

Office of Energy and Climate Change

Net Zero Plan Implementation Update 2022



December 2022



Acknowledgement of Country

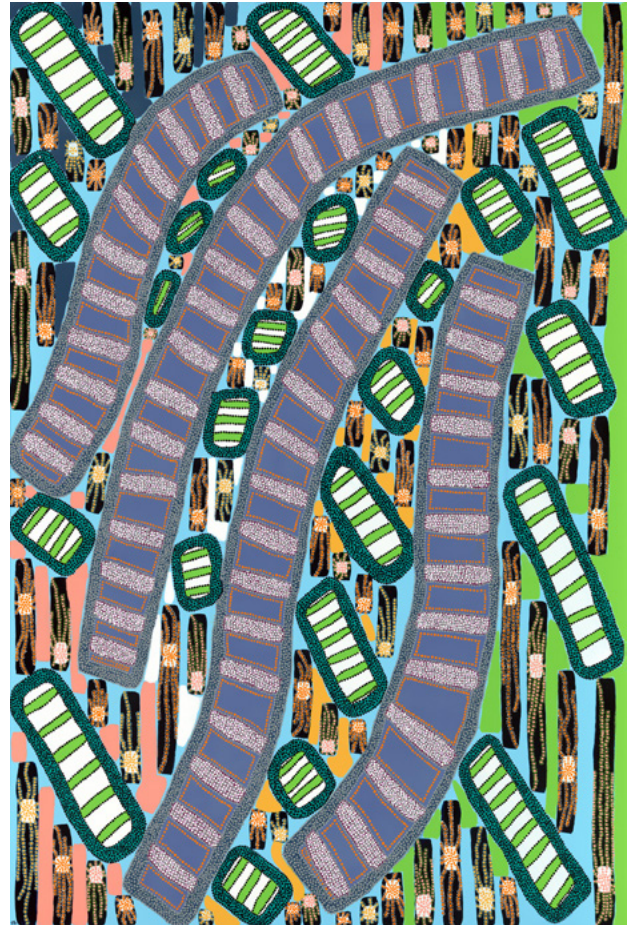
The NSW Treasury acknowledges that Aboriginal and Torres Strait Islander peoples are the First Peoples and Traditional Custodians of Australia, and the oldest continuing culture in human history.

We pay respect to Elders past and present and commit to respecting the lands we walk on, and the communities we walk with.

We celebrate the deep and enduring connection of Aboriginal and Torres Strait Islander peoples to Country and acknowledge their continuing custodianship of the land, seas, and sky.

We acknowledge the ongoing stewardship of Aboriginal and Torres Strait Islander peoples, and the important contribution they make to our communities and economies.

We reflect on the continuing impact of government policies and practices and recognise our responsibility to work together with and for Aboriginal and Torres Strait Islander peoples, families, and communities, towards improved economic, social and cultural outcomes.



Artwork: 'Regeneration' by Josie Rose

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Treasurer's foreword

There is no bigger fight that we as a nation must face, than the fight against climate change.

Many communities across the country have spent the last few years choking on the dust of drought, or on the smoke of bushfires. Now, many of those same communities have seen their homes and businesses inundated with one-in-a-thousand year floods, three times in the space of nine months.

As any of those families who have lost their homes to fire or flood, or their livelihoods to drought will tell you, this fight is one that we cannot afford to lose.

The costs of defeat are too great to contemplate.

Our action on climate change will determine the prosperity of our children and define the way we are remembered by our grandchildren.

“

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The NSW Government is determined that we take up that challenge. NSW was one of the first jurisdictions in the world to commit to a target of net zero by 2050. We released our Net Zero Plan in March of 2020 and since then have been getting on with the job, legislating the nation's biggest renewable energy program, and delivering its most ambitious hydrogen and electric vehicle strategies.

As significant as these achievements are, they cannot mark the limit of our ambition.

NSW can be a first mover attracting international capital, industry and talent, if it seizes its opportunity to be the engine room of the low carbon global economy.

As boardrooms and parliaments across the globe increasingly look to decarbonise their supply chains and their economies, they will search for low-cost, clean energy, new low-carbon technologies, and sustainably grown food and fibre – and they will turn to NSW.

The energy crisis reverberating around the world as a result of Vladimir Putin's illegal war in Ukraine and the decisions of overseas cartels, also show why we need to reduce our reliance on energy sources that can be taken hostage by authoritarian regimes. By switching to locally made renewable energy, we can not only build a cleaner future, we can also protect our energy security.

Our state is blessed with the best renewable energy resources, the most creative universities and businesses and the most innovative farmers anywhere in the world. We are ideally placed to help our global partners meet the challenges that they face, and to flourish in the international economy of the 21st century.

That is why the NSW Government is determined to play a leading role in the effort to protect our planet, not just to safeguard our shared home, but also to usher in a new era of wealth and underwrite the prosperity of the NSW people for generations to come.



The Hon. Matt Kean MP
Treasurer and Minister
for Energy

Introduction

In March 2020, the NSW Government announced its Net Zero Plan Stage 1: 2020–2030 (the Plan). The Plan laid the foundation for NSW’s action on climate change to reach its goal of net zero emissions by 2050. In September 2021, the NSW Government released an Implementation Update on the Plan, which included a target to reduce NSW emissions by 50% below 2005 levels by 2030.

The Plan sets out 4 priorities:



Priority 1

Drive the uptake of emissions reduction technologies that also support economic growth, or reduce cost of living or doing business.



Priority 2

Empower consumers and businesses to make sustainable choices.



Priority 3

Invest in the next wave of emissions reduction innovation to ensure economic prosperity from decarbonisation beyond 2030.



Priority 4

Ensure the NSW Government leads by example.

Each priority has a range of initiatives that will grow the economy, create employment opportunities and reduce greenhouse gas emissions over the decade to 2030 and beyond. The Plan's initiatives span a range of sectors including energy, transport, hydrogen and heavy industry, primary industries, waste and carbon financing.

This document provides an update on progress made under each of the four priorities of the Plan, including new programs and key achievements of existing emissions reduction programs and initiatives.



Since the 2021 Implementation Update, the NSW Government has introduced several new policies and programs that will contribute to reducing emissions and support our economy. Taking these into account, the Plan and related policies are projected to deliver emissions reductions in NSW of 55.2 million tonnes of carbon dioxide equivalent by 2035. This means that the State is projected to reduce its emissions by 70% below 2005 levels by 2035.

A 2035 target will provide NSW businesses and investors with the policy, regulatory and financial support they need to capitalise on the opportunities and mitigate the risks of the global shift to decarbonise. By reducing barriers to the adoption of low-emissions business models, activities under the Plan allow businesses to develop climate credentials and remain competitive as global demand for low-emissions goods and services increase.

It is also expected to trigger more innovation and development in our policies and programs, and increase sustainability options for consumers and businesses, further empowering them to make sustainable choices that suit their needs.

Taking into account the emissions reductions projected to be delivered by the Plan, based on current policy settings and anticipated action under already committed funding, the NSW Government is adopting a target to reduce emissions by 70% below 2005 levels by 2035. It is anticipated that the economic impacts of the Plan and related policies will attract more than \$39 billion in private investment and support more than 13,000 jobs by 2035, mostly in regional NSW.

Key highlights

2019

November 2019 NSW Electricity Strategy published, introducing the Energy Security Safeguard.

March 2020 NSW Net Zero Plan Stage 1: 2020–2030 is launched.

November 2020 Electricity Infrastructure Roadmap announced.

December 2020 NSW Parliament passes the Electricity Infrastructure Investment Act 2020.

2021

March 2021 Net Zero Industry and Innovation Program unveiled.

June 2021 NSW Waste and Sustainable Materials Strategy 2041 – Stage 1: 2021–2027 released.

June 2021 NSW Electric Vehicle Strategy published.

October 2021 NSW Hydrogen Strategy launched.

November 2021 Carbon Positive by 2028 for the National Parks and Wildlife Service (NPWS) published.

December 2021 Net Zero Emissions and Clean Economy Board members announced.

2022

February 2022 \$300 million announced to build the State's clean manufacturing base.

February 2022 The \$250 million Renewable Manufacturing Fund announced.

March 2022 Primary Industries and Productivity Abatement Program unveiled.

May 2022 State Infrastructure Strategy 2022-2042 published.

June 2022 NSW Climate Change Adaptation Strategy released.

June 2022 Sustainable Farming Program launched.

June 2022 Zero Emissions Buses Transition Plan announced.



August 2022 Sustainable Buildings State Environment Planning Policy (SEPP).

August-September 2022 NSW Net Zero Emissions Dashboard and related data and methods papers published.

September 2022 Future Transport Strategy published.

September 2022 Blue Carbon Strategy launched.

September 2022 The Draft NSW EPA Climate Change Policy and Action Plan released.

September 2022 The updated Peak Demand Reduction Scheme commenced.

October 2022 Net Zero Cities Action Plan published.





Priority 1

Drive uptake of proven emissions reduction technologies

Priority 1

The NSW Government's first priority is to provide a pathway to deploy at scale those low emissions technologies that grow the economy and create jobs. This is critical to the Government's commitment to deliver net zero emissions, strengthen the State's prosperity, and reduce the cost of living pressures currently felt by households and businesses.

