UNIVERSITY of TASMANIA

Tasmanian Greenhouse Gas Emissions Update

Annual progress report for the 2022 reporting year

June 2024

Prepared by the

Tasmanian Policy Exchange

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.

UNIVERSITY of TASMANIA

The TPE has been established at the University of Tasmania to make timely and informed contributions to key policy debates occurring in Tasmania and beyond thus making a positive contribution to the future of our state and its people.

The University of Tasmania has, for the third year running, been ranked the number 1 university globally for climate actions in the prestigious Times Higher Education (THE) Impact Rankings.

We would like to thank the numerous colleagues from across the University who contributed to the update.

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Aims of this Report

This is the University of Tasmania's third annual report on Tasmania's greenhouse gas (GHG) emissions.

Given the climate emergency we are facing, the Tasmanian community requires a clear understanding of how much we contribute to the problem of global climate pollution, but the way emissions are reported is complex and can be confusing.

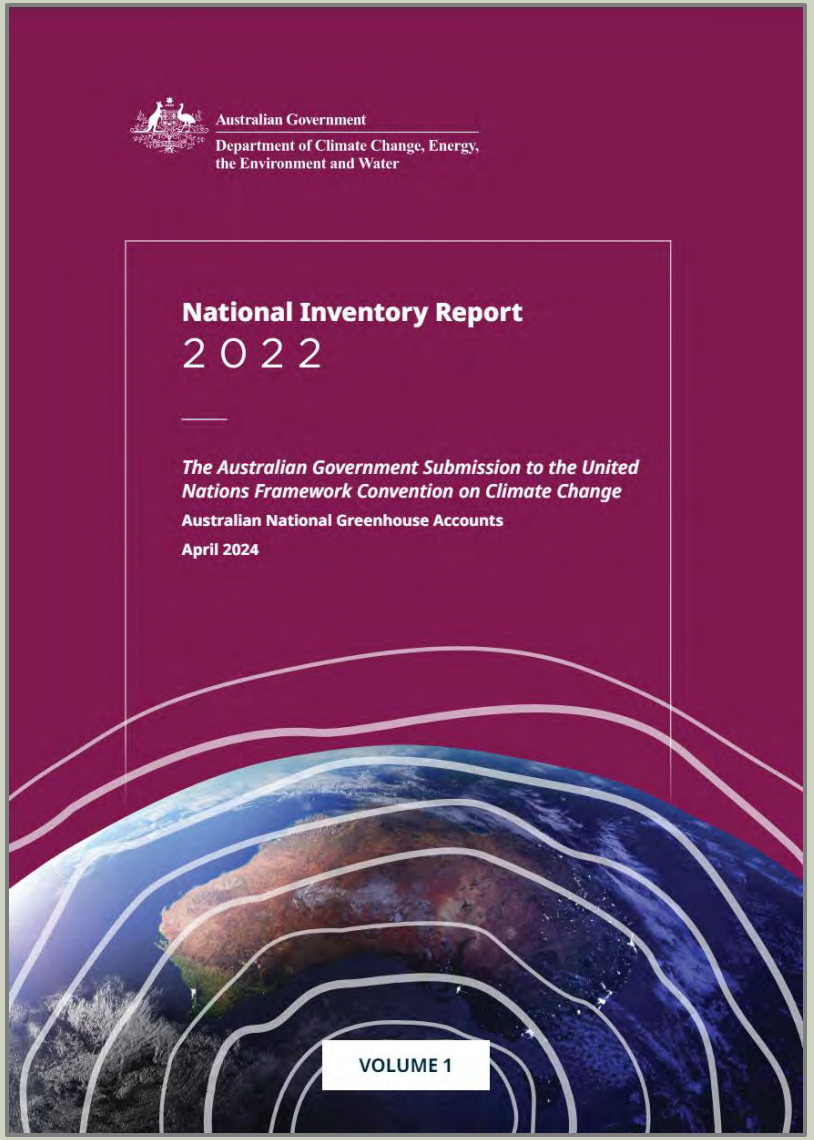
Our annual updates are designed to:

- provide clear and independent analysis of greenhouse gas emissions in Tasmania;
- keep tabs on how our performance compares to other states;
- assess whether we are on-track to meet state and national targets; and
- highlight where we need to focus our efforts and improve outcomes to credibly claim national leadership on climate action.

The University of Tasmania's analysis of Tasmanian climate policy and strategy, including an ongoing work program developing options for decarbonising the Tasmanian economy, can be found here.

Key findings

The latest state-level emissions data	The Australian Government has just released the most recent *State and Territory Greenhouse Gas Inventories* data. The reports estimate CO_2-e emissions from 2022 by sector and by state and territory, providing an important opportunity to understand the sources of Australian greenhouse gas emissions and assess our **progress towards emissions reduction** targets.
How does Tasmania compare?	Tasmania remains the nation's best performer overall and below 'net zero', with net emissions of **-4,338 kt of CO_2-e.** However, we remain dependent on carbon removals from the land-use sector and have not made meaningful progress reducing our **absolute emissions** from other sectors excluding land-use, which have been **essentially unchanged for 30 years**.
What are our emissions reduction priorities for the future?	**Tasmania cannot afford to be complacent** and must continue to reduce absolute emissions to retain our net-zero status and future-proof key industries. **Our best near-term abatement opportunities are in the transport and agriculture sectors.**



The State and Territory Greenhouse Gas Inventories

Australia's greenhouse gas emissions are estimated and reported according to guidelines developed by the United Nations Framework Convention on Climate Change (UNFCCC). The UNFCCC's method, while allowing flexibility to reflect local conditions, enables the production of comparable national and sub-national estimates of carbon pollution.

