



Clean air

FOR ALL VICTORIANS

VICTORIA'S AIR QUALITY STRATEGY



A clean air future for all Victorians

Victoria's air quality is good by world standards, but we need to work hard to maintain this, especially as our population and economy grow and our climate becomes warmer and drier.

It's essential that we address localised causes of air pollution that affect some Victorian communities disproportionately.

The Victorian Government is already taking strong action to reduce air pollution from major sources.

Through this Strategy, we are showing our determination to improve and refine our approach.

The Strategy sets out how our Government will further reduce air pollution and tackle major pollution sources while we support communities, the economy and the environment.

It builds on work we are already doing to reduce air pollution, including:

- Our transformation of Victoria's environment protection and climate change frameworks
- Our commitment to increase the share of renewable electricity generation in Victoria to 50% by 2030, and
- Our multi-million dollar investments in public transport and zero-emission vehicles and fuels.

We all have a part to play, which is why we worked with communities and industry to develop this important blueprint for our future air quality.

I am grateful to everyone who shared their feedback, particularly through Victoria's Clean Air Summit, regional discussions and responses to our Clean Air for All Victorians – Victoria's Air Quality Statement (2018).

Our Government will continue to advocate for better national air quality standards and practices, and we will partner with councils to target local pollution sources.

This Strategy is a promise to Victorians and our future.

If, like me, you believe in reducing air pollution to improve the health and wellbeing of all Victorians, we need to act now to make the changes that will help us all breathe easier for generations to come.

We want Victorians to understand the need for cleaner air, how and when they are exposed to air pollution, and the effective, targeted steps we all need to take to protect everyone's health.

I look forward to working with you to further improve Victorians' health and enviable lifestyle, and to ensure our state has a prosperous, clean air future.



The Hon. Lily D'Ambrosio MP

MINISTER FOR ENERGY

MINISTER FOR ENVIRONMENT
AND CLIMATE ACTION

MINISTER FOR SOLAR HOMES

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We acknowledge and respect Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it. We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices. We are committed to genuinely partner, and meaningfully engage, with Victoria's Traditional Owners and Aboriginal communities to support the protection of Country, the maintenance of spiritual and cultural practices and their broader aspirations in the 21st century and beyond.

Accessibility

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Executive summary

By world standards, Victoria enjoys enviable air quality. Despite this, there are still health impacts from air pollution in Victoria. The health impacts of air pollution include respiratory and heart-related problems, asthma, diabetes, dementia, stroke and cancer, as well as mental illness.^{1,2,3}

The combined health costs associated with localised outdoor air pollution cost Victoria more than \$1 billion per year (2021 prices).⁴ Without continued action, exposure to air pollution is expected to increase in the future.

The Victorian Government is already taking strong action to reduce air pollution from major sources. This Strategy builds on work we are already doing in this area, including:

- Our transformation of Victoria’s environment protection and climate change frameworks
- Our commitment to increase the share of renewable electricity generation in Victoria to 50% by 2030, and
- Our multi-million-dollar investments in public transport and zero-emission vehicles and fuels.

The Air Quality Strategy sets out how the Victorian Government will further reduce air pollution and tackle major pollution sources by implementing four strategic objectives.

The Air Quality Strategy will be regularly reviewed as we implement its actions between 2022 and 2030 and the actions will be updated as required. The Victorian Government will ensure we achieve our commitments while supporting communities, the economy and the environment.

Strategic objectives



Targeting the main causes of air pollution in Victoria today

Preventing air pollution from being generated in the first place from major sources such as industry, motor vehicles, wood heaters and planned burns



Helping vulnerable Victorians and supporting the broader community

Raising awareness in the community about the impact of air pollution on human health and the environment. Empowering and supporting Victorians to take an active role in reducing our exposure to air pollution emissions



Raising the bar on air quality information

Strengthening our understanding of where and when air pollution occurs, and its impact on human health and the environment. Advocating for strong national standards, improving our air monitoring capabilities, and supporting improved accessibility to information for people to take informed action



Ensuring a clean air future

The Victorian Government’s transition to a clean energy future and investments in innovative technologies such as zero emission vehicles (ZEV) and hydrogen will strongly support our reduction of air pollution

Clean air for all Victorians

OUR VISION



1 Targeting the main causes of air pollution in Victoria today

Reduce air pollution caused by industry, motor vehicles, wood heaters and planned burns



Wood heaters

Undertake wood heater policy reform

Commence wood heater education program



Planned burns

Reduce and better manage smoke impacts from land burning (including planned burning on private and public land, and agricultural burning)



Industry

Implement air quality improvement precincts



Motor vehicles

Deliver the Zero Emissions Vehicle (ZEV) Subsidy to help more Victorians buy ZEVs

Accelerate the rollout of electric charging infrastructure

Commence ZEV bus trials

Increase opportunities to move more freight by rail

Advocate for improved national standards for fuel quality and vehicle emissions



2 Helping vulnerable Victorians and supporting the broader community

Reduce the impact of air pollution on vulnerable communities, and empower individuals to choose cleaner sources of energy and transport

Support education and behaviour change for people on how to reduce air pollution and their exposure to air pollution



3 Raising the bar on air quality information

Improve understanding and benchmarking of air pollution to drive action at the local, state and national levels

Develop phase 1 of an Environmental Health Tracking Network



4 Ensuring a clean air future

Reduce air pollution by reducing fossil fuel use

Continue to implement the Government's climate change strategy and sector pledges, renewable energy and zero emission vehicle initiatives, and broader public transport and urban development reforms

Guiding principles

Build networks of expertise and comprehensive knowledge base on air emission sources and impacts

Prioritise reduction of air emissions across all key economic sectors

Ensure compliance of all major emitters with their statutory obligations to minimise emissions

Empower Victorians to actively reduce their air emissions and exposure to air pollution

Drive further improvements in air quality through identifying and delivering additional effective actions – in partnership with communities, businesses and governments

