



# Driving net-zero:

## Options for reducing Tasmania's transport emissions

A Discussion Paper prepared by the  
Tasmanian Policy Exchange  
at the University of Tasmania

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## **ACKNOWLEDGEMENT OF COUNTRY**

We acknowledge the palawa/pakana of lutruwita, the traditional owners of the land upon which we live and work. We pay respects to Elders past and present as the knowledge holders and sharers. We honour their strong culture and knowledges as vital to the self-determination, wellbeing and resilience of their communities. We stand for a future that profoundly respects and acknowledges Aboriginal perspectives, culture, language and history

## **THE UNIVERSITY OF TASMANIA IS NO. 1 FOR CLIMATE ACTION**

The University of Tasmania is committed to providing leadership in sustainability and climate action and has been voted the No 1 university globally for Climate Action in the [Times Higher Education impact rankings](#) in both 2021 and 2022.

## **ACKNOWLEDGEMENTS**

We would like to acknowledge colleagues from across the University who have contributed to this Discussion Paper and the policy analysis which underpins it. Thank you also to stakeholders beyond the University of Tasmania who have contributed to this work and especially to the RACT and the Mercury for their commitment to promoting community input and debate about more sustainable and efficient transport options for Tasmania.

## **ABOUT THE TASMANIAN POLICY EXCHANGE**

The Tasmanian Policy Exchange (TPE) was established in 2020 to enhance the University's capacity to make timely and informed contributions to policy issues and debates which will shape Tasmania's future.

The TPE works with government and community partners to identify and address significant issues where the University can make a positive impact on Tasmania's future. It also works with staff from across the University of Tasmania to develop evidence-based policy options and longer-term collaborations.

The TPE's recent policy analysis includes:

[Changing patterns of employment on the West Coast](#)

[Analysis of Tasmania's carbon emissions](#)

[The Future of Local Government Review](#)

See more at [www.utas.edu.au/tpe](http://www.utas.edu.au/tpe)

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## AIMS OF THIS DISCUSSION PAPER

We are clearly facing a climate emergency and must adopt urgent and ambitious plans to reduce emissions if we are to avoid catastrophic global warming.

The University of Tasmania is deeply committed to addressing the global climate challenge and is working with communities, industry and governments to develop policies and strategies to establish Tasmania as a leader on climate action. We believe Tasmania can provide an example to the world on how to make the transition to a truly sustainable economy and community.

We welcome the release of the Tasmanian Government's [Climate Action Plan](#) and its commitment to develop Emissions Reduction and Resilience Plans (ERRPs) for key industry sectors, starting with transport. This discussion paper summarises our extensive research and analysis, which is outlined in the accompanying policy paper, on options to reduce transport emissions in Tasmania and has been prepared to support and inform the development of the Tasmanian ERRP for the transport sector.

Effective climate action requires a collaborative, whole-of-community effort, which is why the *Mercury* newspaper and the RACT have joined this project as engagement partners to ensure a broad cross-section of Tasmanians can [share their views](#) about the best options for our transport future. We will analyse your responses to the discussion questions presented in this paper and report them in our submission to the ERRP process and future climate policy work.

Our aim is to inform and promote an ambitious yet achievable plan to reduce transport emissions in Tasmania.

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## INTRODUCTION: TASMANIA'S CLIMATE-POSITIVE OPPORTUNITY

The Australian and Tasmanian Governments have established targets to reduce carbon emissions by 2030 to contribute to global efforts to avoid catastrophic climate change. If we are to meet or exceed these targets, we will need to develop and adopt ambitious plans to reduce emissions right across the economy and community.

A clear commitment to ambitious emissions reduction will not only help reduce the impacts of climate change but, as the University of Tasmania has [argued previously](#), is essential to future-proof the Tasmanian economy and ensure our prosperity in an increasingly carbon-conscious world.

We firmly believe that with commitment and ambition Tasmania can be an example to the world on climate action and sustainability.

The next important step in Tasmania to drive down emissions is to develop ambitious emissions reduction plans for each of the five main sectors of the economy – energy and transport, industrial processes, agriculture, land use, and waste.

The best place for Tasmanians to start driving down emissions is the transport sector – the 'low-hanging fruit' of decarbonisation opportunities – because of the growing range of climate-friendly transport options.

