are event-driven: they include increased severity of extreme weather events such as heatwaves, floods or storms [adapted from: (DPIE 2021a)]. See also: **chronic impacts of climate change**.
Black carbon	**Black carbon** refers to small airborne particles emitted by combustion processes. Black carbon is both an air pollutant and a **short-lived climate pollutant**. Black carbon emissions have been linked to both climate warming and adverse health effects, including respiratory and cardiovascular illnesses (EPA 2021c; CARB 2022; CCES 2022).
Chronic impacts of climate change	The **chronic impacts of climate change** result from longer-term and cumulative changes in weather patterns, and climate-related trends, e.g. sustained high temperatures, sustained low or high rainfall and sea level rise. Chronic impacts can amplify acute (event-based) impacts and can relate to changes to the average of a climate variable over time [Adapted from: (DPIE 2021a)]. See also: **acute impacts of climate change**.
Climate	**Climate** means the average weather that a location experiences over many years, even thousands of years. Key variables include temperature, rainfall and wind (CSIRO 2018).
Climate change	**Climate change** means changes in the climate (the average weather) that persist for an extended period of time, typically decades or longer. Climate change therefore occurs in addition to or on top of variability from year to year (CSIRO 2018).
Climate change adaptation	**Climate change adaptation** means adjustment to the actual or expected effects of climate change. Adaptation plays a key role in reducing exposure and vulnerability to climate change, and can be proactive, reactive, incremental or transformational (IPCC 2022).
Climate change mitigation	**Climate change mitigation** means actions that reduce the rate of climate change. This includes actions that limit or prevent greenhouse gas emissions and activities that remove these gases from the atmosphere (IPCC 2022a).
Climate resilience	**Climate resilience** means the capacity of systems (including social, economic, engineered, natural and ecosystems) to cope with a hazardous event, trend or disturbance. Coping means responding in ways that maintain the essential function, identity and structure of a system (as well as biodiversity in the case of ecosystems (IPCC 2022)).

Term	Definition
Climate risk | climate change risk | climate-related risks	**Climate risk** is when a hazard creates the potential for negative consequences due to the exposure and vulnerability of human or ecological systems. These consequences can include impacts on lives, livelihoods, health and wellbeing, economic, socio-cultural assets and investments, infrastructure, services (including ecosystem services), ecosystems and species (IPCC 2021a).
CO_2-equivalent (CO_2-e) emission	**CO_2-equivalent (CO_2-e) emission** means the amount of carbon dioxide (CO_2) emission that would cause the same integrated radiative forcing or temperature change, over a given time horizon, as an emitted amount of a greenhouse gas or a mixture of greenhouse gases (IPCC 2018).
Co-benefits of climate change action	The **co-benefits of climate change action** include the benefits for the local environment and human health as a result of (mitigation/adaptation) actions that are targeted at addressing global climate change, such as improved air, water and soil quality, biodiversity and ecosystem services, the availability of natural resources, and safety (Hamilton & Akbar 2010). There are also benefits for the protection of Country and Aboriginal cultural values, which are essential to the culture and wellbeing of Aboriginal people.
Decarbonisation	**Decarbonisation** is the process by which countries, individuals or other entities aim to achieve zero fossil carbon existence. Decarbonisation typically refers to a reduction of the carbon emissions associated with electricity, industry and transport (IPCC 2018).
Ecologically sustainable development	**Ecologically sustainable development** (ESD) requires the effective integration of social, economic and environmental considerations in decision-making processes. A full definition is in Section 6(2) of the *Protection of the Environment Administration Act 1991*. The principles of ESD are well established and are enshrined in legislation in NSW, Australia and many other jurisdictions.
Ecosystem services	**Ecosystem services** are the benefits provided to humans through the transformations of resources (or environmental assets, including land, water, vegetation and atmosphere) into a flow of essential goods and services e.g. clean air, water, and food (Costanza et al. 1997).
Environmental justice	**Environmental justice** means the fair treatment and meaningful involvement of all people regardless of age, ethnic background, socio-economic background and status with respect to the development, implementation and enforcement of environmental legislation, policies and actions [adapted from: (US EPA 2015)]. Environmental justice principles include whether there will be an impact on disadvantaged communities or vulnerable people because of an environmental or human health issue or a non-compliance (EPA 2021a).