Our vision

Cleaner industry

Cleaner production and operations will result in waste reduction and improved efficiency in industry

Stronger industry compliance

Environment Protection Officers will support business and industry to comply with their legal obligations

Towards zero emission transport

Zero emission energy sources for freight trucking and rail

Air quality improvement precincts

Address local air pollution issues

Improve air quality monitoring

Improve regional and metropolitan monitoring of air quality

More citizen scientists

More Victorians to participate in air quality citizen science projects

Reduce engine idling

Discourage engine idling to reduce emissions near people more vulnerable to air pollution

Reduce smoke from land burns

Increase use of non-burn fuel management such as slashing, mowing and mulching

Clean air spaces in the home

Informing people about actions they can take in their own homes

HEPA

Clean sources of energy

Reduce air pollution by using clean sources of energy generation

Renewable energy powering public transport

Renewable energy sources for trains and trams

Increase active transport

Walking and cycling to reduce emissions and provide other health benefits

Zero emission vehicles

Zero emission vehicle adoption and infrastructure roll out

Walkable neighbourhoods

Supporting 20-minute neighbourhoods to reduce air pollution

Alternative forms of heating

Reduce health impacts of wood heaters by encouraging alternative forms of heating

Our air quality

Breathing clean air is essential for our health and wellbeing.

Air pollution is defined by the Environment Protection Authority (EPA) as the presence of harmful levels of gases or particles in the air which can impact our health and environment. This Strategy focuses on key ambient air pollutants: nitrogen dioxide, sulfur dioxide, carbon monoxide, particles, ground-level ozone and volatile organic compounds (VOCs), which are the main pollutants associated with health risks. These pollutants can come from anthropogenic (human-generated), or natural sources.

Why clean air matters

The combined health costs associated with localised outdoor air pollution cost Victoria more than \$1 billion per year (2021 prices).⁵ The health impacts of poor air quality include respiratory and heart-related problems, asthma, diabetes, dementia, stroke and cancer, as well as mental illness.^{6,7,8} Air pollution also impacts a community's day-to-day liveability and amenity, for example by making people less inclined to exercise or relax outdoors.

Those with pre-existing health conditions (particularly those with heart conditions or lung conditions such as asthma), pregnant women, young children and those aged 65 and over are particularly at risk from air pollution-related illness. Even low levels of some pollutants – inhaled over short periods – are linked to exacerbations of existing lung and heart disease.⁹

Victorians' health, amenity and wellbeing are our primary focus in acting to improve air quality. Improved air quality also creates multiple social, economic and liveability benefits for our state, making Victoria a desirable destination to live and invest in.

Victoria's air quality today

By world standards, Victoria enjoys enviable air quality.

Despite this, there are still health impacts from air pollution in Victoria. While smoke from catastrophic bushfires such as the 2019-20 'Black Summer' fires impact the air quality of all Victorians, localised events mean some communities experience more frequent and disproportionate impacts, such as dust and emissions from industry, smoke from home wood heaters and exhaust fumes from trucks and cars.

Victoria's air quality in the future

Without continued action, exposure to air pollution is expected to increase in the future due to:

	11.2m	Our changing community	Victoria's population is projected to increase to 11.2 million by 2056. The number of people aged 60 and over (which includes those particularly vulnerable to air pollution impacts) will more than double ¹⁰
	80%	Increasing urbanisation	By 2056, 80 per cent of Victorians will be living in Melbourne where, without action, we could be more exposed to industrial, business, vehicle and wood heater smoke pollution ¹¹
	+80%	Increasing transport use	There will be an additional 10.4 million trips a day across Melbourne by 2050 - an increase of more than 80 per cent, with the majority in private and freight vehicles ¹²
	x2	A warmer and drier climate	By the 2050s, if the current rate of global warming continues, Victorian towns can expect around double the number of very hot days each year compared to 1986-2005, ¹³ further increasing pollution risks from bushfires and raised dust.



Main sources of air pollution in Victoria

Air pollution is produced from natural and anthropogenic sources. Motor vehicles, various types of industry and fossil fuel electricity generation (in the Latrobe Valley) are the main sources of key air pollutants of concern throughout the year. Wood heaters are a major source of particles in the cooler months. Planned burning can have local and regional impacts at certain times of the year.

POLLUTANT	MAIN SOURCES	ANTHROPOGENIC	KEY IMPACTS ON HUMAN HEALTH
Particles PM Dust, smoke, aerosols, as PM ₁₀ (particles ≤ 10 micrometres (µm) in diameter), PM _{2.5} ≤ 2.5 µm in diameter) and ultrafines (≤ 1 µm in diameter).	 ICE vehicles*  Industry  Wood heating  Dust  Bushfires  Planned burns	   	<ul style="list-style-type: none"> Can enter the respiratory tract, causing a range of health impacts, especially for young children, pregnant women, people aged 65 and over, and people with lung or heart conditions. Finer particles can penetrate deep in the lungs and enter the bloodstream.
Ozone O₃ Secondary pollutant formed through reactions between gases such as oxides of nitrogen and volatile organic compounds in sunny conditions.	 ICE vehicles*  Industry  Bushfires	 	<ul style="list-style-type: none"> May be harmful to the lungs, especially for young children, pregnant women, people aged 65 and over, and people with heart or lung conditions. May exacerbate pre-existing respiratory conditions such as asthma.
Nitrogen dioxide NO₂	 ICE vehicles*  Industry	 	
Sulfur dioxide SO₂	 Industry  Shipping	 	
Carbon monoxide CO	 ICE vehicles*  Industry  Wood heating	  	<ul style="list-style-type: none"> May be harmful to people with existing heart disease.
Volatile organic compounds VOC Including the hydrocarbons benzene, toluene, xylenes, formaldehyde.	 ICE vehicles*  Household materials, product  Industry	  	<ul style="list-style-type: none"> Although usually found in very small concentrations, these chemicals are potentially hazardous because of their high toxicity. Benzene and formaldehyde are classified as carcinogens by the International Agency for Research on Cancer.