The NSW Government is engaged in creating new markets for low emissions technologies, removing unnecessary barriers to their uptake and making co-investments to address early mover costs. This will ultimately help ensure the long-term deployment of these technologies. This section outlines highlights under this priority.



Energy

Electricity Infrastructure Roadmap

Over the next 15 years, it is expected that 4 of the State's coal fired power stations will be retired. This represents three quarters of NSW's electricity generation.

In November 2020, the NSW Government announced the commencement of the Electricity Infrastructure Investment Act 2020, the enabling legislation underpinning the implementation of the [Electricity Infrastructure Roadmap](#).

The Roadmap is a nation-leading, coordinated plan to transition and modernise the State's existing electricity system as our aging power stations reach the end of their life and are retired.

The Roadmap is built on 5 foundational pillars:

- 1. Driving investment in regional NSW** by supporting the development of our regions to be the State's economic and energy powerhouse of the future.
- 2. Delivering energy storage infrastructure** to create additional stability and reliability in NSW's electricity system.
- 3. Delivering Renewable Energy Zones** to be the modern-day equivalent of traditional power stations. The development of each zone will be coordinated. They will combine generation, transmission, storage and system strength services to ensure a secure, affordable and reliable energy system.
- 4. Keeping the grid secure and reliable** by backing the system with sufficient dispatchable electricity infrastructure such as gas, batteries or other reliable sources that can deliver to the market on demand.
- 5. Harnessing opportunities for industry** by creating a low carbon future, and providing access to cheap, clean and reliable energy. This will create a competitive advantage for NSW, and empower new and revitalised industries to re-industrialise and attract even more investment, jobs and innovation.





The Roadmap provides a plan to accelerate and coordinate new energy infrastructure, including through the development of 5 dedicated Renewable Energy Zones (REZs). It has a legislated target of at least 12 gigawatts (GW) of renewable energy generation capacity and 2 GW of long duration storage capacity by 2030. As of September 2022, there are almost 200 large-scale renewable energy projects totalling around 36,700 megawatts (MW) progressing through the NSW planning system, which represents around \$50.4 billion in investment.

The Roadmap is expected to create significant economic opportunities for New South Wales. Alongside the billions of dollars of investment, the Roadmap will deliver an estimated 6,300

construction jobs and 2,800 ongoing jobs, mostly in regional New South Wales, as well as \$1.5 billion in lease payments to regional landholders by 2042.

The Roadmap is also expected to reduce average household electricity bills by \$130 per year (compared to no action being taken) between 2023 and 2040, and support an increase of 23,600 jobs from 2032–2037.

All Roadmap entities required to deliver outcomes under the Electricity Infrastructure Investment Act 2020 have been appointed or established. AEMO Services, as the Consumer Trustee under the Roadmap, is tasked with running competitive tenders for Long Term Energy Service Agreements (LTESAs) and REZ Access Rights to support investment, construction and operation of renewable energy generation. The first tender is underway with an indicative target size of 2,500 gigawatt hours (GWh), or around 800 MW, of annual generation and 600 MW of long-duration storage. The declarations for all 5 Renewable Energy Zones, which include a map of the geographical area, are also well progressed with the Central-West Orana and New England REZs finalised and the South-West, Hunter-Central Coast and Illawarra REZs to follow.

A Registration of Interest (ROI) process was run for the Hunter-Central Coast REZ between December 2021 and February 2022, and for the Illawarra REZ between June and July 2022. These attracted a significant response with commercial interest in renewable generation and storage projects representing more than \$100 billion of potential investment in the Hunter-Central Coast REZ, and over \$43 billion in potential investment registered for the Illawarra REZ.

Other milestones from the Roadmap include:

- Establishing the **Renewable Energy Sector Board** in February 2021, with representation from unions, steel, electricity, manufacturing and construction sectors, as well as electricity customers. The Board developed a plan for the NSW renewable energy sector that sets out how to cost-effectively maximise the use of local content, workers and foster opportunities for apprentices and trainees, in generation, storage and network infrastructure projects under the Roadmap.
- Appointing the **Electricity Infrastructure Jobs Advocate** in March 2022. The role of the Jobs Advocate is to provide advice on strategies and incentives to encourage investment, development, workforce development, employment and education and training opportunities in the energy sector. The Jobs Advocate will also provide advice on road, rail and port infrastructure required in those regions to promote export opportunities for generation, storage and network technology.

- In June 2022, procurement for the **700 MW Waratah Super Battery** was launched by EnergyCo to engage developers and sites, in response to the announcement of the early closure of Eraring Power Station.
- Opening the first tender for **Long-Term Energy Service Agreement** contracts for generation and storage across NSW has now opened. These will be evaluated, and contracts awarded, by the Consumer Trustee early next year.

The Roadmap's implementation is supported by \$464 million in NSW Government funding to develop REZs and to establish institutions that will administer and implement the framework. It is also supported by the Government's \$74 million Pumped Hydro Recoverable Grants Program. This will help to create a pipeline of shovel ready pumped hydro projects to compete for Roadmap support of long duration storage agreements. \$44.84 million has already been awarded to 5 pumped hydro projects with a combined capacity of almost 1.75 GW of storage capacity.



Transmission Acceleration Facility

The 2022 State Budget included the \$1.2 billion Transmission Acceleration Facility. This fund is a key component of the NSW Government's plan to ensure reliable and affordable energy. It will support the Roadmap and play an important role in fast tracking the delivery of critical transmission infrastructure to deliver cheaper and more reliable power.

The facility will be used to undertake development activities to accelerate transmission projects including the Central-West Orana Renewable Energy Zone, the New England Renewable Energy Zone, the Waratah Super Battery Project and the Hunter Transmission Project.

The Transmission Acceleration Facility is expected to help create 2,700 direct construction jobs across the state over its life and is intended to be fully repaid by 2040.



Energy Security Safeguard

The NSW Government announced the [Energy Security Safeguard](#) (the Safeguard) in 2019.

The Safeguard has 3 components:

1. **Energy Savings Scheme (ESS)** is NSW's largest energy efficiency program. The scheme places an obligation on scheme participants to meet energy savings targets by investing in certified energy savings projects. Through the scheme, households and businesses that choose to implement energy savings projects, such as lighting or air conditioning upgrades, can receive a discount or other financial incentive.
2. **Peak Demand Reduction Scheme (PDRS)** commenced in September 2022. The PDRS is a similar market-based certificate scheme that encourages the deployment of peak demand reduction technologies, such as batteries, smart pool pumps and electric vehicle charges. It also incentivises the use of these technologies in times of low energy demand. It will target reductions in the projected one-in-ten year maximum demand, commencing at 0.5% in 2022 before gradually increasing to 10% by 2030.
3. **Renewable Fuels Scheme (RFS)**, which will commence in early 2024, is a component of the NSW Hydrogen Strategy. The RFS will set a production target for green hydrogen, starting at 90,000 gigajoules (GJ) in 2024 and increasing to 8 million GJ per year by 2030. The RFS will support industry to grow new supply chains that can improve the affordability, reliability and sustainability of green hydrogen in NSW. It will also prepare industries to remain competitive in decarbonised markets. The scheme is in early development and industry consultation phase.

Under the Plan, the NSW Government is investing \$25 million in a new Safeguard Acceleration Program to fast track and streamline implementation of the Safeguard. This will help industry get ready for the PDRS and broaden the activities they offer under the existing ESS.

The Safeguard already supports over 1600 jobs through the ESS for those employed in the installation of energy saving appliances and the equipment industry. The expanded Safeguard out to 2050 will continue to support those jobs, as well as give more households and businesses the opportunity to switch to energy efficient and smart technology that can help to reduce their power bills. The Safeguard also helps lower energy prices across NSW by reducing the overall demand for electricity. By driving efficiencies in the energy grid, the scheme makes a significant contribution to the State's emissions reduction goals.



The 2021 annual report published by the Scheme Regulator and Administrator, the Independent Pricing and Regulatory Tribunal, found that activities from the scheme had saved an estimated 3.8 million megawatt-hours (MWh) of energy in 2021, with households and businesses that implemented energy efficiency measures saving an estimated \$574 million.



Energy Bill Buster



\$128 mil

The NSW Government has committed \$128 million dollars for the new Energy Bill Buster package.

This will support up to 30,000 energy rebate recipients to receive a solar system or a suite of energy efficient appliances or upgrades in lieu of receiving their energy rebate. Eligible rebate recipients are estimated to save up to \$600 per year by reducing their energy consumption and contributing towards the State's emissions reduction goals.

Renewable gases

The NSW Government is supporting the uptake of renewable gases, such as green hydrogen and biogas, to reduce emissions from natural gas, diesel and other fuels.

NSW Hydrogen Strategy

In October 2021, the NSW Government released its [Hydrogen Strategy](#). This will support industry to transform NSW into Australia's largest consumer of green hydrogen, activating new domestic markets to stimulate private sector investment and support long-term industry growth. The Strategy is expected to attract over \$80 billion of investment to 2050, enabling industry to slash the cost of hydrogen to \$2.80 per kilogram and provide up to \$3 billion in incentives, driving deep decarbonisation and set NSW up as a clean energy and economic superpower. The Strategy includes stretch targets to support the installation of 700 MW of electrolyser capacity, targeting 10,000 hydrogen vehicles on the road and 100 refuelling stations operational by 2030. It will also help to convert 20% of the NSW Government heavy vehicle fleet to fuel cell electric vehicles.