Term	Definition
Environment protection legislation (NSW)	NSW **environment protection legislation** refers to the suite of legislation that the EPA has responsibilities, functions and powers under. This includes (but is not limited to) the *Protection of the Environment Operations Act 1997* (POEO Act), which is the key piece of legislation for protecting the environment in NSW. See our **Legislation and compliance** webpage for a full list of the legislation we administer.
Environment protection licence ('licence') *and* **environment protection licensee ('licensee')**	**Environment protection licences** ('licences') are a central means for controlling the localised, cumulative and acute impacts of pollution in NSW. The *Protection of the Environment Operations Act 1997* (POEO Act) contains a list of activities that require a licence (in Schedule 1 of the POEO Act). Broadly, they are activities with potentially significant environmental impacts. An activity listed in Schedule 1 is referred to as a 'scheduled activity'. The EPA issues licenses for these activities and is the appropriate regulatory authority (ARA) for all scheduled activities in NSW.
Firming infrastructure	Firming infrastructure refers to the electricity infrastructure needed to support the transition to renewable electricity generation in NSW. It helps to balance the grid and ensure a reliable electricity supply when it isn't sunny or windy, or when there is a high demand. Firming infrastructure includes energy storage and fast-start generation, such as: • long-duration storage, which can provide large amounts of reliable electricity on demand (e.g. pumped hydro) • short-duration storage, which can provide rapid and short injections of power (e.g. batteries) • fast-start gas-fired or bioenergy generation. (DPIE 2019; DPIE 2020a)
Greenhouse gases	Greenhouse gases are gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of radiation emitted by the Earth's surface, by the atmosphere itself, and by clouds. This property causes the greenhouse effect. Water vapour (H_2O), carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4) and ozone (O_3) are the primary greenhouse gases in the Earth's atmosphere. Human-made greenhouse gases include sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), chlorofluorocarbons (CFCs) and perfluorocarbons (PFCs) (IPCC 2021).
Innovation	**Innovation** is the implementation of a new or significantly improved product (good or service) or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations (COAG 2017).

Term	Definition
Natural resources	**Natural resources** are the naturally occurring assets that provide useful benefits through the provision of raw materials and energy used in economic activity (or that may provide such benefits one day) and that are subject primarily to quantitative depletion through human use. They are subdivided into four categories: mineral and energy resources, soil resources, water resources and biological resources (UN 1997).
Net zero emissions	**Net zero emissions** are achieved when anthropogenic emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period (IPCC 2018).
Net zero targets (NSW Government)	The NSW Government's net zero targets are: • a 50% reduction in greenhouse gas emissions by 2030, compared to 2005 levels • a 70% reduction in greenhouse gas emissions by 2035, compared to 2005 levels and • net zero greenhouse gas emissions by 2050. (DPIE 2021 and OECC 2022)
Public authority	**A public authority** means a local council and other local authority, NSW Government department, State-owned corporation or a Commonwealth Government department (defined in the POEO Act). See also regulated community.
***Protection of the Environment Operations Act 1997* (POEO Act)**	The POEO Act is the key piece of environment protection legislation administered by the EPA. The object of the Act is to achieve the protection, restoration and enhancement of the quality of the NSW environment. The activities listed in Schedule 1 to the Act (broadly, activities with potentially significant environmental impacts) require an **environment protection licence** from the EPA. We're also responsible for a range of other NSW **environment protection legislation**.
Regulation	The functions performed by the EPA to protect, enhance and restore the environment, reduce the risks to human health and prevent degradation of the environment. Regulation includes all the elements of the EPA's regulatory approach (EPA 2021b).
Regulatory approach (the EPA's)	**The EPA's regulatory approach** has eight elements – influence, listen, educate, enable, act, enforce, monitor and require. In everything we do we aim to assess the greatest risks and address the biggest impacts to human health and the environment. We focus our activities to achieve the best outcomes (EPA 2021a).