Air pollutants originate from a range of anthropogenic (human-generated) and natural sources * Internal combustion engine vehicles

Measuring air quality

EPA Victoria measures and reports levels of key ambient air pollutants, with information available on EPA's Air Watch site.¹⁴ Indicators and objectives for these pollutants are provided in Victoria's Environment Reference Standard.¹⁵ The Victorian Government also measures and reports concentrations in comparison with national reporting standards set in the National Environment Protection (Ambient Air Quality) Measure (AAQ NEPM), as do all other Australian jurisdictions.

EPA's air pollution emissions inventory is a database that compiles estimates of the amount of air pollutants discharged into the atmosphere. It is produced from natural and anthropogenic sources covering the whole state of Victoria. The emissions inventory is our main source of information on the relative contribution of different air pollutants in Victoria.¹⁶

EPA Victoria's air monitoring typically shows that air quality in Victoria is good and air pollution levels are generally low relative to state and national standards for carbon monoxide, nitrogen dioxide and sulfur dioxide. Levels of particulate matter such as PM₁₀, PM_{2.5} and ozone are also generally low relative to state and national standards except during significant area-wide or local burning events. Elevated PM₁₀ levels are also associated with area-wide or some local dust sources.

EPA's air quality monitoring data shows we still exceed our standards for PM₁₀ and PM_{2.5}, and ozone from time to time, and these are the main air pollutants of concern in Victoria. However, long-term exposure at low levels to other pollutants may still have health impacts.

It is important to note that air pollution is not evenly distributed, and some Victorian communities are more frequently exposed to poorer air quality, such as communities located close to industry and transport routes.¹⁷

Scope of this Strategy

This Strategy provides a framework for securing Victoria's clean air future. It brings together existing initiatives as well as new interventions to target priority areas for reducing air pollution.

Our focus is on action to reduce ambient outdoor air pollution and its impacts on human health, amenity and wellbeing.

Offensive odour and indoor air quality, while important, are not the focus of this Strategy. We will continue to monitor the evidence regarding the health impacts of indoor air quality and odour and will review the need for further action in the future.

Building on our strong foundation for clean air

Victoria has strong foundations for driving air quality improvements and reducing the health costs of pollution.

This Strategy sits within an existing framework of legislation, strategy, policy and programs that support and enable action to reduce air pollution and improve our air quality. It builds on these foundations, with actions targeting the leading causes of air pollution, addressing localised hotspots and delivering clean air for all Victorians.



Strong environmental protection laws

We have world-leading environmental protection legislation.

The *Environment Protection Act 2017* came into effect on 1 July 2021. It prevents pollution by:

- Requiring people engaging in activities that may give rise to risks of harm to human health or the environment due to pollution or waste, to minimise those risks as far as reasonably practicable. This is known as the General Environmental Duty
- Introducing a new permissions scheme, which expands the number of businesses that need to hold a licence, permit or registration with the EPA
- Introducing a broader range of compliance and enforcement powers for the EPA, including stronger penalties for those who do the wrong thing.

Climate Change Strategy

We have the strongest emissions reduction action in the nation and are on course for net-zero greenhouse gas (GHG) emissions by 2050.

Reducing greenhouse gas emissions can also reduce emissions of air pollutants.

Victoria's Climate Change Strategy is a roadmap to net-zero emissions and a climate resilient Victoria by 2050. The initiatives in the Climate Change Strategy will support communities and businesses to make the changes we need to reduce the impacts of climate change and continue to support our economy to grow.

To help meet its climate change targets, the Victorian Government has prepared emissions reduction pledges for multiple sectors. A transition to clean technologies for energy and transport sectors will have significant and long-term benefits for Victoria's air quality.

To achieve these emissions reduction targets Victoria's Climate Change Strategy includes actions to:

- Transition our state to a clean energy future that will create jobs
- Cut costs for households and businesses
- Strengthen our energy system
- Invest in innovative technologies, such as zero emissions vehicles and hydrogen
- Partner with businesses and communities to set Victoria up for their adoption
- Recognise and safeguard the role of our natural environment in reducing emissions
- Support Victorian businesses and communities to cut emissions and thrive in a net-zero emissions future.



Working together to improve our air quality

Improving air quality is a shared responsibility that requires shared involvement, commitment and action by the national, state and local governments, business and industry, and the community. Each has its own responsibilities, strengths and role to play to help secure our clean air future.

The Victorian Government will continue to work nationally, regionally and locally with stakeholders to put in place the measures necessary to reduce air pollution and improve our air quality.



1 Targeting the main causes of air pollution in Victoria today

Our priorities are to address air pollution caused by industry, motor vehicles, wood heaters and planned burns. Preventing air pollution from being generated in the first place is the best way to reduce its health and amenity impacts on Victorians.



1 Targeting the main causes of air pollution in Victoria today



Industry

The industrial sector contributes up to 43 per cent of air pollution state-wide.¹⁸ Air pollutants are released into the atmosphere by industrial activity including manufacturing products, creating energy or other resources, or moving materials on site and generating dust. As a result, pollution is disproportionately generated in areas where industry is concentrated, particularly in pockets of metropolitan Melbourne.

Our new action builds on Victoria's revitalised *Environment Protection Act 2017* by targeting air pollution 'hot spots' and supporting industry to be cleaner.

New actions

The Victorian Government has committed \$2.84 million to establish Air Quality Improvement Precincts in Melbourne's Inner West and Outer West in partnership with EPA, businesses, local government and the community to identify and implement actions to reduce localised PM₁₀ and PM_{2.5} air pollution. The Inner West precinct includes parts of Maribyrnong, Melbourne and Port Phillip City Councils, while the Outer West precinct spans sections of Brimbank, Hobsons Bay and Maribyrnong City Councils. Both precincts are areas with complex air pollution challenges requiring actions that address local circumstances.