Given that transport provides some of the best opportunities to reduce carbon emissions, the Tasmanian Government's first Emissions

Reduction and Resilience Plan (ERRP) will rightly focus on transport and will be completed by the end of 2023.

This Discussion Paper presents evidence-based options and seeks community feedback so we can help shape Tasmania's forthcoming transport decarbonisation plan. Our aim is to outline policy options, inform debate and inspire action that will contribute to a 'climate-positive' Tasmania.

While widespread adoption of electric vehicles will be crucial, Tasmanians will also need to embrace behavioural change and commit to living and moving around our communities differently. Options here include greater use of public and active transport and, over the longer term, redesigning our cities and towns so we can live healthier, more connected and less car-dependent lives.

By adopting a range of practical solutions at the governmental, community, and individual level, we will drive emissions down, while also creating more liveable and connected cities and towns. This agenda has the potential to make long-term contributions to Tasmania's economy and future sustainability.

### Have your say

We hope you will complete a 10-minute survey to have your say about transport emissions reduction options. This survey will help us better understand how Tasmanians aged 16+ use transport and what their attitudes, values, and preferences are regarding transport emissions reduction options. You can find the survey [here](#).

## PART ONE – EMISSIONS REDUCTION IN TASMANIA: BUILDING ON A STRONG FOUNDATION

Tasmania is one of only a handful of places on Earth where ‘net’ greenhouse gas emissions are below zero (-4,800kt in 2021, Figure 1). This means that our forests and soils currently remove more greenhouse gases than we emit.

Declining native forest harvesting and growing plantation forests since 2012 have largely driven this increased removal of CO<sub>2</sub> from the atmosphere and its storage in forests and soils.

Tasmania’s net-zero status is a real achievement and establishes us as an international leader on climate action, for now. But we can’t be complacent and when we take a closer look at the Tasmanian economy, and at key sectors such as transport, heavy industry, and agriculture, our ‘absolute’ emissions have barely changed over the past 30 years, although our population and economy have grown (Figure 2).

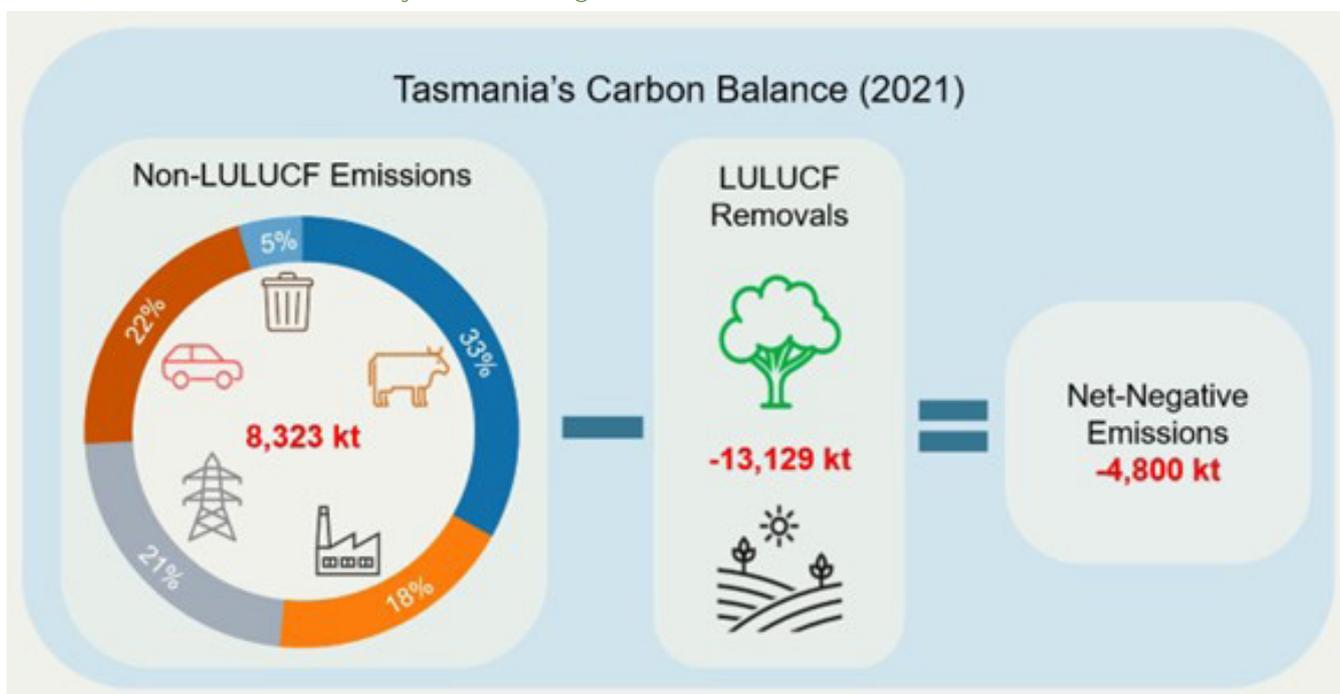
Reducing these absolute emissions across the entire economy matters for at least three reasons:

Tasmania can’t rely on forests and land-use removals over the longer term because the rate at which our forests store CO<sub>2</sub> will slow down over time as forests mature. If we don’t reduce absolute emissions in other sectors (such as transport), there is a real risk Tasmania will lose its net-zero status and reputation as a leader on climate action.

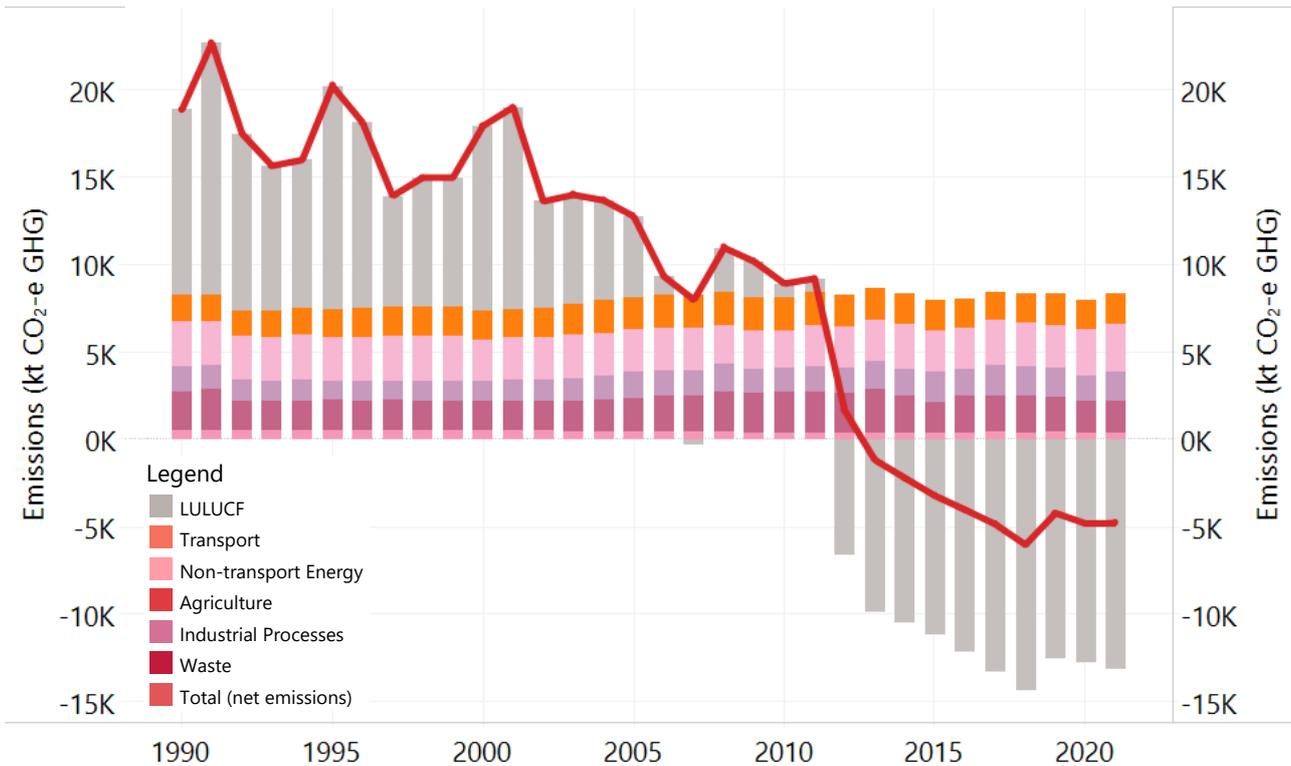
As the UN International Panel on Climate Change has argued, we need to remove as much carbon from the atmosphere as possible to limit global warming to 2.5°C in the second half of the century. To achieve this, we need to maximise the carbon stored in forests *and* reduce new carbon pollution from transport and other sectors.