Term	Definition
Regulated community	**Regulated community** means the people, businesses, industries and government organisations that are regulated by the EPA under our environment protection legislation (EPA 2021b). Examples include: managers of contaminated sites; licensed industrial and agricultural premises (see 'environment protection licence'); some forestry operators. In addition, under the POEO Act, the EPA is the appropriate regulatory authority (ARA) for all activities carried on by a **public authority** (e.g. activities managed by councils and other local authorities, NSW Government departments, State-owned corporations or a Commonwealth Government department).
Regulatory partners	**Regulatory partners** means other State and local government regulators who share our role in protecting the environment and human health, including the Department of Planning and Environment, NSW Health, SafeWork NSW, Transport for NSW, Department of Regional NSW (including the Department of Primary Industries) and local councils. We work with our regulatory partners in complementary ways as co-regulators. We also influence their activities under environment protection legislation so they are informed by EPA expertise (EPA 2021a).
Short-lived climate pollutants (SLCPs)	**Short-lived climate pollutants** (e.g. black carbon (air particulates that are products of combustion), methane, tropospheric ozone, and hydrofluorocarbons) have short atmospheric lifetimes, but a high global warming potential. This means that, per molecule, they can warm the Earth faster than carbon dioxide (EPA 2021c; CARB 2022; CCES 2022).

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Appendix: Summary of our climate change actions

Table A1. Key to icons

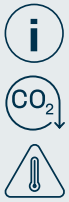
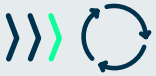
Our policy pillars	Co-benefits of climate action	Delivery time frames
Inform and plan	Protection of Country and Aboriginal cultural values	Year 1: < 12 months
Mitigate	Air quality	Year 2: 12–24 months
Adapt	Water and soil quality	Year 3+: 24–36 months +
	Biodiversity and ecosystem services	Ongoing
	Availability of natural resources	
	Hazard reduction	

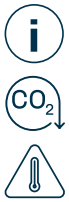
Note: Section 2, **Reading our action plan**, describes the policy pillars, co-benefits, time frames and regulatory elements.

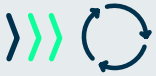
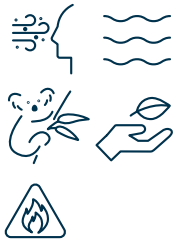
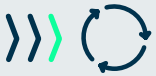
Source: *EPA Regulatory Strategy* (EPA 2021a)

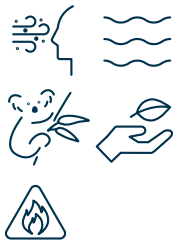
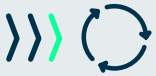
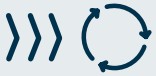
Table A2 Summary of our continuing climate change actions

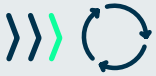
Action		Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
1	Monitor and report on the impacts of climate change, greenhouse gas emissions and the implementation and effectiveness of the NSW Net Zero Plan, in *NSW State of the Environment* reports		Indirect	Monitor Educate		**Deliverable** • EPA includes information on the impacts of climate change in NSW, greenhouse gas emissions and the implementation and effectiveness of the Net Zero Plan Stage 1, in all *State of the Environment* (SoE) reports up to 2030.
2	Engage and collaborate with climate change experts across the NSW Government, and with other jurisdictions, as the EPA develops and implements its climate change actions		Indirect	Listen Enable Influence		**Deliverable** • EPA has engaged with climate change experts within relevant NSW Government agencies to inform the implementation of its climate change actions • EPA has established a dedicated cross-government climate change technical knowledge group • EPA has engaged with HEPA and AELERT and liaised with other relevant agencies on climate change approaches.
3	Monitor emerging issues, trends, risks and opportunities surrounding the issue of climate change and the transition to a decarbonised economy		Indirect	Monitor Educate Enable		**Deliverable** • EPA has carried out an annual climate change horizon scan. **KPI** • EPA is incorporating learnings into its regulatory response to climate change.
4	Support EPA officers to make climate-change-related decisions		Indirect	Enable Act		**Deliverable** • EPA has identified and prioritised guidance and training it needs to prepare for officers. **KPI** • The proportion of identified high-priority documents that has been prepared.