- Actions will be identified with local input
- Grants will be available to implement actions identified on a matched basis
- EPA will provide a dedicated 'concierge' support service for businesses in the precinct to facilitate any EPA approvals required (such as Better Environment Plans or licence amendments) under the new *Environment Protection Act 2017*.

Work underway

Support businesses to ensure compliance with the *Environment Protection Act 2017*. We will continue to:

- Support industry and businesses, regardless of size, to comply with their legal obligations
- Provide guidance to help industry and businesses understand, minimise and manage the air pollution risks from their activities including ways to eliminate those risks
- Support industry and businesses to identify and invest in cleaner production and operations, to reduce waste, improve efficiency, cut pollution and reduce operating costs

- Prioritise compliance action on sources causing the greatest risks of harm
- Take necessary and proportionate action against any businesses failing to comply.

Continue and expand the Officers for Protection of the Local Environment (OPLE) program, including:

- \$13.8 million to continue the program, enabling EPA to provide ongoing local support to communities with 19 officers working in 23 local councils.

Fires at waste and recycling stockpiles have caused some major smoke pollution events in recent years. We will reduce emissions from the waste sector by diverting waste from landfill for recycling.

- The Victorian Government has made the unprecedented investment of \$515 million to transform and reform Victoria's waste and recycling sector. This includes \$380 million to deliver the Victorian Government's circular economy policy and plan, *Recycling Victoria: A new economy*, which is driving fundamental changes in our economy to reduce waste, make more productive use of our resources and establish a recycling system Victorians can rely on.
- *Recycling Victoria: A new economy* will help to create around 3,900 new jobs and establish new skills in design, repair, efficiency and materials usage across Victoria.

1 Targeting the main causes of air pollution in Victoria today



Wood heaters

While wood heaters are a primary source of warmth for many Victorians, they are responsible for a disproportionate amount (38 per cent¹⁹) of PM_{2.5} emissions. The average wood heater in Melbourne burns 3.75 tonnes of wood per year,²⁰ releasing harmful compounds that can surpass \$4,000 in annual health costs per heater.²¹

With approximately 240,000 wood heaters across the state, these high-emission sources are expected to create approximately \$8 billion in health impacts over the decade between 2018-28 if wood heater usage continues unabated.²²

Wood heaters can be used for necessity, convenience or aesthetic enjoyment. Regardless of the reason, wood heaters cause significant health harms and reduce amenity, and are a major concern for many Victorians.

No single approach to reducing wood heater smoke is likely to be successful by itself, so we are taking broad action including policy reform, regulation and education. Opportunities to improve the design of the regulatory model for wood heater smoke, and how it is delivered, will be explored.

We will take strong action to address pollution from wood heaters. A plan to reduce wood heater smoke and its impact on people's health is outlined below.

New actions

Commence options analysis for wood heater policy reform to reduce the impact of wood smoke on people's health. The options to be explored will cover the full lifecycle of wood heaters, including design, installation, operation and replacement.

- The options will be explored and analysed with input and engagement from the community, industry, and businesses to understand the social, economic, and environmental opportunities and impacts of any proposed changes
- It is recognised these opportunities and impacts will vary between metro and regional locations and between households who use wood heaters as a primary source of heating and those who use them as a secondary form of heating
- Public consultation will occur in early 2023.

Develop a wood heater education campaign to:

- Inform wood heater owners about the impact of wood heater smoke on people's health and wellbeing
- Explain how to operate a wood heater to minimise the generation of smoke
- Inform those affected by wood smoke on steps they can take to address their concerns.

Work underway

The Victorian Government's Home Heating and Cooling Upgrades Program is helping low-income and vulnerable households to improve their thermal comfort by:

- Offering rebates to replace ineffective and inefficient gas, electric and wood heaters with energy efficient reverse-cycle split systems.

1 Targeting the main causes of air pollution in Victoria today



Motor vehicles

The key air pollutants from transport are PM_{2.5}, NO_x and SO₂, as well as PM₁₀ (which is generally present as road dust). Diesel engine emissions are of particular concern for public health as they contain larger quantities of PM_{2.5} and have been classified by the World Health Organisation as carcinogenic. Air pollution from the transport sector cost Victoria an estimated \$660 million to \$1.5 billion in the year 2005 (\$2018 prices).²³

We have recently introduced a Zero Emissions Vehicle (ZEV) Roadmap, supported by a \$100 million package of policies and programs. This will ensure Victoria becomes a leader in the adoption of clean vehicles. This includes battery electric vehicles and technologies such as hydrogen fuel cell vehicles. ZEVs used for freight and fleet can be expected to substantially reduce adverse health impacts from exposure to harmful pollutants. The reduced air pollution resulting from the reduction of fossil fuel use in Victorian vehicles could generate health benefits of around \$21 billion by 2050.²⁴

In November 2021, Victoria was a signatory to the Conference of the Parties 26 (COP26) declaration on accelerating the transition to 100% zero emission cars and vans.

Our new actions build on this ambitious ZEV agenda by targeting national collaboration to accelerate the transition and ensure that emissions from internal combustion engines continue to be reduced while the transition is occurring.

New actions

Work with the Australian Government to review the national standards including to:

- Work with other states and territories to advocate to the Australian Government for a comprehensive national ZEV transition strategy
- Advocate for improved national standards for fuel quality and carbon dioxide (CO₂) to drive down emissions from internal combustion engine (ICE) vehicles while we transition to ZEVs
- Advocate for the adoption of tighter vehicle emission standards including Euro6/VI as minimum for new light and heavy vehicles respectively
- Work with the Australian Government to introduce national standards to limit pollution from non-road diesel engines.