There are 60 actions to help the private sector to innovate, invest and deploy hydrogen projects, including:

- Establishing green hydrogen hubs, starting in the Illawarra and Hunter regions, through our hydrogen hubs initiative
- Extending the Energy Security Safeguard to include a new Renewable Fuel Scheme with a legislated hydrogen target reaching eight petajoules by 2030
- Providing exemptions for green hydrogen production from government electricity schemes, such as the Energy Savings Scheme and Peak Demand Reduction Scheme
- Providing a 90% exemption from electricity network use of system charges for green hydrogen producers who connect to parts of the network with existing available capacity
- Supporting the building of a hydrogen refuelling network and heavy vehicle trials across NSW's key freight corridors.

A commercial hydrogen industry could see the Gross State Product increasing by over \$600 million per annum from 2030 and see up to 10,000 more jobs in the State. Furthermore, green hydrogen can help drive deep decarbonisation in the 'hard to abate' market segments within the transport, industrial and energy sectors which account for around 24 Mt (or 18%) of NSW's annual emissions.

NSW Waste and Sustainable Materials Strategy 2041

The \$356 million NSW Waste and Sustainable Materials Strategy 2041 identifies the opportunity to capture biogas from the State's waste streams, such as food organics.

The NSW Government is investigating options to incentivise the uptake of anaerobic digestion facilities and biogas production. Funding has also been set aside under the Waste Strategy to support the recovery of biogas from waste materials.



Industry

Net Zero Industry and Innovation

In March 2021, the NSW Government announced the \$750 million Net Zero Industry and Innovation Program (NZIIP) as its plan to accelerate decarbonisation across high emitting industries and their supply chains, and invest in clean technology development. In February 2022, in response to the early closure of the Eraring Power Station, the NSW Government announced an additional \$300 million to build the State's clean manufacturing base. The government also announced a new \$250 million fund to boost locally manufactured components and assembly for electric vehicles and the renewable energy sector.

The NZIIP has 3 focus areas:

- 1. Clean Technology Innovation (\$195 million):** to research, develop and commercialise new and emerging emissions reduction technologies and establish NSW as a leader and exporter of clean technologies. This will ensure NSW has technologies available after 2030 to make the emission reductions required to achieve net zero by 2050. More information is available under Priority 4.
- 2. New Low Carbon Industry Foundations (\$475 million):** lay the foundations for low emissions industries by building enabling infrastructure and increasing the capability of supply chains in NSW. The program will also support the creation of Clean Manufacturing Precincts to help grow low carbon industries. This funding includes at least \$70 million to support hydrogen hubs in the Hunter and Illawarra and a further \$37 million to fund hydrogen refuelling initiatives in the NSW Hydrogen Strategy.

- 3. High Emitting Industries (\$380 million):** to support existing high emitting industrial facilities to reduce their emissions and strengthen their resilience significantly. Funding will be allocated to facilities undertaking major capital upgrades of plant and equipment to achieve significant emissions reduction. Initiatives under this program will help NSW industry reduce emissions and take advantage of the emerging international demand for low emissions products and services. New South Wales has the potential to position itself as a world leader in low emissions exports. The Government's support for high emitting industry to achieve lower carbon emissions will be crucial in helping the State realise that potential.

One of the first initiatives to receive funding, is a \$13 million High Emitting Industries decarbonisation grant to Orica's Kooragong Island manufacturing facility, announced in November 2021. This grant will support a \$37 million project to reduce 567,000 tonnes of carbon dioxide equivalent (t CO₂e) each year from Orica's nitric acid plants. The remaining funds will be financed through a low-interest loan provided by the Australian Government through the Clean Energy Finance Corporation. The project is expected to be commissioned by mid-2023.

Business Decarbonisation

The NSW Government has committed \$22 million to support businesses to make operational improvements, prepare projects and plan their decarbonisation pathways.

This initiative focuses on building the energy and carbon abatement services sector and improving its capability to support businesses to decarbonise.

This will provide a strategic support for businesses to decarbonise that entails:

- upgrading energy metering and monitoring systems
- establishing plans to decarbonise based on real data

- accessing technical services offers for systems and technologies most critical to reaching net zero emissions.

From July 2022, NSW businesses have been able to access a \$12 million metering and monitoring package to purchase and install submeters which can provide useful data about equipment performance and help businesses save energy. Submeters can also help businesses take advantage of ESS and PDRS incentives. The package supports businesses at different stages of the metering and monitoring process, from planning to implementation and continuous improvement.



Transport

NSW Electric Vehicle Strategy

The NSW Government's Electric Vehicle Strategy, announced in 2021, is expected to drive sales of EVs to more than 50% of new car sales by 2030-31 and sets an objective for the majority of new car sales to be EVs by 2035, preparing the transport sector for a low-emissions future.

\$633 million has been committed to the Strategy in tax cuts, incentives and charging infrastructure through the following initiatives:

- **Reducing upfront costs:** EV buyers are eligible to receive rebates of \$3000 for the first 25,000 EVs sold for under \$68,750. Stamp duty has also been removed for EVs under \$78,000. As of 31 August 2022, 3046 rebates and 4508 stamp duty refunds have been paid. A road user charge will replace stamp duty for all other EVs and plug-in hybrid cars from July 2027 or when EVs make up at least 30% of new car sales.
- **Electric fleets:** In November 2021, the NSW Government announced a \$105 million fleet incentive program to drive up EV purchases in commercial fleets, with funding rounds running every 6 months. The first round allocated \$4.5 million to support 851 new EVs and associated chargers, and round 2 is now underway. The NSW Government will also electrify its own passenger vehicle fleet of about 12,000 cars by ensuring that 50 % of new purchases or leases are fully electric by 2026 and 100 % by 2030. Encouraging EV fleet purchases will help to establish a high-quality second-hand market, which is key to making EVs more affordable.
- **A world-class charging network:** \$209 million will be invested over the next 4 years to ensure NSW drivers have access to widespread, world-class public chargers and the confidence to driver their EV wherever and whenever they need to. This includes:
 - \$149 million to co-fund the delivery of ultra-fast EV charging stations across the State
 - \$20 million in grants for tourist locations to install destination chargers
 - \$20 million for charging infrastructure in or near commuter car parks and other NSW Transport-owned sites
 - \$10 million to help upgrade residential strata buildings to make them 'EV-ready'
 - \$10 million for an EV kerbside charging initiative to increase the mix of charging options for the 30% of the population without access to private carparking spots.



Future Transport Strategy

The Future Transport Strategy sets the strategic directions for Transport for NSW (TfNSW) to achieve world-leading mobility for customers, communities, businesses and the people of NSW. It is part of a suite of government strategies, policies and plans that integrate and guide land use and transport planning across NSW.

“
The Strategy includes an objective for TfNSW to achieve net zero emissions from their operations and fleet by 2035.
”

Transport for NSW will take action to achieve net zero emissions from their operations and fleet by 2035, including

- Procuring 100% renewable energy for all electricity
- Electrifying TfNSW buses, ferries, corporate vehicles and non-passenger vehicle fleets
- Implementing innovations that will improve energy efficiency and/or reduce energy demand
- Progressively identifying opportunities for strategic rail electrification
- Supporting the optimal use of green hydrogen



Buildings

Sustainable Buildings SEPP

The NSW Government is committed to the development of sustainable and resilient homes and buildings. The new [Sustainable Buildings State Environmental Planning Policy \(SEPP\)](#) encourages the design and delivery of more sustainable buildings across NSW. It sets sustainability standards for residential and non-residential development and starts the process of measuring and reporting on the embodied emissions of construction materials.

The goals of the SEPP are to minimise the consumption of energy and potable water; reduce greenhouse gas emissions from energy use; monitor the embodied emissions of building materials; and deliver buildings that are comfortable in summer and winter.





Primary industries

Primary Industries Productivity and Abatement

In March 2022, the NSW Government launched the [Primary Industries Productivity and Abatement Program \(PIPAP\)](#) to support farmers and land managers across the State to access environmental markets, reduce their emissions and enhance biodiversity on their land alongside production.

PIPAP will reduce direct land emissions from agriculture and increase sequestration in soils and vegetation, including in coastal and marine zones. These interventions will diversify regional revenue streams, drive systemic change to increase carbon abatement, value multiple environmental, social and cultural benefits, increase productivity, and facilitate investment in NSW low carbon goods and services.

Sustainable Farming

The \$206 million [Sustainable Farming Program](#) aims to encourage and enable investment in natural capital. It intends to support farmers who are implementing sustainable land management practices, while enhancing their long-term productivity and increasing their access to the market and other financial opportunities.

A core aspect of the program will be recognition of farmers who adopt sustainable land management practices through a government-backed certification scheme, supported by accredited assessors. Farmers will receive incentive payments for signing up, achieving and maintaining certification.

Blue Carbon

On 1 September 2022, the Minister for Environment and Heritage, the Hon James Griffin MP, announced the [NSW Blue Carbon Strategy 2022-2027](#).