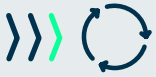
Action		Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
5	*Require and support our regulated community to develop and implement plans to minimise emissions and exposure to climate risks*	-	-	-	-	-
5(a)	Focus our regulatory effort by first listening to our regulated community, so we understand the climate change actions already being taken		Indirect	Listen Influence		**Deliverable** • EPA has completed the licensee survey, analysed the results and determined when/where to focus its regulatory effort and support for licensees.
5(b)	Progressively require our licensees to prepare, implement and report on climate change mitigation and adaptation plans			Require Listen Enable Influence		**Deliverables** • EPA has developed a CCMAP guide and tested its usefulness • EPA has evaluated the CCMAP approach and has identified any required improvements. **KPIs** • Proportion of licensees with appropriate CCMAPs (or similar) • Proportion of licensees that report that the process of developing CCMAPs (or similar) has encouraged and assisted them to reduce their emissions and/or exposure to climate risks • EPA is responding to all requests from licensees for additional support • EPA is tracking licensees' reported progress against their CCMAP commitments.

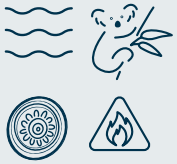
Action		Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
5(c)	Partner with DPE to seek to ensure climate change is being adequately addressed by proponents of activities we'll regulate, and that approvals contain appropriate conditions			Influence Require		**Deliverables** • EPA has developed climate change guidance and policies to support the EPA's input into the planning process • EPA has provided advice to DPE Planning to improve how proponents consider climate change in their applications. **KPI** • Proportion of development applications for activities the EPA will regulate, where the EPA has provided climate-change-related advice to DPE Planning.
5(d)	Require and support all our licensees to specifically consider how a changing climate might increase their risk of pollution incidents, and require them to update their pollution incident response management plans accordingly			Require Enable Enforce		**Deliverable** • EPA has updated the PIRMP Guidelines. **KPI** • Proportion of licensees with PIRMPs that explicitly consider climate change impacts.
6	Listen to and learn from Aboriginal people; create opportunities to engage and receive feedback on our climate change response			Listen		**Deliverables** EPA has: • consulted with Aboriginal people to meaningfully engage on the EPA's climate change response • sought feedback directly from Aboriginal people on the quality of this engagement • developed a plan for future engagement based on feedback and any actions arising from the initial consultation.

Action		Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
7	Regularly discuss our climate change approach with the EPA's Environment Youth Advisory Council, to ensure we're putting intergenerational equity into practice		Indirect	Listen		**Deliverables** EPA has: • engaged with its Environment Youth Advisory Council on its climate change response • sought feedback from the council on the quality of this engagement • developed a plan for future engagement based on feedback.
8	Prepare an annual EPA statement on climate change impacts, risks and adaptation to better understand and prepare for the impacts of climate change on our operations		Indirect	Educate Influence		**Deliverable** • EPA has prepared annual climate change impacts, risk and adaptation statements consistent with the TCFD framework.
9	Report on the progress of our action plan in our *Annual Report*		Indirect	Monitor Educate		**Deliverable** • EPA provides a summary of progress on its action plan, within its *Annual Report*.
10	Develop and implement programs to reduce greenhouse gas emissions from the waste sector, including our emissions target of net zero emissions from organic waste from landfills by 2030			Act Influence Educate Enable		**KPI** • The amount of organic waste sent to landfill per year (and associated emissions) is on track to meet the target of net zero by 2030.
11	Support the whole-of-government approach to streamlining project approvals in renewable energy zones			Influence Enable		**Deliverable** • EPA has contributed to the whole-of-government approach to streamlining project approval processes in REZs.