1 Targeting the main causes of air pollution in Victoria today

Work underway

Consumer/fleet vehicles

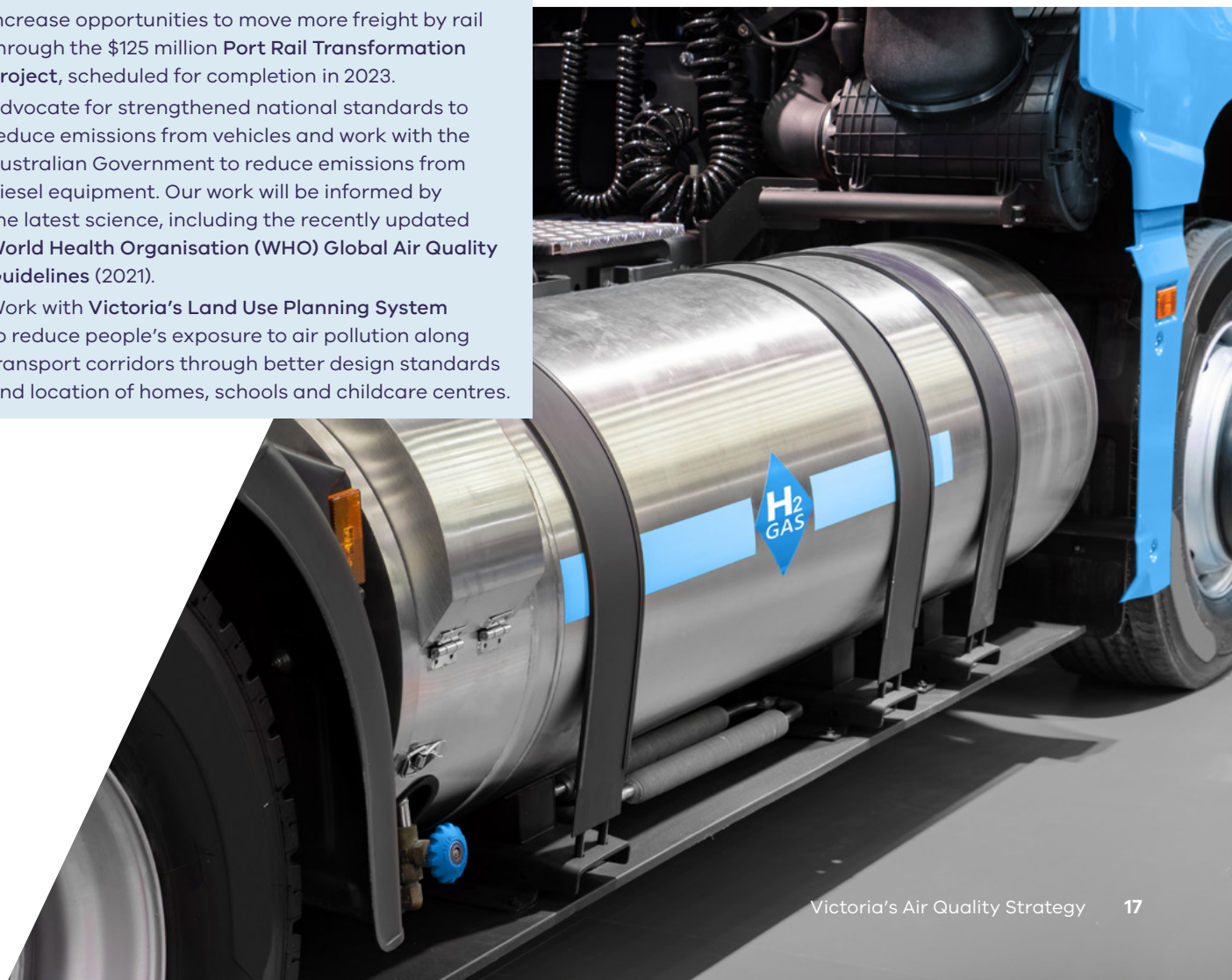
- **ZEV Subsidy** (\$46 million) to help more Victorians purchase zero emissions vehicles. The subsidy will encourage more Victorians to make the switch to ZEVs earlier, encourage more ZEV models into the Victorian market and help drive down costs over time.
- Accelerate the rollout of electric charging infrastructure (\$19 million) across regional Victoria and support government and commercial vehicle fleets. This includes \$6 million to install charging stations in at least 50 locations across Victoria, with a focus on key regional locations.
- Funding (\$10 million) for the Victorian Government to shift our vehicle fleet to ZEVs beginning with 400 ZEVs by 2023.
- Establish a **Commercial Sector ZEV Innovation Fund** (\$5 million) to encourage the uptake of zero emissions light commercial vehicles.

Public/alternative transport

- **ZEV Bus trial** (\$20 million) operated by the Department of Transport and a target of all new public transport buses to be ZEV from 2025.
- In addition to the **ZEV Roadmap**, funding (\$15.3 million) towards Active Transport Victoria projects to deliver key upgrades for safer walking and cycling and electrification of the metropolitan rail network to growth areas including Melton and Wyndham. This has the additional benefit of replacing polluting diesel trains on key commuter routes.
- **Investment in Smarter Roads** (\$340 million) to transform how we manage busy suburban roads in Melbourne's west, east and south-east by enhancing our freeways' performance and streamlining traffic flows.

Freight

- Move 30 per cent of Melbourne's containers by rail by 2050, avoiding the need for millions of truck trips on roads each year through the \$58 million **Port Rail Shuttle Network** (PRSN) initiative.
- Increase opportunities to move more freight by rail through the \$125 million **Port Rail Transformation Project**, scheduled for completion in 2023.
- Advocate for strengthened national standards to reduce emissions from vehicles and work with the Australian Government to reduce emissions from diesel equipment. Our work will be informed by the latest science, including the recently updated **World Health Organisation (WHO) Global Air Quality Guidelines** (2021).
- Work with **Victoria's Land Use Planning System** to reduce people's exposure to air pollution along transport corridors through better design standards and location of homes, schools and childcare centres.





Smoke from planned burns

Fire is a natural part of Victoria's environment.