Blue carbon is the term used to describe carbon captured and stored by marine and coastal ecosystems. Blue carbon ecosystems, which include seagrass, mangroves and saltmarsh, can store substantially more carbon per area than land-based forests and, if undisturbed, can store this carbon in soils for many years.

Projects that restore blue carbon ecosystems, such as the reintroduction of tidal flows to restore coastal wetlands, can help deliver significant emissions reductions and may enable carbon credits to be earned.

In addition to emissions reduction, blue carbon ecosystems provide a range of co-benefits to landholders, businesses and the community. Benefits include improved water quality, coastal protection, breeding habitat for commercial and recreational fishes, tourism, and Aboriginal cultural benefits.



The NSW Blue Carbon Strategy 2022–2027 provides a roadmap to support blue carbon projects in NSW. It presents a significant opportunity to deliver co-benefits that contribute to the State’s net zero goals, support regional economic activity, restore coastal ecosystems, and boost the State’s natural capital.

The strategy identifies 5 overarching priorities and the actions to be delivered under each priority over the next 5 years:

- Conserving blue carbon ecosystems and supporting their adaptation and migration.
- Delivering blue carbon projects on public, private and First Nations peoples-owned and managed land.
- Embedding blue carbon in coastal and marine policy planning and management.
- Progressing blue carbon research.
- Promoting blue carbon investment.

The Strategy is a landmark initiative for NSW to support restoring coastal biodiversity and ecosystems while simultaneously working towards emissions reduction.

Waste

Increased diversion of organics from landfill and processing technologies like composting and anaerobic digestion can substantially reduce emissions.

The NSW Government is committed to reducing the State's emissions from its waste and resource recovery system as part of its [NSW Waste and Sustainable Materials Strategy 2041](#) (the Waste Strategy). The Waste Strategy pledges to achieve net zero emissions from organic waste to landfill and halve the amount of organic waste sent to landfill by 2030, with several initiatives under design to enable the State to achieve these targets.

The Government will require landfills over a certain size, and all expanded or new landfills, to have gas capture technology, and will invest \$7.5 million to support the installation of this important emissions abatement technology.

These initiatives will help minimise the emissions produced by organic waste decomposing in landfill.

In addition, the NSW Government is designing the requirement for a \$37 million Carbon Recycling and Abatement Fund, which will support innovative circular economy approaches that manage waste and materials more efficiently and reduce emissions. This will include supporting the innovative use of low carbon recycled materials, incentivising the production of biogas from waste materials and promoting circular practices for the development of buildings, infrastructure and precincts.





Priority 2

Empower consumers
and businesses to make
sustainable choices



Priority 2

The NSW Government is committed to providing individuals and businesses with more information about the emissions associated with the products they use on a day-to-day basis and providing them opportunities to reduce their emissions footprint. This includes increasing transparency around the price, quality and sustainability of goods and services to ensure consumers are informed, and businesses are motivated to compete for the demand for low emissions products.

Energy

Electricity

The NSW Government is committed to improving transparency in the electricity retail market and empowering customers who wish to consider environmental factors when selecting an energy provider or plan. The NSW Government is working closely with the [Australian Energy Regulator](#) and the [2022 GreenPower Program Review](#) to enhance information available to consumers about retailers' emissions profiles and the calculations behind the profiles.

Gas

The NSW Government has launched Australia's first renewable gas certification scheme to provide consumers with more options to buy renewable gas with confidence. The scheme is being piloted at the [Malabar Biomethane Injection Project](#), Australia's first wastewater biomethane facility. The new facility will convert raw biogas into biomethane, which will then be injected back into the NSW gas distribution network.

Buildings

The NSW Government is investing more than \$9 million through the Net Zero Buildings initiative to accelerate transformation of the built environment towards net zero emissions by:

- Developing a world-leading framework to measure, benchmark and certify the embodied emissions of construction and building materials to be integrated into the National Australian Built Environment Rating System (NABERS)
- Working with industry to grow the emerging market for low emissions construction materials via the Materials and Embodied Carbon Leaders' Alliance bringing together more than 120 founding member companies and bodies
- Providing an enabling environment for NSW Government agencies and industry to specify low emissions building materials in their construction projects confidently (Low Emissions Specifications program)
- Working with the Commonwealth, other jurisdictions, finance and the social housing sector to deliver the National Trajectory for low-energy buildings via home energy ratings and disclosure at the point of sale and lease to support the mass market to value and deliver sustainable homes.



Transport

The NSW Government is developing a program to allow NSW drivers to offset their vehicle emissions at the point of registration renewal. This voluntary scheme will be embedded into the existing NSW vehicle registration renewal process. It will allow drivers to purchase Australian Carbon Credit Units across a diversity of projects that will deliver social, economic and environmental co-benefits in New South Wales.

A vehicle carbon dioxide (CO₂) emission star rating program is being developed for internal combustion engine (ICE) and electric vehicle light vehicles. This simple six-star rating system will provide information to car buyers during their online research into the purchase of a new or used vehicle, as well as provide guidance to consumers at a vehicle's point of sale. The intention of the star rating is to provide information on the efficiency and environmental performance of vehicles, to influence consumer purchase choices and contribute toward NSW and Australia-wide net zero targets.

Other information resources are being prepared for consumers and fleet managers to better understand the benefits and opportunities with low and zero emissions vehicles. A series of EV test drive days have been commissioned to raise awareness of battery EVs and encourage fleet and private vehicle owners to consider them as an option for their next vehicle purchase.

The Low Emissions Specification program is developing electric vehicle charger technical specifications to provide guidance on how to safely, cost-effectively and efficiently charge an EV in the home or commercial settings. This will help support the increased sales of passenger and light commercial EV vehicles under the NSW Electric Vehicle Strategy.



Waste

The Plastics and Circular Economy Act 2021 was passed by NSW Parliament in November 2021. The Act phases out a number of problematic single-use plastics. The ban on supply of lightweight plastic bags commenced on 1 June 2022. The ban on supply of certain other items will commence on 1 November 2022, including single-use plastic straws, cutlery, plates and bowls (without spill-proof lids), stirrers, cotton buds, plates and bowls, expanded polystyrene food service items, and microbeads in rinse-off personal care products.

On 23 September 2022 the NSW Government made \$9 million available as part of the Circular Plastics Program to support businesses in the transition to better plastic products. This will support the NSW Government's target to triple the plastics recycling rate by 2030.

The \$46 million GO FOGO grants opened for applications in September 2022 to support councils to roll out new food organics and garden organics (FOGO) services to 2 million NSW households. These grants will support the requirement in the Waste Strategy for the separate collection of food and garden organics from all NSW households by 2030.



Priority 3

Invest in the next wave
of emissions reduction
technology



Priority 3

The NSW Government is 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. Targeted investment to fast track the research, development and commercialisation of low emissions technologies will help safeguard NSW economic prosperity and propel the State's movement towards net zero emissions.

Clean technology innovation

As part of its Net Zero Industry and Innovation Program, the NSW Government has committed \$195 million to support the continued development and innovation of emerging clean technologies.

The Clean Technology Innovation focus area supports research, development and commercialisation of low emission technologies, especially in industries where they do not exist.

Recent grants that have been launched include the:

- \$40 million research and development grants, administered by the NSW Environmental Trust. These grants will support the development of commercially viable technologies and services to reduce emissions in high emitting or hard-to-abate industries
- \$45 million enabling infrastructure grants to rapidly test and repeatedly innovate early-stage clean technologies, and progress them on a pathway to commercialisation
- \$40 million clean technology commercialisation grants initiative to accelerate, commercialise and scale-up proven clean technology innovations for trade in Australian and international markets

- \$10 million clean technology ecosystems grants initiative to supporting incubators for trade in Australian and international markets
- \$10 million clean technology ecosystems grants to support incubators, pre-accelerators, accelerators. They will equip clean technology start-ups and researchers with the skills and resources they need to succeed.

Research and development grants





- The \$40 million clean technology research and development grants program opened for expressions of interest (EOI) in October 2021 with \$5 million in grants on offer. 85 EOIs were received with a combined value of approximately \$97 million
- EOIs for the remaining 3 grants streams have been completed with a high level of market interest. The strong interest has showcased the NSW Government's intent to be a national leader in clean technology. We have a deep commitment to supporting a mature and thriving clean technology sector that will be critical to achieving net zero emissions in NSW by 2050.

NSW Decarbonisation Innovation Hub

Funded through the NSW Environmental Trust, the Decarbonisation Innovation Hub brings together researchers, industry and government to accelerate new technologies to decarbonise NSW. This \$15 million initiative will help create new jobs and high-tech businesses, while developing expertise in emission reduction technology.

The Office of Chief Scientist and Engineer will oversee the Hub's work until 2030. The Hub has a consortium of partners including the University of New South Wales, University of Newcastle, University of Wollongong, Western Sydney University, University of Technology Sydney, Charles Sturt University, the NSW Department of Primary Industries and Climate-KIC.



Priority 4

Ensure the NSW
Government leads
by example

The NSW Government purchases around \$30 billion of goods, services and construction each year, employs 10% of the State’s workforce and manages approximately 15% of all NSW land. The Government’s fourth priority is to play a leading role by being an early adopter of sustainable goods, services and practices, and maximising the environmental value of the assets it oversees.