Action		Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
12	Develop and implement tailored behavioural change programs to encourage and enable greenhouse gas emission reductions	CO_2		Educate Enable Act		**Deliverable** • EPA has determined and prioritised the behavioural change programs it needs to develop. **KPI** • The proportion of identified high-priority programs that has been developed.
13	Ensure methane emissions from EPA-licensed onshore gas operators are minimised; review existing leak detection and repair programs	CO_2		Monitor Act Require Enforce		**Deliverable** • EPA has reviewed its licensees' LDAR programs and identified actions for improving them.
14	Regulate short-lived climate pollutants from our licensees	CO_2		Monitor Require Enforce		**Deliverable** • EPA is continuing to regulate short-lived climate pollutants.
15	Lead by example, maintaining efforts to become a carbon-neutral organisation by 2030	CO_2	Indirect	Act Influence		**Deliverable** • EPA has established a 2030 carbon-neutral pathway for its operations. **KPI** • EPA is on track to achieving its ambition to become a carbon-neutral organisation by 2030.

Action		Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
16	Develop a series of greenhouse gas emission reduction targets and related pathways for key industry sectors we license, to help guide our regulatory effort		Indirect	Educate Act		**Deliverable** • EPA has determined and prioritised which licensed industry sectors (or parts of those sectors) require emission reduction targets. **KPIs** • The proportion of identified high-priority sector targets that has been developed • As tracked by EPA, how each sector is performing against any relevant sector target.
17	Prepare or adopt climate change mitigation guidance for key industry sectors we license, including the performance outcomes we seek		Indirect	Educate Enable Act Influence		**Deliverable** • EPA has determined and prioritised the mitigation guidance it needs to prepare. **KPI** • The proportion of high-priority mitigation guides that has been prepared.
18	Progressively place greenhouse gas emission limits and other requirements on licences for key industry sectors			Act Require Monitor Enforce		**Deliverables** • EPA has determined which groups of licensees require greenhouse gas emission limits and other requirements on their licences, and has prioritised them • EPA has placed conditions on all NSW coal mine licences during 2023 that require all new large non-road diesel machinery to meet US EPA Tier 4 emission standards (or better). **KPI** • The proportion of identified high-priority licences with greenhouse gas emission limits or other requirements.

Action		Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
19	Encourage and support our regulated community to innovate		Indirect	Influence Act Enable		**Deliverables** EPA has: • reported back to the Government on whether its licensees require additional assistance to reduce their emissions or exposure to climate risks • shared information with its licensees about innovation programs, examples and opportunities • provided opportunities for feedback about innovation opportunities and barriers • addressed any relevant issues that have been raised • developed practical and transparent approaches for recognising licensees that have made significant efforts to reduce emissions and/or exposure to climate risks. **KPI** • Proportion of licensees that report that the EPA's support has encouraged and assisted them to innovate.
20	Protect the environment during emergency response and recovery, and strengthen our approach by being better prepared for the impacts of climate change			Act Enable		**Deliverable** • EPA has reviewed the *Environmental Services Functional Area Supporting Plan* (EnviroPlan), to ensure it has adequately addressed climate risks.
21	Ensure climate risks are considered in native forestry via the Forest Monitoring and Improvement Program			Influence		**Deliverables** • EPA supports and participates in the FMIP • EPA implements policy and regulatory improvements recommended by the FMIP Steering Committee to ensure the ongoing achievement of ESFM, including addressing climate change risks.

Action		Policy pillars	Co-benefits	Regulatory elements	Time frame	Key performance indicator or deliverable
22	Develop an adaptation and resilience delivery plan for the EPA		Indirect	Act Educate Enable		**Deliverable** • EPA has published an EPA adaptation and resilience delivery plan.
23	Develop and implement environmental resilience programs and initiatives			Act Enable		**Deliverable** • EPA has determined and prioritised the environment resilience programs and initiatives it needs to develop, based on immediate and long-term community needs. **KPI** • The proportion of identified high-priority programs and initiatives that has been developed.
24	Prepare or adopt climate change adaptation guidance for key industry sectors we license, including the performance outcomes we seek		Indirect	Educate Enable Act Influence		**Deliverable** • EPA has determined and prioritised the adaptation guidance it needs to prepare. **KPI** • The proportion of identified high-priority adaptation guidance that has been prepared.
25	Develop a climate change citizen-science strategy and community education program to encourage and support young people to make observations about changes in their local environment		Indirect	Educate Enable Listen		**Deliverable** • EPA has developed a climate change citizen-science strategy and it is being implemented • EPA has developed a community education program and online tools to support the climate change citizen-science strategy.

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