Finally, reducing emissions is essential for future proofing the Tasmanian economy. An

**Figure 1:** Tasmania’s 2021 carbon balance (Data source: Australian State and Territory Greenhouse gas Inventories 2020)



**Figure 2:** Emissions in Tasmania by sector, 1990-2021



## Our absolute emissions in many sectors have barely changed over the last 30 years

ambitious approach to decarbonisation will see Tasmania take advantage of zero- and low-carbon opportunities and ensure that we are not left behind in a world that will increasingly demand and expect low-emissions products and services.

While many of us are increasingly concerned about carbon pollution and want to do more to limit further climate change, it can be difficult to know where to start. The Tasmanian Government has a legislated target

of being net-zero emissions, or lower, from 2030, and has launched a Climate Change Action Plan to outline the Government's plan for action for the next two years.

Most developed economies are currently grappling with the challenge of increasing their renewable electricity generation. Given our abundant hydro and wind energy resources, Tasmania can look to other sectors for emissions reduction opportunities.

## Why focus on transport?

There are about 516,000 vehicles registered in Tasmania, almost one for everyone in the state including children, which produce roughly 1.75 million tonnes of CO<sub>2</sub> emissions per year. The majority of our transport emissions – around 63% – are produced by cars.\* Tasmanians have older cars compared to the mainland and our high level of private vehicle dependence makes transport a major emissions reduction opportunity for the state.

Climate specialists have analysed the most cost-effective strategies for reducing emissions by considering the availability and cost of different options. One of the clear findings from this ‘abatement cost’ analysis is that transitioning to zero-emission vehicles (ZEVs)

is one of the best ways to reduce emissions quickly, at a reasonable cost, using readily available technology. Reducing our reliance on internal-combustion engine (ICE) vehicles will also deliver considerable environmental and public health co-benefits, which makes transport decarbonisation a win-win.

### Have your say

How often do you drive a car, use public transport, or walk/cycle to your destination?

Do you think Tasmania should set a 2030 emissions reduction target specifically for the transport sector?

Let us know by filling out our survey [here](#).



63% of  
Tasmania's  
transport  
emissions  
are  
produced  
by cars

\* By 'cars, we are referring to cars and light vehicles, including utes and four wheel drives.

## Are electric and zero-emissions vehicles the answer?

Increasing our uptake of ZEVs will be crucial to reducing our transport emissions over the medium term, but it will only get us so far. Considering the average life of a car in Australia is 22 years, most conventional cars purchased today will still be on the road after 2040. Our analysis shows that to achieve a target of where 20% of all cars on the road in Tasmania are ZEVs in seven years, sales of ZEVs would need to reach at least 67% of all new car sales by 2030. Assuming that new ZEVs are powered by 100% renewable energy (and Tasmania is close to this), this scenario would reduce our emissions from cars by a little more than 20% given that new petrol and diesel cars are becoming more fuel efficient. This would be a major improvement, but falls short of ambitious cuts that are required for Tasmania to credibly claim to be a leader on climate action.

To maximise emissions reduction from the transport sector, an ambitious increase in

ZEV uptake must be coupled with 'mode shifting' strategies designed to reduce our dependence on private vehicle use. Mode shifting options include increased use of public or active transport options, embracing remote or flexible working arrangements where practical, and planning our cities and towns to minimise unproductive commuting. Increased uptake of public and active transport has important health and wellbeing co-benefits alongside the environmental benefits associated with reduced greenhouse gas emissions

### Have your say

How likely are you to purchase a ZEV as your next car?

Do you think Tasmania should set a 2030 target for new electric vehicle sales to help increase their market share?

Let us know by filling out our survey [here](#).