Government agencies have also been implementing energy efficiency measures at their buildings to help reduce energy-related carbon emissions and energy costs.

In 2020-21, NSW Government energy consumption decreased for the fourth year in a row. Government agencies

reported 2,090 GWh of annual energy consumption, a 3% decrease from 2019-20. The decrease in consumption generated \$9.2 million cost savings for government agencies. At 75%, most energy use is electricity, followed by natural gas at 22% and LPG with 3%. Although the energy use is similar to the baseline year 2012-13, the scope of government operations has expanded over this period. Some highlights are outlined below.

In 2022, 30 NSW Government agencies completed net zero plans for their operations.



Energy

The NSW Government uses its purchasing power to leverage more large-scale storage energy projects in the State, driving investment in infrastructure and supporting more renewable energy to enter the grid.

In 2020-21 NSW Government agencies:

- Reported 111 new energy saving projects, including a wide range of measures from improved heating, ventilation and air conditioning (HVAC) systems through to lighting upgrades and solar photovoltaic (PV) installations. These energy saving projects will save an estimated \$3.7 million (cost efficiencies) and 15.4 million kWh/year (consumption efficiencies)
- Delivered 252 solar feasibility site assessments across 7 agencies, identifying 133 viable opportunities for 8.1 MW of rooftop PV, saving 10,500 MWh and \$1,600,000 annually
- Piloted Shell's energy management service under the whole-of-government electricity contract, identifying energy savings for emissions reductions of 7,000 tonnes and cost savings of \$1.2 million each year for 7 large agencies.

The NSW Government has also increased its solar on government buildings target to achieve 126,000 MWh a year of solar generation by 2024. To date, the NSW Government has installed over 42,000 MWh of rooftop solar generation capacity across a range of government buildings including schools, hospitals, museums and public housing.

The Smart Energy Schools Pilot Project, announced in 2020, drove the installation of solar PV, batteries demand response and Virtual Power Plant (VPP) technology at 60 schools. A VPP is a collection of individual power systems, such as rooftop solar and batteries, aggregated and managed centrally, meaning that the electricity supply can be turned up and down as required to keep the network stable. The next stage of the program is to conduct an expression of interest and test private sector interest and capability to deploy this model across all 2000+ NSW public schools. This means that over 8 million square metres of roof space could be transformed into a source of renewable energy.

Under the NSW Government Resource Efficiency Policy (GREP), offices and data centres owned or leased by the NSW Government and above a given size are required to achieve a specified NABERS energy rating of at least 5 stars (metropolitan) or at least 4.5 stars (regional or data centres). Property NSW reported an overall portfolio result across 22 owned metropolitan and regional buildings of 5.3 stars for NABERS energy, representing an improvement of 0.6 stars on energy efficiency over 12 months.

In addition, under the GREP all general government sector agencies except NSW Local Health Districts are required to purchase a minimum of 6% GreenPower. GreenPower is 100% renewable electricity that consumers can access to help them reduce their emissions and support Australian renewable energy projects. GreenPower retail products are accredited and audited by the National GreenPower Accreditation Program, a program managed by NSW Treasury on behalf of a national steering group of state and territory governments.



Transport

Electric Vehicles

As part of its [Electric Vehicle Strategy](#), the NSW Government has committed to using its bulk purchasing power to increase the range of EV models available for sale in New South Wales. The NSW Government has set a target of electrifying all Government passenger fleet procurement by 2030, with an interim target of 50% EV procurement by 2026, stimulating a second-hand market.

Zero Emissions Buses

Transport for NSW has committed to transitioning its bus fleet of approximately 8,000 to Zero Emission Buses. This transition, powered by renewable energy, is a key initiative to support NSW achieving net zero by 2050 and is leading the way nationally in the transition to greener, smoother and quieter buses.

Under the [NSW Zero Emission Buses Transition Plan](#), Greater Sydney will be first to fully transition all diesel and Compressed Natural Gas buses to zero emission buses by 2035. Outer Metropolitan regions will follow by 2040 and Regional NSW by 2047. This staggered approach prioritises sustainability and local manufacturing and allows local industry, operating partners and training organisations time to plan and prepare.

In Sydney, there are more than 100 electric buses on the road, with 200 forecast to be in service by mid-2023. The NSW Government will invest \$218.9 million over the next seven years to support the bus fleet move to zero emissions technology.

Sydney Trains Net Zero

As of July 2021, Sydney Trains services achieved 100% net zero emissions from electricity through agreements to power the system with renewable energy until at least the end of 2030 – four years ahead of the 2025 target in the Future Energy Strategy schedule – becoming the first Australian heavy rail network to do so. This ongoing use of net zero electricity will reduce emissions by around 700,000 tCO₂e per year, a reduction in Transport's operational emissions of approximately 50% from 2019 levels.

Sydney Trains has also set a target to reduce the rate of energy consumption by at least 10% by 2025. This will be achieved through energy efficiency initiatives for rolling stock heating, ventilation and air conditioning, maximising energy recovery from regenerative braking and onsite solar photovoltaic system projects to improve energy consumption.



Sustainable Procurement in Infrastructure

Transport for NSW is developing the Sustainable Procurement in Infrastructure initiative to provide a framework for delivery of goals outlined in the Transport Sustainability Plan 2021. Solutions are being co-created with our industry partners – with one of the largest industry engagement campaigns for a corporate document at Transport.

The initiative is specifically focused on decarbonising infrastructure and transitioning to a circular asset model.

Over the last year Transport has created a series of Baseline Sustainability Requirements that set minimum expectations for reduction in infrastructure related emissions, including embodied emissions. The Baseline Sustainability Requirements address both Energy & Carbon and Circular Economy to ensure projects reduce waste and pollution while increasing the use of renewable, recycled and low embodied carbon materials through design optimisation in Transport projects.

Transport has completed a portion of planned workshops with their industry partners including the following themes:

- Baseline Sustainability Requirements
- Roadmap to Net Zero Infrastructure at Transport
- Design for Decarbonisation and Circularity

The initiative is leveraging global best practice already identified including UK mega project High Speed 2 (HS2) and National Highways UK, formally Highways England.

Sydney Metro zero emission electricity for Metro operations

Sydney Metro is Australia's biggest public transport project. By 2030 Sydney will have a network of four metro lines, 46 stations and 113 km of new metro rail. The metro program includes the operational Metro North West Line and three projects under construction: City and Southwest, West and Western Sydney Airport.

Sydney Metro has committed to using zero emission electricity for its metro operations. For the North West Line, this has been achieved through the ongoing purchase of 134,000 Large Scale renewable energy Generation Certificates (LGCs) every year from the Beryl Solar Farm in regional NSW, via a Green Products Purchase Agreement (GPPA) which commenced in 2019. Sydney Metro retires the amount of LGCs, which is equivalent to the electricity consumed annually for metro operations.

The Beryl Solar Farm GPPA was the first agreement of its kind for transport projects in Australia and has provided a model for many subsequent projects.

The strategy for securing zero emission electricity for the future operation of the City & Southwest, West and Western Sydney Airport lines is currently being finalised.

Waste

In 2020-21, 52 agencies reported \$57 million of waste disposal expenditure. The top 3 waste streams were general waste, clinical and pharmacy waste and comingled recyclables.

The NSW Government is using its purchasing power to stimulate circular economy innovation and demand for recycled content. The NSW Government is implementing a Waste Strategy requirement for government agencies to preference products that contain recycled content where there is no significant additional cost or negative impacts on performance and the environment.

An improved model of waste reporting is being implemented via the new Whole of Government Waste Management Contract, mandatory for all agencies buying waste management services. The 2021-22 reporting period will capture the first full year of data for these waste management improvements.



Net Zero Cities

Our cities can play an important role in bringing us together as a community. Our cities can also have a large impact on our carbon footprint. This includes the houses, townhouses, and apartments we reside in; the neighbourhoods we build community connections in; and the centres where we work, shop, relax and play.

Over 85% of Australians live in cities and urban areas and almost 70% of global end use carbon emissions are generated by cities.

In NSW, Greater Sydney alone is responsible for 38% of NSW's greenhouse gas emissions.

The Net Zero Cities Action Plan, released October 2022 builds on the objectives set by the NSW Climate Change Policy Framework 2016 and the priorities identified by the Net Zero Plan Stage 1: 2020-2030 to reach our 50% emission reduction target by 2030, and to achieve net zero emissions by 2050. The Action Plan will accelerate our transition to net zero at the same time as reducing pressure on cost of living and creating healthier, more vibrant places. The Action Plan outlines steps we can all take to achieve a net zero future. It includes 16 actions the NSW Government will pursue to show leadership, create partnerships, and support innovative approaches to emissions reduction in our urban centres.



Local government

NSW councils play a key role in supporting decarbonisation as local leaders and through their connection to local communities. By reducing emissions, local councils can help increase the resilience of their communities and act as a catalyst for New South Wales to meet its net zero emissions objective.

The NSW Government is delivering, in partnership with [Local Government NSW](#), the NSW Councils Net Zero Emissions program. This includes a research and innovation fund, which provides seed funding to local councils to sponsor research, policy development and innovation around net zero for the advancement of local government.