Planned burns are undertaken on public and private land for important purposes, including to reduce bushfire risk and bushfire smoke impacts; regenerate forests; protect and strengthen ecological systems; and eliminate weeds, pests and diseases. They will continue to be a significant feature of how we manage our public land, plantations, agribusinesses and natural systems into the future.

These activities create smoke, which can cause health and amenity risks to individuals, communities and businesses. However, planned burns also reduce the likelihood and size of bushfires, avoiding the greater smoke impacts caused by these events. The Victorian Government and our fire authorities have experience and expertise in planning and managing burns to reduce community and business smoke exposure. They also ensure communities are informed about the timing of planned burns and how to reduce and prevent exposure.

Work is already underway to reduce the impact of smoke from planned burns.

Work underway

Reduce and better manage smoke impacts from:

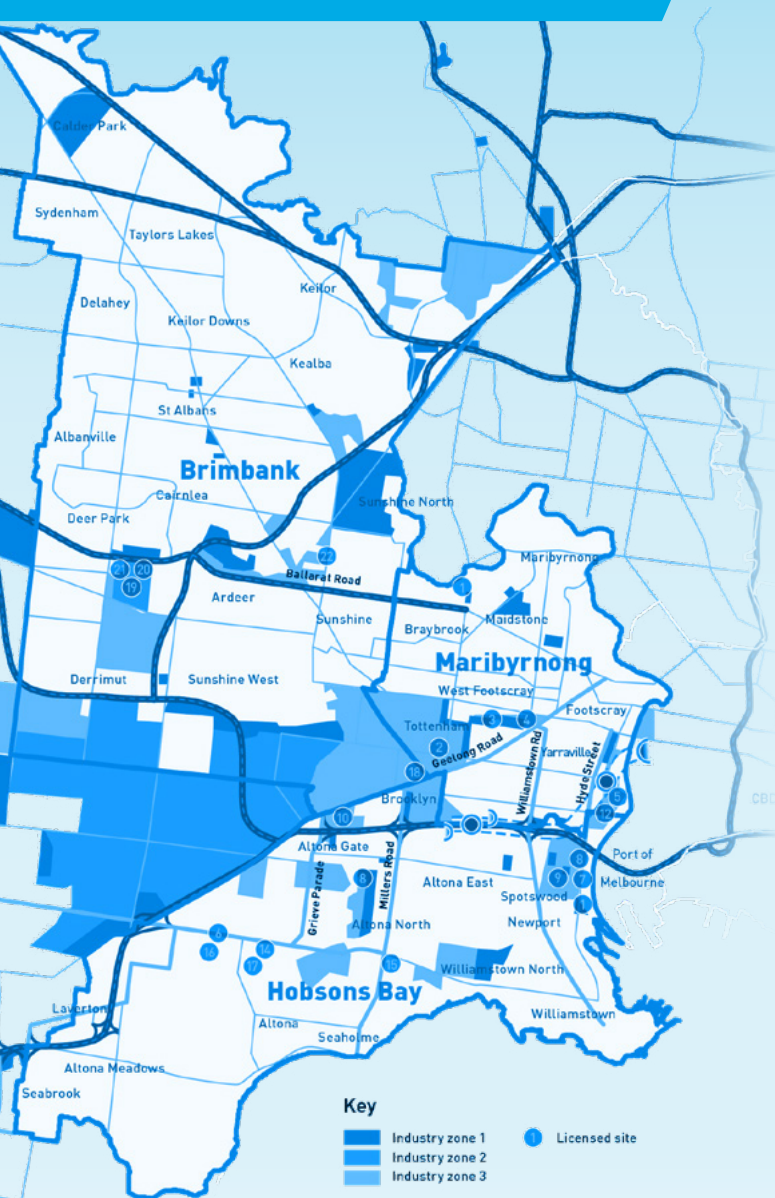
- Land burning (including planned burning on private and public land)
- Agricultural burning.

DELWP will continue to work with partner agencies to:

- Optimise location and timing of planned burns to manage total smoke generation at the one time
- Partner with at-risk industries to cooperatively reduce smoke impacts where possible – including, but not limited to, viticulture, apiaries and tourism
- Increase the use of non-burn fuel management such as slashing, mowing and mulching, to reduce fuels close to communities and assets. Where appropriate, this allows the delivery of fuel reduction year-round without additional smoke
- Implement guidance for government agencies on their responsibilities during high-risk smoke events
- Continue work to integrate the digital fire permit system for citizens and businesses (Fire Permits Victoria) with smoke forecasting and monitoring to better understand the impact of smoke from planned burn activities²⁵
- Improve Fire Permits Victoria to enable improved understanding of the potential production and distribution of smoke from planned burns on private land. This system has been developed to improve understanding, coordination and management of planned burns and fire management on private land. Additional improvements will support fire management agencies to better understand and manage smoke across the state and plan activities on public and private land accordingly
- Maintain support to communities to manage the impacts of unavoidable smoke.



CASE STUDY



Targeted improvements to reduce air pollution and improve air quality in Melbourne's Inner West

2018



The Victorian Government established the Inner West Air Quality Community Reference Group (CRG)

2018-2020



CRG with representatives from local government, key community groups and the local community investigated air quality issues affecting the Inner West

2020



CRG delivered a comprehensive report to the Victorian Government with 26 recommendations

The Victorian Government committed to the following actions to protect and improve local air quality in Melbourne's Inner West

Port Rail Shuttle Network	Port Rail Transformation Project	Relocating consolidated container storage	West Gate Tunnel Project	Melbourne Metro Rail Tunnel Project
\$58M initiative moving 30% of Melbourne's containers by rail by 2050, avoiding millions of truck trips on roads each year	\$125M project increasing opportunities to move more freight by rail, scheduled for completion in 2023	Relocating to the former Melbourne Market site, which will accommodate freight and logistics uses closer to the Port of Melbourne	Removing 9,000 trucks each day off multiple local streets and introducing 24-hour truck bans at selected local roads	Creating safer, more accessible public and active transport options for the west

Other initiatives to understand air pollution in the Inner West and address its impacts

Investing \$1.79M into further improving the management of childhood asthma in the Inner West	Undertaking studies to better understand sources of Inner West air pollution, including a source apportionment study	Securing a long-term air pollution monitoring site in Footscray	Establishing a super roadside monitoring station at Brooklyn to research roadside air pollution impacts, including ultrafine particle and black carbon measurement
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2 Helping vulnerable Victorians and supporting the broader community



We will raise awareness in the community about the impact of air pollution on human health and the environment. We will empower and support Victorians to reduce our exposure to air pollution emissions and be active in creating a clean air future for Victoria.