	Tasmania	Australian average
<b>Cars per person</b>	0.93	0.78
<b>Age per car</b>	13.3 years old	10.6 years old
<b>Transport emissions</b>	2.90 tonnes per capita	3.57 per capita
<b>Travel</b>	11,765 kms per capita	12,100 kms per capita

## PART TWO – STRATEGIES FOR REDUCING OUR TRANSPORT EMISSIONS

Achieving the required emissions reductions in Tasmanian transport will require a two-pronged strategy of supporting electric vehicle uptake and promoting mode shifting to reducing car dependence. There are a number of policy options to help achieve these aims.

### 1. Promoting ZEV uptake

- Develop a ZEV sales target of 67%
- Address underlying social and cultural factors that inhibit ZEV uptake (such as range anxiety)
- Expand charging access in public and in the home
- Offer financial incentives (e.g., subsidies, stamp duty discount, rego exemptions, free parking incentives)
- Provide low- and zero-interest loans
- Promote car sharing models for ZEVs
- Rapidly transition government and private fleets

### 2. Reducing dependence on private vehicles

- Improve public and active transport access and options
- Prioritise remote and flexible working arrangements as well as digital technology and service provision
- Continue to develop urban planning strategies to focus on increasing density

In combination, these two strategies could **reduce Tasmania's transport emissions by 37% by 2030**

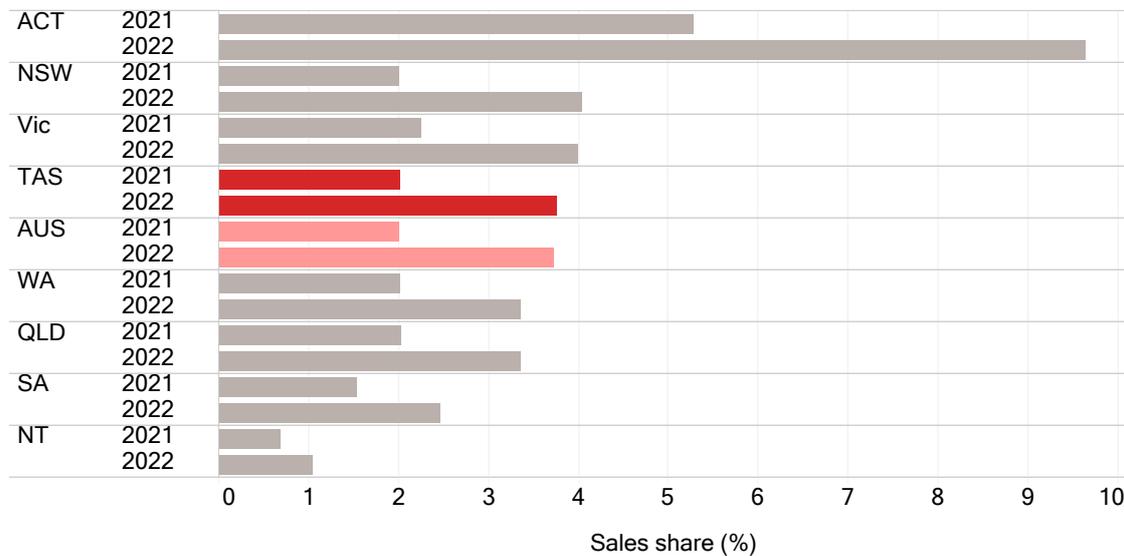
## Policy options for reducing vehicle emissions

Australia lags behind other nations when it comes to ZEV policy and uptake. In 2022, ZEVs accounted for just 3.8% of new light vehicle sales in Australia, compared with around 10% globally. However, things are now starting to change, with the Tesla Model 3 the third highest selling car in the country. While some important steps – like establishing vehicle emissions standards and Fringe Benefit Tax concessions – are national responsibilities, Tasmania should aim to achieve the highest rate of ZEV uptake per capita amongst the