The NSW Government has also committed \$16 million towards a new joint procurement facilitation service to make it easier for local governments to procure waste services collectively. The EPA has been co-designing the service with councils across NSW so it is designed in a way that meets the needs of councils. The design of the service is being finalised for commencement. The service aims to help councils identify opportunities to procure waste and recycling services jointly, and to access the best expertise, information, training, and guidance needed to collaborate and act on these opportunities.

National parks estate

Our national parks represent one of the largest carbon stores in New South Wales. Providing secure, long-term protection for these carbon stocks is a vital contribution to managing climate change risk. Increasing the State's national park estate will protect land that is currently a carbon sink, create opportunities for additional carbon sequestration activities, support biodiversity outcomes and boost tourism and job opportunities in regional economies.

In September 2021, the [NSW National Parks and Wildlife Service \(NPWS\)](#) announced its commitment to be net zero and carbon positive by 2028. NPWS reached its interim goal of reducing its carbon footprint by 55%, 3 years ahead of its 2025 target, by becoming the first agency in NSW to switch to using 100% renewable energy from the grid.

The heritage Cuttlers Cottage in Myall Lakes National Park is the first in Australia to switch to a green hydrogen stand-alone power system. This reflects NPWS interest in new energy technologies to deliver low-impact visitor experiences and preserve the natural environment.

As of 26 September 2022, over 7,595,990 hectares or 9.48% of the State is reserved in the NSW national parks system (in 890 parks and reserves). This includes more than 441,370 hectares that have been reserved since March 2019. In addition, over 161,000 hectares have been secured for reservation.

When gazetted, over 9.6% of the State will be reserved.

NPWS will be a world-leader in supporting the development of premium environmental markets, assisting in developing market tools and piloting premium projects that deliver positive outcomes for carbon, biodiversity, water and air quality.

NPWS has completed the Taskforce for Climate Related Financial Disclosure (TCFD) public statement as part of the Net Zero Implementation TCFD Pilot Study. The statement will be published on the NPWS website by the end of 2022. The Statement details NPWS climate change action and commitments into the future.



Adaptation

Decisive climate action is more than just setting targets and new policies; we need to adapt and build resilience to truly reach our net zero goals.

In June 2022, the NSW Government released the [NSW Climate Change Adaptation Strategy](#).

The strategy has 4 priorities:

1. Develop robust and trusted metrics and information on climate change risk
2. Complete climate change risk and opportunity assessments
3. Develop and deliver adaptation action plans
4. Embed climate change adaptation in NSW Government decision making.

The strategy sets out comprehensive actions under these 4 priorities with timeframes for delivery. Actions include:

- Establishing metrics to measure progress toward climate change resilience and adaptation for all of NSW by the end of 2023.
- Regular publication of climate change projections for the state.
- Ongoing research on priority climate change risks, opportunities and adaptation options.

- Development of practical information, advice and decision tools on the best way to adapt and prepare for climate change.
- A regular five-yearly cycle of state-wide climate change risk and opportunity assessments and adaptation action plans. The first assessment and plan are due to be released in 2023.
- Updating and developing guidance, processes and standards so that significant NSW Government decisions rigorously consider climate change risks, opportunities and adaptation as part of business-as-usual by the end of 2023.
- Requiring all NSW Government agencies to identify their own climate change risks by the end of 2023.
- Publication of a whole of government climate change disclosure in 2023 consistent with the Taskforce on Climate-related Financial Disclosures (TCFD) recommendations and other leading international and national standards and guidance as they evolve.

During 2022 the NSW Government also piloted entity-specific TCFDs for the National Parks and Wildlife Service, Environment Protection Authority and Essential Energy. The entities will publish their disclosures before the end of the year.



International collaboration

Net Zero Futures Policy Forum

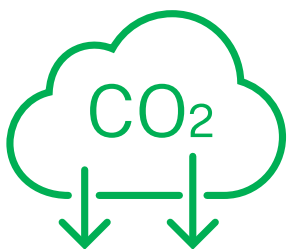
In 2022, Australian states and territories along with the Scottish Government established the Net Zero Futures Policy Forum, an Under2 Coalition initiative. The Policy Forum is an international partnership of governments committed to addressing the practical challenges of achieving net zero emissions and accelerating decarbonisation.

The Forum aims to help state and regional jurisdictions develop their emissions reduction policies by enabling access to the collective knowledge and experience of participating members.

The founding members of the Forum include all Australian state and territory governments and the Scottish Government, with NSW and Scotland as the co-chairs.



The Forum has identified 3 initial policy areas for engagement:



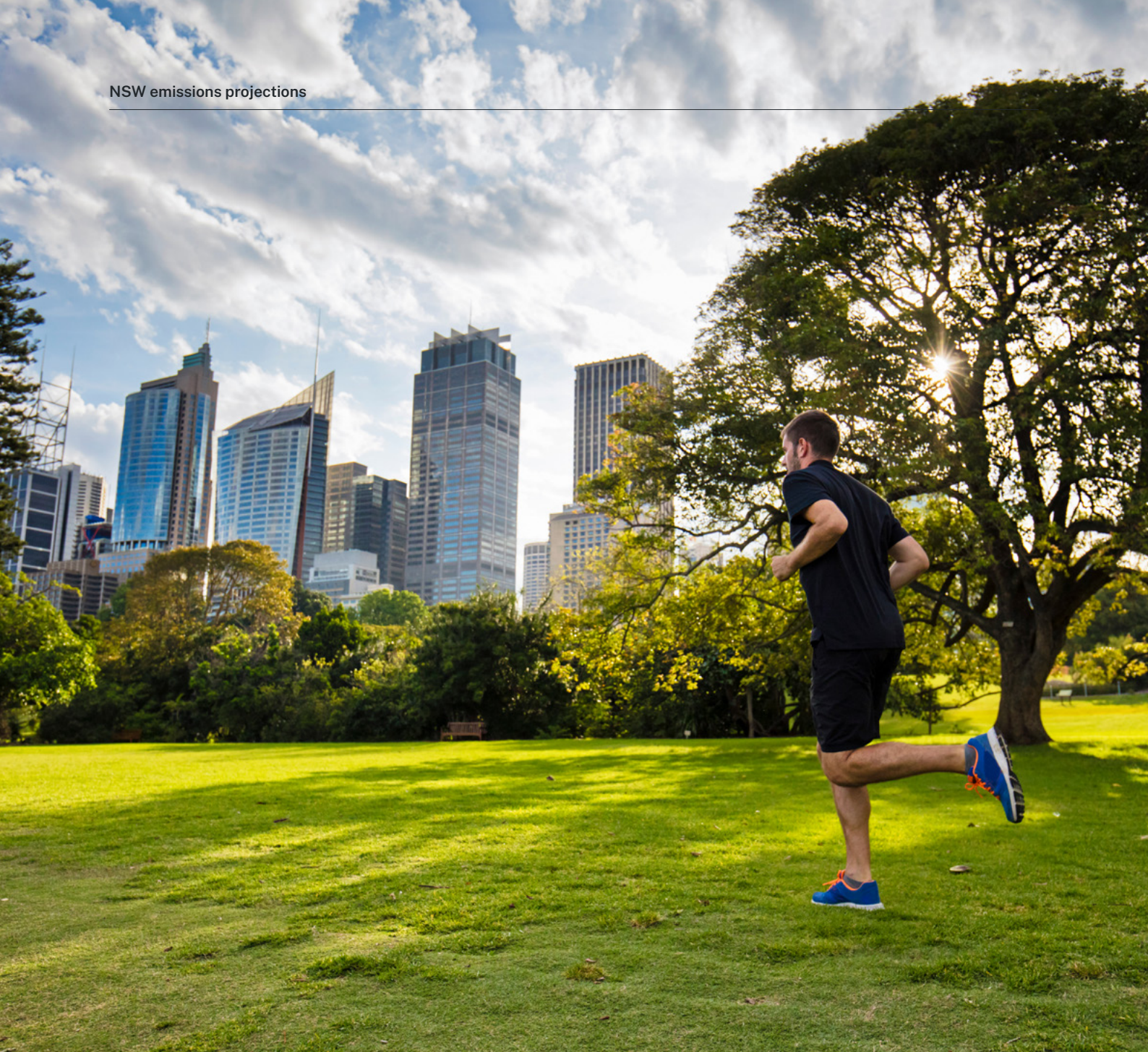
1 Carbon sequestration



2 Transport emissions



3 Green hydrogen



NSW emissions projections

Modelling of NSW emissions

The NSW Department of Planning and Environment (DPE) does economy-wide emissions modelling to track and report on the progress New South Wales is making towards meeting its net zero objectives, and to assess the impact of NSW Government action on emissions. Emissions projections are developed and updated annually for base case and current policy scenarios. Base case emissions, excluding the Net Zero Plan, are updated based on the latest data and methods and considering external factors affecting NSW emissions such as global and local technology, energy and market trends; climate impacts; land-use management changes; social and sector trends; economic growth forecasts; and changes to the international and national

policy context. Current policy projections are based on the base case scenario but account for emissions reductions to be achieved under the Plan and other major NSW Government actions aiming to achieve reductions in greenhouse gas emissions.

The NSW base case and current policy emissions projections accounting for actions under Stage 1 of the Plan as at June 2021 were published in the 2021 Implementation Update and the NSW State of the Environment Report 2021. The assumptions and methods were published , and the data made available for download or easy access through the [NSW Net Zero Emissions Dashboard](#).