2 Helping vulnerable Victorians and supporting the broader community

Victorians contribute to air pollution in several ways, sometimes unknowingly. Domestic air pollution is created by our everyday activities including by the choices we make in how we travel and heat our homes.

The Victorian Government will empower Victorians to reduce their contribution and exposure to air pollution. Education and information are key to empowering Victorians to better understand the harmful impacts of air pollutants to health, wellbeing and the environment. This will help Victorians to make informed decisions to reduce household emissions, and understand what we need to do to comply with legal obligations to prevent pollution.

Victorians can also contribute to better understanding local air pollution levels and risks through citizen science programs, such as simple air quality monitoring. We will continue to support and extend these programs.

We are making significant investments in infrastructure for public transport, cycling and walking to help Victorians choose alternatives to using internal combustion engine motor vehicles.

Our new action helps inform all Victorians about what we can do to reduce air pollution and our exposure to it.

New actions

Implement an education campaign on:

- The health impacts of air pollution
- How to reduce air pollution
- How to reduce our exposure to air pollution.

We will partner with community groups to develop and deliver information and resources for Victorians, with a focus on improving accessibility to culturally and linguistically diverse (CALD) communities and sensitive people (such as those with asthma) who live in areas regularly impacted by air pollution from sources such as wood smoke, bushfire, planned burns or transport pollution. The information will empower individuals and communities to take action to protect themselves and others from health impacts. Content will include:

- Educating the general community about air pollution risks and how they can be reduced
- Reducing pollution from idling cars at locations where sensitive people (such as children or people with existing lung or heart conditions) can be concentrated, including schools, childcare centres and hospitals
- Encouraging active transport (walking, cycling) to reduce short vehicle trips and provide health benefits.

Work underway

Deliver the recently funded \$1.788 million program to improve the management of childhood asthma in the inner west of Melbourne.

- This includes working with partners such as local primary health care providers to improve population health outcomes.



3 Raising the bar on air quality information

We will strengthen our understanding of where and when air pollution occurs, and its impact on human health and the environment. We will advocate for strong national standards, improve our air monitoring capabilities, and support improved accessibility to information for people to take informed action.



3 Raising the bar on air quality information

Information on air pollution sources and levels is vital to enable effective, targeted action and intervention to reduce pollution and its risks to our communities. Better information also empowers Victorians to minimise our risk of exposure to air pollution and protect our health. It is the foundation of effectively minimising air pollution and its health impacts across the next decade.

New actions

Commence development of an Environmental Health Tracking Network

- The EPA will develop phase 1 of an Environmental Health Tracking Network
- This will include sourcing key environmental and health data, operationalising and mapping priority environmental health indicators, and developing internal tools to display environmental health data and perform health impact assessments
- This foundational work will be the first step in EPA's longer term goal of developing an external facing web-portal that will provide Victorians with information on health risks and how to protect themselves.

Work underway

Improve air quality monitoring through:

- Identifying opportunities for partnerships to expand the distribution of air pollution monitoring and forecasting across Victoria
- Using innovative solutions (such as remotely piloted aircraft) to identify air pollution sources, improving our understanding of air pollution causes to inform more effective actions to address them and help ensure premises are complying with legal obligations
- Leveraging programs such as Digital Twin Victoria²⁶ and other platforms where appropriate to make relevant information accessible to people when and where they need it
- Working with local government and community organisations to report localised air quality information as part of supporting integrated actions and partnerships to address identified issues
- Advocating for a consistent national approach to developing inventories, while maintaining Victoria's air pollution inventory
- Continuing to build collaborations with research partners, such as CSIRO and other air quality experts.

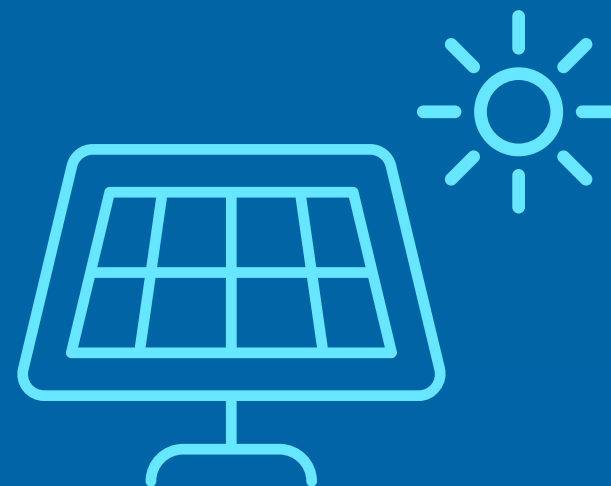
Advocate for better national air quality standards and practices to:

- Minimise pollution in line with the recommendation of the National Environment Protection Council that a review of the national ambient air quality standards commence in 2025.



4 Ensuring a clean air future

Our focus is to ensure Victorians enjoy clean air now and into the future, as we prepare to meet the challenges of climate change, population growth, increasing urbanisation and use of transport. Our transition to a clean energy future and investments in innovative technologies, such as zero emission vehicles and hydrogen, will also help to reduce air pollution.