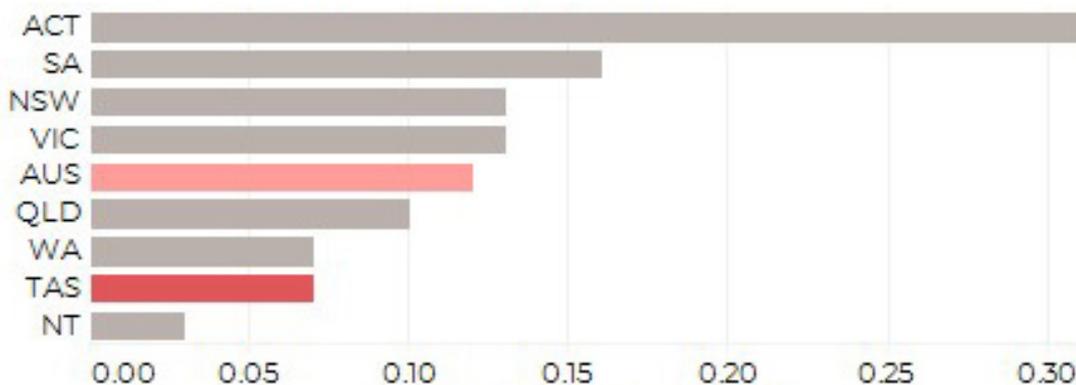
Australian states and territories. This means there is a lot of work to do; Tasmania’s rate of ZEV ownership is currently the second lowest in the country.

We have identified several policy options that Tasmania could pursue to drive greater ZEV uptake, while ensuring this is done in an equitable and affordable manner, but we are also seeking further suggestions. Five strategies that should be considered include the following.

**Figure 5:** EV sales share by state, 2021-2022



**Figure 6:** EVs as share of total car fleet by state, 2021



Tasmania’s rate of ZEV ownership is currently the second lowest in the country



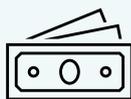
### 1. Develop a ZEV sales target

In line with CSIRO data and Commonwealth projections, Tasmania should aim for 67% of new passenger vehicle sales to be ZEVs by 2030, and 100% by 2035. This will send a firm signal that Tasmania aims to lead the transition to a zero-emissions transport future (see [Technical Policy Paper](#), p. 25, for more detail).



### 2. Investment in charging infrastructure

Steps that can be taken include improving access to public fast-charging, updating building codes to make sure new buildings are 'ZEV ready', and incentivising the installation of ZEV charging in people's homes through subsidies and loans (see [Technical Policy Paper](#), p. 27, for more detail).



### 3. An innovative, short-term, revenue-neutral subsidy scheme

A carefully designed subsidy program funded by a small, stamp duty-style surcharge (around \$350) on new ICE vehicles would ensure that the impact on low-income Tasmanians is minimised, while encouraging those who are purchasing new cars to seriously consider a ZEV (see [Technical Policy Paper](#), p. 28, for more detail).



### 4. Financial assistance for low-income households

Until cheaper or second-hand ZEVs become more widely available, financial assistance through low- or zero-interest loans would help make ZEVs more affordable for Tasmanians. This could be achieved by simply including ZEV purchases in the State Government's [Energy Saver Loan Scheme](#) (see [Technical Policy Paper](#), p. 29, for more detail).



### 5. ZEV car-sharing models

Car sharing models are already widely used in many cities around the world as a cost-effective way for drivers to access cars on an as-needed basis. [Modo](#) – a car sharing company in Vancouver – has reported that as many as 41% of their 8000 members sold a car within a year of joining the service (see [Technical Policy Paper](#), p. 30, for more detail)

#### Have your say

What are the different factors that influence your decision to purchase or not purchase a ZEV?

How much more likely would you be to purchase a ZEV if these incentives were offered?

Let us know by filling out our survey [here](#).

## Policy options for reducing car dependence

Tasmanians own more cars per capita than residents of any other Australian state or territory, and rely more heavily on them for commuting. A [RACT Greater Hobart Travel Behaviour Survey](#) in 2018 found that 75% of respondents commuted to work by private vehicle, with nearly 50% as the sole occupant, and that only 8% of respondents were most likely to travel by public transport in Greater Hobart.

As with most other sustainability challenges today, car use and transport emissions are rooted in human behaviour. Tasmania's very high car dependence is largely a result of its

low-density, sprawling cities. Given limited public transport options, decades of poor urban and regional planning, and chilly winter weather, Tasmanians are likely to remain heavily dependent upon private cars unless there is a clear commitment to improve services and infrastructure, and to address the underlying social and cultural factors that prevent behavioural change. It is essential that lower income Tasmanians are appropriately supported through this transition, especially as residents or poorer regional and suburban communities rely more heavily on their cars than residents of our inner cities.