Updating of base case emissions

NSW emissions were inventoried to be 132 million tonnes CO₂-e for 2020, representing 27% of Australia’s total emissions and an 18% (29 Mt CO₂-e) reduction on 2005 levels. In 2019, DPE projected base case NSW emissions to be about 129 Mt CO₂-e in 2035, with base case emissions updated in 2021 to be about 111 Mt CO₂-e in 2035 (Figure 1). The 2022 base case emissions projections update considers private sector commitments where timebound actions are published and subject to emissions monitoring and reporting provisions.

A range of factors have contributed to the downward revision of the NSW base case emissions trajectory including: more rapid growth in the share of renewables within the technology mix of the National Electricity Market, driven in part by the high take-up rate of rooftop solar; changes in agricultural production patterns; upgraded base case electric vehicle uptake rates; growing private sector commitments; and changes in the outlook of global energy markets.

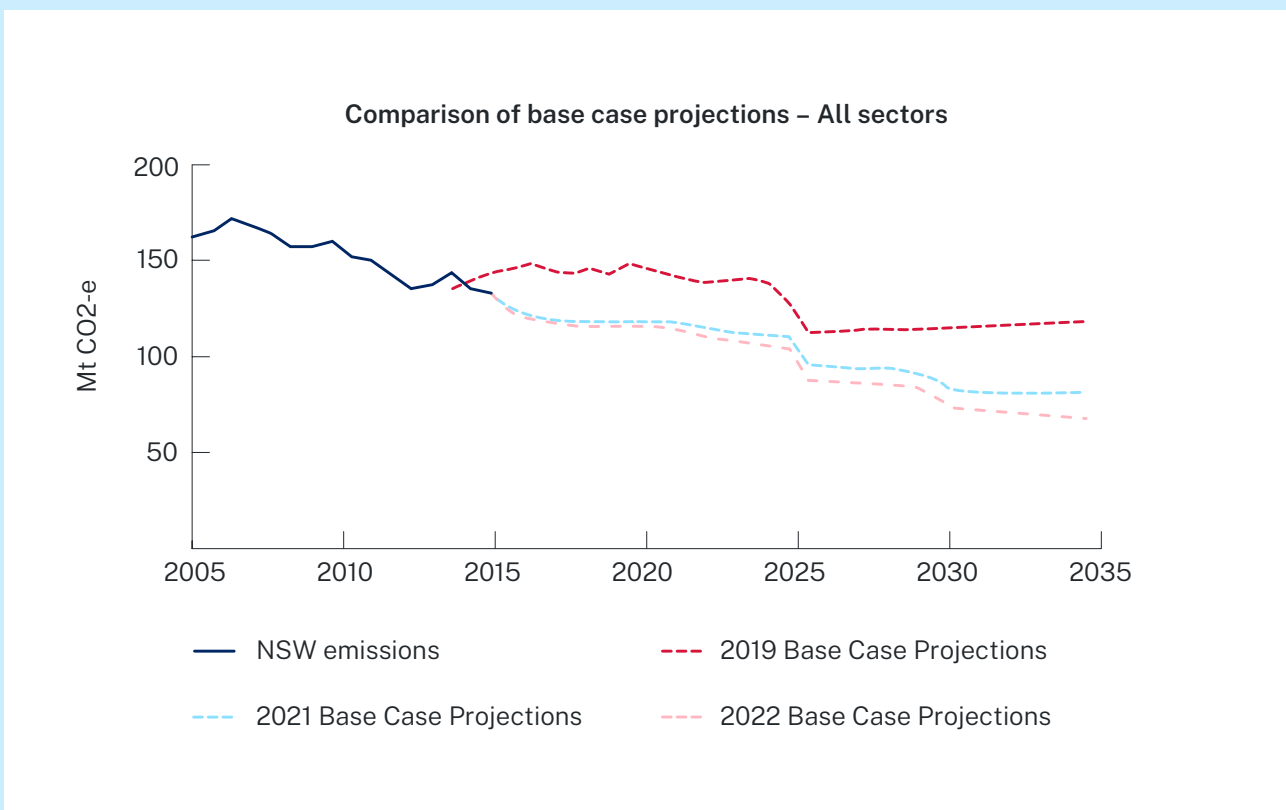


Figure 1 Comparison of 2019, 2021 & 2022 base case projections for NSW emissions (projected emissions without the Net Zero Plan)



Current policy projections and future action

The 2021 current policy projections considered only funded programs under Stage 1 of the Plan for which abatement estimates were available by June 2021.

The definition of ‘current policy’ has been expanded for the 2022 projection update to include:

- Previously modelled and more recently announced policies and programs under Stage 1 of the Plan as described in previous sections
- Related NSW Government policies and the implementation of anticipated policies and actions as described below in this section
- Future initiatives related to reducing emissions and clean energy by NSW Government supported by the NSW Climate Change Fund (CCF) under Stages 2 and 3 of the Plan

Based on this, the 2022 current policy emissions projections include:

- Forecast abatement due to the Net Zero Plan (Stages 1 to 3)
- The impact of anticipated policies such as the draft NSW EPA Climate Change Policy and Action Plan and upcoming reform of the Safeguard Mechanism by the Australian Government (assumed to address issues raised in the NSW Government's submission)

Implementation of the EPA Climate Change Policy and Action Plan and effective baselines under the Safeguard Mechanism are assumed to advance the uptake of available abatement technologies by facilities addressed by these policies. Actions under the Net Zero Plan are projected to support the acceleration of actions by business and farmers, such as the:

- Mitigation of mining emissions
- Manufacture of green ammonia
- Abatement of livestock emissions from beef cattle and dairy farming



- Transition to cleaner fuels by industry and agriculture

The NSW Hydrogen Strategy is modelled to increase the uptake of hydrogen-fuelled trucks on the road. Actions prioritised under the Future Transport Strategy will also support the road freight sector to decarbonise by accelerating the uptake of zero and low-emission vehicles.

Potential developments not accounted for in the projections include:

- Future federal government funding for projects delivering emissions abatement in NSW
- Further changes in the energy generation mix or coal mining operations
- Major technological break throughs
- New urban planning measures
- Further improvements in freight productivity

The DPE projections show that in the absence of government action under the Net Zero Plan (base case), NSW emissions will reduce by 35% (57 Mt CO₂-e) below 2005 levels by 2035 (Figure 2). Private sector and household action, such as deploying rooftop solar, is supporting the decarbonisation of the industry and electricity sectors. These projections account for forecast population and economic growth.

NSW Government action, including recently announced and related policies, anticipated near term policies and further action under approved future CCF funding, will deliver emissions reductions of 55.2 Mt CO₂-e in 2035. NSW emissions are projected to reduce by 70% below 2005 levels by 2035 due to: these actions, base case emission reductions and emission reductions already inventoried to have occurred by 2020.

