

Sustainable infrastructure and operations

Transport for NSW can play a leading role in the transformation of NSW into an environmentally sustainable State. Transport owns and manages a very large number of assets and can lead the acceleration of more sustainable operations. We can lead change by including sustainability incentives in our contracts and the infrastructure and technology that we roll out to our customers.

Transport manages around 21,000 kilometres of roads, more than 9000 kilometres of rail tracks, more than 2000 train carriages, more than 8000 buses and about 300 train stations. We can do a lot with these assets to make NSW a greener, leaner, and cleaner place.

Circular economy for transport

A circular economy values resources by keeping products and materials in use for as long as possible. Maximising the use and value of resources brings major economic, social and environmental benefits. It contributes to innovation, growth and job creation, while reducing our impact on the environment. To develop a circular economy for transport, we need to look at the design, construction, operations and disposal of all the assets on our networks.

The adoption of circular economy practices combined with accelerated electrification of motorised vehicles has the potential to reduce carbon emissions by up to 75 per cent and non-circular resource consumption by up to 78 per cent per kilometre by 2030, according to a report from Accenture, the World Economic Forum, and the World Business Council for Sustainable Development.¹

Road, rail, and related infrastructure drive substantial demand for asphalt, aggregates, concrete, steel, and soil. Procurement and design that minimises the use of virgin materials could help establish a thriving circular economy. However, some products are new to market and will require a more rapid approvals process for use at scale in the transport sector.



How can Transport incentivise and support a circular economy through the design and use of its assets, resources and materials?

Reimagining our assets

Transport has a range of assets across the State, from offices to depots, roads and rail. A clean and quieter transport system opens new possibilities for their use.

Transport corridors could be used for the generation of renewable energy (rooftop solar, land-based solar farms), transportation of clean energy (moving batteries, hydrogen and sustainable materials, hydrogen pipelines) or hosting specialist technologies (batteries, supercapacitors, inverting substations). There is even potential to use Sydney Trains' 33 kV and 11 kV networks to distribute and use renewable energy generation.



One of Australia's biggest rooftop solar installations above Sydney Metro HQ in Rouse Hill.

Transport and its service providers could make charging hubs, battery swaps, and other support services available to multiple users at fixed locations like bus depots. Users might include buses, bikes, taxis, last mile couriers and more. In addition, residential and mixed use dwellings above transit hubs become a possibility as pollution and noise decrease.



How can Transport work best with the private and public sector to transform the NSW transport and energy networks with clean energy technology?

¹ World Economic Forum, 'Raising Ambitions: A new roadmap for the automotive circular economy', Switzerland, 2020.

Care for country

Since the early 1990s significant efforts have been made to design new infrastructure to reduce its impact on wildlife.

Connectivity measures for terrestrial fauna and aquatic species, such as land bridges and fauna tunnels over and under motorways, have maintained critical wildlife movement corridors.

In addition, efforts to restore vegetation, remove invasive species, and offset unavoidable impacts, have been implemented to reduce the effects of new major infrastructure on wildlife. A leading example of this is the upgrade of the Pacific Highway from Newcastle to the Queensland border, which involved installing over 480 kilometres of fencing and 300 underpasses. While there has been a lot of effort on new infrastructure, there may be more we can do to manage our existing assets to support biodiversity.



Fauna overpass on Pacific Highway, Yelgun to Chinderah.



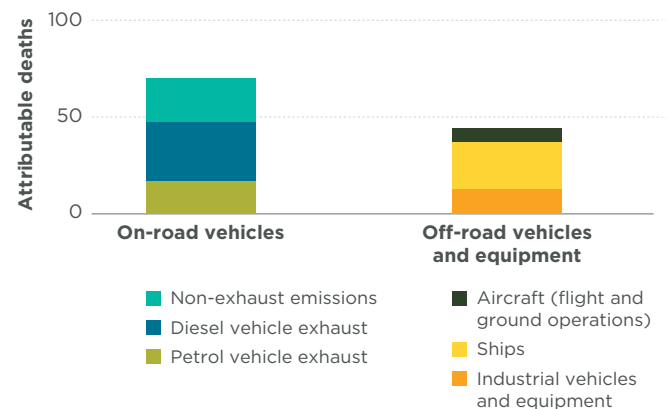
How can Transport improve its management of biodiversity?

Air quality

The transport sector contributes 26 per cent of human-made fine particle emissions in Sydney, 28 per cent in Wollongong and 21 per cent in Newcastle.

Shipping, road, brake and tyre wear, and diesel vehicle exhaust are the largest sources of fine particle emissions within Sydney, excluding domestic wood heaters. These transport-related sources of particle emissions contributed to more than 100 deaths in one year, according to the Centre for Air pollution, energy and health Research and the Commonwealth Scientific and Industry Research Organisation.²

Our actions to decarbonise transport will also improve air quality, but we can do more.



Source: NSW Clean Air Strategy 2021-30

Transport-related particle emissions contribute to more than 100 deaths per year in NSW



How can NSW lead Australia in lowering emissions from transport-related sources?

² NSW Department of Planning, Industry and Environment 2021. 'Draft NSW Clean Air Strategy', p. 20

Accelerating the transition

Transport can accelerate the take up of cleaner vehicles and address the recycling and resource opportunities as vehicles are replaced and infrastructure is renewed.

Incentives built into infrastructure and technology

Transport can use technology to provide more incentives for cleaner vehicle uptake. For example, we are connecting our traffic signals to vehicles on the road to prioritise the movement of certain road users at different times of the day. We could place vehicle emissions standards as conditions on receiving this priority. Low emissions vehicle lanes are used overseas to provide similar incentives.



How can Transport use its infrastructure and technology assets to incentivise uptake in lower emissions vehicles?

Closing the loop on a car's lifecycle

The term 'circular car' refers to a theoretical vehicle that has used materials efficiency. This notional vehicle would produce zero waste materials and pollution during manufacture, use, and disposal, differentiating it from today's zero emissions vehicles. While cars may never be fully circular, the automotive industry can significantly increase its degree of circularity.



If we accelerate the uptake of low emissions vehicles - how do we obtain maximum value from the retired vehicles?

Rating our assets for sustainability

Transport rates all large projects using the Infrastructure Sustainability Council's IS rating scheme. This has led to small changes that have had a large impact on increasing the sustainability of our new transport infrastructure. We could take a similar approach with our existing assets to understand how we could accelerate a transition to more sustainable transport across the entire State.



How could Transport better measure sustainability of all our assets?



Have your say

Please provide your feedback at
haveyoursay.nsw.gov.au/future-transport

What happens to my feedback?

Thank you for sharing your views with Transport for NSW. We will consider your input and will share the draft Future Transport Strategy when it is published via the email address you provided.