Tasmanians own more cars per capita than residents of any other Australian state or territory





### 1. Increasing access to public transport options

Rates of public transport use in Tasmania are among the lowest in the nation. Existing infrastructure means that ICE and zero-emissions buses are the most immediately available public transport solution, but the expansion of ferries in greater Hobart, the activation of the northern suburbs transport corridor, connected and responsive ‘smart’ public transport integration, and strategic park-and-ride locations should all be explored as well (see [Technical Policy Paper](#), p. 34, for more detail).



### 3. Embracing remote or flexible working arrangements

The COVID-19 pandemic has shown us that remote and flexible working arrangements are a viable alternative to the conventional car-dominated office commute for many employees. Our analysis has found that if Tasmanians (in suitable occupations) undertook remote work an average of just two days per week, there could be a 14.5% reduction in the State’s transport emissions (see [Technical Policy Paper](#), p. 41, for more detail).



### 2. Promoting the use of active transport options

Active transport (such as walking and bike-riding) reduce emissions and has a wide range of benefits including improved mental and physical health. Strategies can be behavioural (e.g., economic incentives, self-monitoring), structural (e.g., road and fuel pricing, bus and cycle lanes, pedestrian infrastructure), or both (see [Technical Policy Paper](#), p. 37, for more detail).



### 4. Rethinking urban planning strategies

With population in our major cities set to rise, it is critical that additional housing is delivered through urban consolidation and infill development rather than greenfield development on the outskirts. This will reduce transport emissions, enable better access to workplaces, schools, shops, and other essential services, and improve health and congestion by encouraging more walking, cycling and public transport (see [Technical Policy Paper](#), p. 42, for more detail).

#### Have your say

Would you be willing to increase your use of active and/or public transport to reduce transport emissions?

What are the main factors that influence your decision to use or not use public and active transport?

Let us know by filling out our survey [here](#).

## What about heavy transport?

While this paper's main focus is electrification of cars (including, for the purposes of this paper, light vehicles) and behavioural change, with over 1.5 million buses and trucks on Australia's roads, medium- and heavy-duty vehicle (MHDV) decarbonisation and increasing the mode share of rail freight will be critically important over the longer term. Tasmania is an ideal environment for either MHDV electrification or the adoption of hydrogen fuel cell technology because of its relatively short travel distances, the limited number of heavy vehicle routes and the availability of green hydrogen.

Although adoption of electric MHDVs currently lags behind that of passenger vehicles around the world, according to the [International Energy Agency](#), their market share is slowly growing: in 2021, the share of the global bus

fleet that was electric reached around 4%, and heavy-duty trucks around 0.1%.

In Tasmania, and reflecting policies adopted in other states, there is an urgent need to develop and implement a plan to transition Tasmania's public bus fleet to zero-emissions vehicles and to work with transport and logistics companies to promote the adoption of electric and hydrogen fuel cell MHDVs.

Furthermore, rail is already the cleanest option for bulk freight: trucks on the Sydney to Melbourne corridor are estimated to use 19 litres of diesel per tonne of freight for every 100km, versus about 7.5 litres for rail. With these benefits even further amplified in the case of electric trains, Australia and Tasmania should explore opportunities to increase the usage of rail freight and to transition existing railways to zero-emissions technology.



Approximately  
4% of buses  
around the  
world are  
now electric

## CONCLUSIONS: WHERE TO FROM HERE?

This discussion paper outlines several policy options which should be considered during the development of Tasmania's first Emissions Reduction and Resilience Plan for the transport sector. Given that cutting emissions and establishing a clean and sustainable economy requires a whole of community effort, we are interested in your views on the policies that we have proposed and additional ideas which you believe we should include in our submission on Tasmania's Emissions Resilience and Reduction Plan for the transport sector.

We believe that detailed policy analysis combined with a comprehensive survey of the transport preferences and priorities of

the Tasmanian community will make a major contribution to shaping an ambitious plan to cut transport emissions in Tasmania.

Our ultimate goal is to consolidate and build on Tasmania's reputation as a leader on climate action. This will require the adoption of ambitious transport sector emissions reduction and ZEV uptake targets for 2030, ultimately aiming to have the lowest transport emissions per capita across the nation.

Progress towards these goals will depend on available technology, global and local supply of ZEVs, and national policy, but as a community and a state we can and must make a difference.

### Have your say

Are there any key strategies or options that you think should be recommended to reduce Tasmania's transport emissions?

Let us know by filling out our survey [here](#).