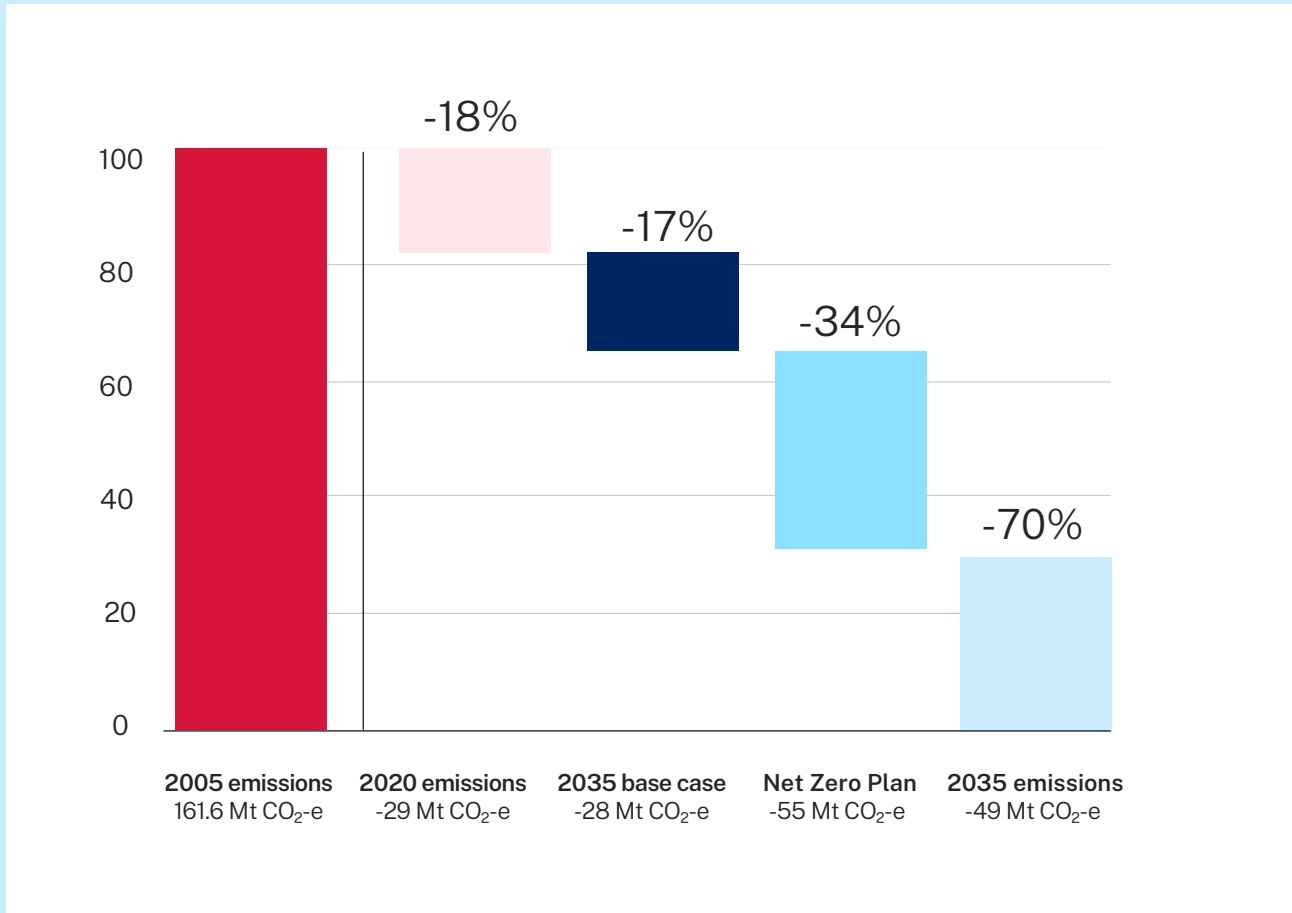


Figure 2 Projected reductions in annual NSW emissions in 2035

Annual emissions reductions to be delivered by the Plan are projected to increase as initiatives are implemented (Figure 3).

This includes as:

- Renewable energy generation ramps up
- The share of electric and hydrogen-fuelled vehicles on the road increases
- Carbon and biodiversity markets expand
- Technologies for abating agricultural, industrial and mining emissions mature and are increasingly adopted
- More organic waste is diverted from landfill and landfill gas capture rates increase to address emissions from legacy and any ongoing organic waste disposal
- A growing number of households, businesses and institutions reduce their electricity and gas usage under the expanded Energy Security Safeguard and Sustainable Buildings SEPP.

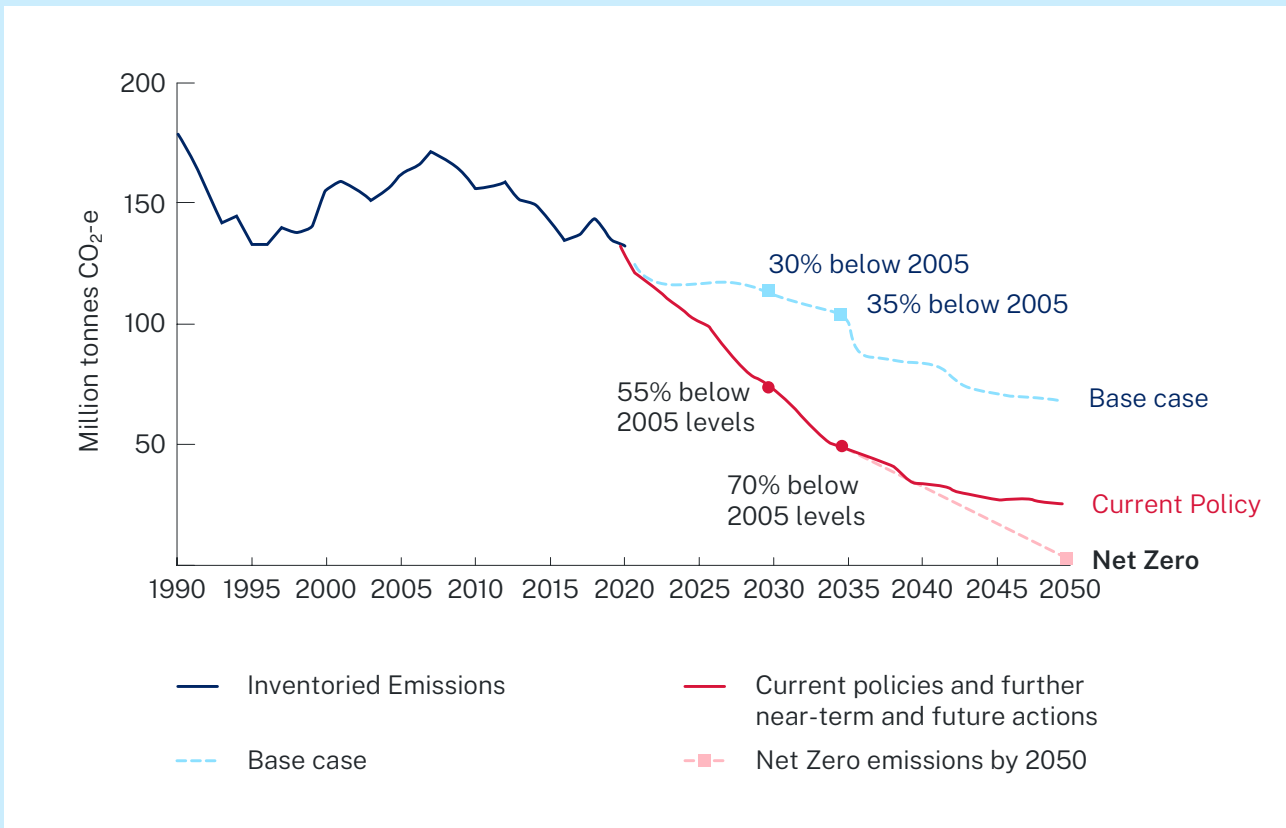


Figure 3 Projected total NSW emissions to 2050 for base case and current policy scenarios

There are expected to be significant economic benefits to NSW setting a 2035 objective. Enabling investment in renewable energy and clean technology will position our State as an economic power in the emerging global low carbon economy and open up future opportunities to export technologies.

Opportunities for further emissions reductions not addressed within the 2022 current policy projections include:

- Leveraging the power of NSW Government’s annual \$30 billion of goods, services and construction procured to encourage net zero businesses
- Initiatives to unlock deep electricity demand reduction in existing buildings to temper the rapid expected rise in power

demand in coming decades and support the conversion of the existing building stock into all-electric net-zero ready buildings

- Potential for further emission reduction policies through the Greater Cities Regional Plan and the Hunter and Shoalhaven-Illawarra decarbonisation plans
- NSW advocacy for national policies to support the accelerated uptake of clean technologies, e.g. for vehicle fuel efficiency standards and further advances under the National Construction Code
- Investment in future technologies that will contribute to achieving net zero emissions.



Governance

Net Zero Emissions and Clean Economy Board

The Net Zero Emissions and Clean Economy Board advises the NSW Government on the implementation of the state’s Net Zero Plan to achieve 50% emissions reduction by 2030 and net zero by 2050. 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 Board also considers opportunities to promote jobs

and economic growth through the State’s response to climate change. The Board’s membership includes industry experts who bring experience from across the private, public, and not-for-profit sectors.

The Board was established in December 2021 and has held monthly meetings since February 2022.

Board members



Professor Hugh Durrant-Whyte
Acting Chair



Ms Judy Slatyer



Ms Katerina Kimmorley



Ms Margaret (Meg) McDonald



Dr Martin Parkinson
AC PSM FASSA FIPAA



Mr Peter Warne

State of the Environment reports

The NSW Environment Protection Authority (EPA) is the primary environmental regulator for New South Wales. The EPA partners with business, government and the community to reduce pollution and waste, protect human health and prevent degradation of the natural environment. Established in 1991, the EPA is responsible for issuing environment protection licences, monitoring compliance and prosecuting organisations and individuals that break the law.

The EPA also helps develop and inform environmental programs and policy, and provides technical support and expertise to other Government agencies.

The EPA plays an important role in the implementation of the Plan by reporting on the progress made under the Plan including on the forecast emissions reductions for

New South Wales. Pursuant to a direction from the Minister, as part of its State of the Environment reports released every three years, the EPA will include: a description of the status of the policies set out in the Plan; the State's projected emissions reductions for 2030 on 2005 levels; and an assessment of the emissions reductions that are attributable to the impact of the Plan and other government policies. The State of the Environment report will also provide an analysis of the economic and other environmental impacts of the Plan, and comment on the extent to which the Plan is setting the State up to achieve its objective of net zero emissions by 2050.

The 2021 NSW State of Environment report is the first to include reporting on the progress of the Net Zero Plan.

i Department of Planning and Environment, September 2021, NSW Greenhouse gas emissions projections, 2021 Methods paper, <https://www.environment.nsw.gov.au/research-and-publications/publications-search/nsw-greenhouse-gas-emissions-projections-2021-methods-paper>

ii NSW Net Zero Emissions Dashboard, available on the NSW Government's Sharing and Enabling Environmental Data (SEED) portal, <https://www.seed.nsw.gov.au/net-zero-emissions-dashboard>

iii Australian Government, June 2022, State and Territory Greenhouse Gas Inventories 2020, <https://www.dcceew.gov.au/climate-change/publications/national-greenhouse-accounts-2020>

**Net Zero Plan
Stage 1: 2020-2030
Implementation Update**