4 Ensuring a clean air future

The burning of fossil fuels, such as coal for electricity and petrol or diesel for motor vehicles, is a significant source of greenhouse gas (GHG) emissions, and a major source of various air pollutants including sulfur dioxide, oxides of nitrogen and particulate matter such as PM_{2.5} and PM₁₀. We will support business to reduce energy use, emissions, and pollution, and invest in energy innovation. It is estimated that reduced air pollution resulting from curbing fossil fuel use could result in health benefits of around \$2 billion from reduced coal-fired electricity generation by 2030 in Victoria.²⁷

The *Climate Change Act 2017* cements our goal of net-zero greenhouse gas emissions by 2050 in law and establishes a comprehensive framework to get there, while also planning for and adapting to our changing climate.

Our Climate Change Strategy sets ambitious targets to reduce emissions by 28–33 per cent by 2025 and 50 per cent by 2030. These include achieving the Victorian Renewable Energy Target of 50 per cent renewable energy by 2030 and 50 per cent of all light vehicle sales in Victoria being ZEVs by 2030.

The Victorian Government has already committed significant funding and resources to reduce emissions from fossil fuel electricity generation, and the early commitments that will carry us through to 2026 are set out below.

Victoria's planning framework is key to achieving sustainable and liveable spaces. Planning measures and good urban design can help reduce exposure to air pollution and safeguard community health and amenity.

This can include ensuring that there is a minimum separation between residential areas and industrial sites and major transport routes; facilitating transport-oriented development; and designing walkable neighbourhoods, which reduce air pollution from vehicles by supporting alternative forms of transport, such as public transport, walking and cycling.²⁸ Active transport generates multiple health benefits by providing physical activity and decreasing the adverse health effects of internal combustion engine motor vehicle transport.²⁹

The current actions demonstrate the Victorian Government's significant existing commitments in relation to energy and urban planning.



Work underway

Clean energy for businesses and homes

- The \$1.3 billion **Solar Homes Program** is supporting 778,500 Victorian households to install solar panels, solar hot water systems or batteries at their home.
- The **Solar for Business Program** is supporting 15,000 Victorian small businesses by providing rebates to install solar panels at their work premises.
- A **Business Recovery Energy Efficiency Fund** (\$31 million) to provide simultaneous grant funding for capital works and energy demand management technologies to larger energy users.
- **Victorian Energy Upgrades** to provide businesses with discounted access to energy saving products and services.
- **Small Business Energy Saver Program** providing a bonus of up to \$2,000 to discount the cost to upgrade to more energy-efficient equipment.
- An expanded **Agriculture Energy Investment Plan** through investing an additional \$30 million to support farmers to improve on-farm energy generation.
- Strengthened energy performance standards for new commercial buildings and refurbishments as part of the **National Construction Code**. Changes to apply from 2025 will improve average energy efficiency in commercial buildings.

Supporting development of clean energy technology

- **New Energy Innovation Initiative** (\$108 million) to attract novel technologies, new industries, innovation and development into the state, and fund technologies such as offshore wind and renewable hydrogen.
- **Energy Innovation Fund** grants range from \$2 million to \$20 million, and span renewable hydrogen, energy storage and renewable biogas, to further grow Victoria's renewable technology industry.
- **Breakthrough Victoria Fund** (\$2 billion over 10 years) which will drive translation and commercialisation of knowledge in Victoria, with the clean economy as one of five key priority sectors. The focus industries will include health and life-sciences, agri-food, advanced manufacturing, clean energy and digital technologies.
- Research and development initiatives (\$10 million) for a local renewable hydrogen energy industry through the **Renewable Hydrogen Industry Development Plan**.
- The **Victorian Offshore Wind Policy Directions Paper** outlines our State's vision for offshore wind – paving the way for our State to host the first offshore wind farms in Australia. The plan includes procuring an initial offshore wind tranche of at least 2GW, aiming for first power to come progressively online from 2028 following a competitive process, with targets of 4GW of offshore wind capacity by 2035 and 9GW by 2040.
- Develop six **Renewable Energy Zones (REZ)** in regional Victoria with abundant solar and wind resources, backed by the \$540 million REZ Fund.
- Develop the second **Victorian Renewable Energy Target (VRET2)** auction process to boost the state's renewable energy generation by at least 600 megawatts.

Urban development reforms

- The **Cooler, Greener West Program** (\$5 million) will see more trees planted in Melbourne's west over the next two years.
- In partnership with local government, support traffic management and urban design to encourage 'local living', reducing the need to travel and thereby cutting vehicle pollution through our **Movement and Place** framework and promotion of **20-Minute Neighbourhoods**.³⁰
- Develop land use planning, siting and design guidance to minimise exposure to air pollutants on 'sensitive use' facilities such as childcare centres, schools and hospitals seeking to locate near busy transport corridors. This would support individuals who are particularly sensitive to the impact of air pollution, such as young children, pregnant women, people aged 65 and over and people with lung or heart conditions.
- The recently introduced new tool into the Victoria Planning Provisions – the **Buffer Area Overlay (BAO)** – can be used to prevent incompatible use and development in areas where there is potential for off-site risks to safety and human health, or significant amenity impacts from industries or other uses.



Next steps

The Strategy will be regularly reviewed as we implement the actions between 2022 and 2030.

The Action Plan setting out the initiatives to be implemented through the first two years (2022 to 2024) is incorporated in the Strategy. New Action Plans will be released as required from 2024 to 2030.

We will:

1

Review the implementation of actions committed to in this Strategy

2

Monitor air pollution to ensure that the expected emissions reductions are occurring

3

Review our progress to identify what more needs to be done to ensure the vision is achieved

4

Consider new information or developments that may impact our understanding of air pollution, advances that may make interventions more cost effective and/or changes in the economy or society that may influence the nature and levels of air pollution in ways we have not anticipated

5

Review our progress against world's best benchmarks for air quality, such as those set out in the WHO's Global Air Quality Guidelines released in September 2021³¹



Any additional initiatives will be required to first proceed through normal government approval and funding processes

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