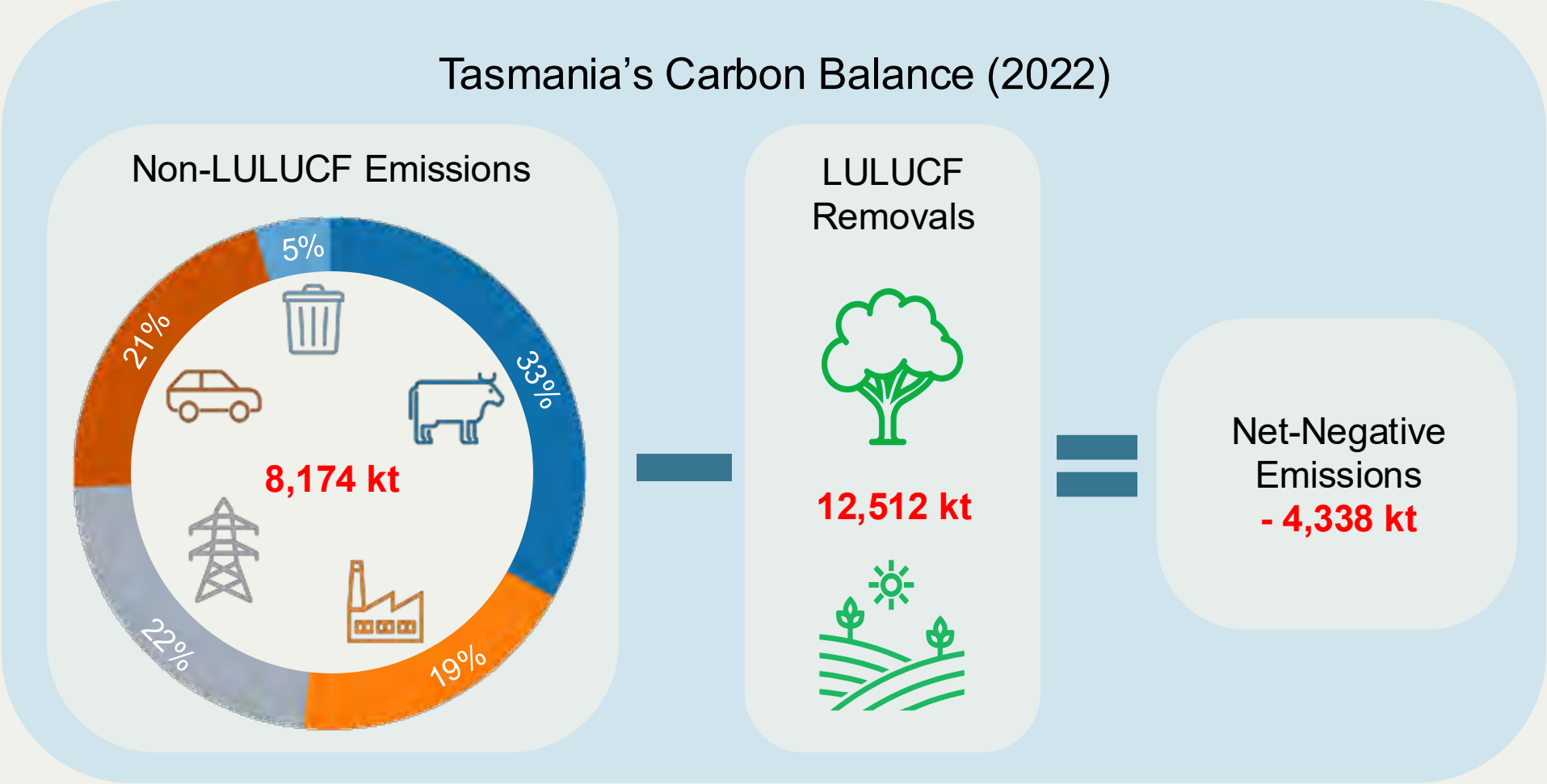
This system is enormously valuable, but it is not perfect and is subject to ongoing evolution. As a result, each year, inventories incorporate updates to UNFCCC methodologies and tools like the Full Carbon Accounting Model (FullCAM). Such changes are applied retrospectively to previous years' emissions tallies.

While the year-to-year adjustments are usually minor, they can be consequential. For instance, in several previous inventories, Tasmania was reported as having achieved net-zero emissions for the first time in 2013. However, the 2020 inventories revised this milestone to 2014, before it returned to 2013 in the 2021 inventories. The most recent edition revises this key milestone again – back to 2014. While these are relatively minor changes, some revisions can involve major adjustments, particularly in the crucial land-use sector. To give just one example, Tasmania's land-use emissions for 2005 (a critical year given its use as a standard baseline in many emissions reduction targets) were revised by just under 9,000 kt – more than all other sources of emission combined.

To be clear, these revisions show the system working as it should: as new information becomes available and modelling methods improve, our estimates must be adjusted accordingly. However, given that these adjustments can easily mean the difference between meeting legislated emissions reduction targets and falling short of them, it is important to treat the resulting data cautiously and rather than rely on unpredictable and uncertain land-use removals, Tasmania and Australia must focus attention on reducing absolute sources of emission, which can be estimated with far greater certainty.

Tasmania's carbon balance: We remain below net zero

Removals in the land use, land-use change, and forestry (LULUCF) sector exceeded gross emissions from other sources in 2022, resulting in net-negative emissions overall (-4,338 kt CO_2-e).



SOURCE: Australian State and Territory Greenhouse Gas Inventories 2022, available at https://www.dcceew.gov.au/climate-change/publications/state-and-territory-greenhouse-gas-inventories

Tasmania's emissions challenge

Tasmania is one of the few jurisdictions on the planet that removes more CO_2-e than it emits. This is an enviable position of which Tasmanians should be proud – but it should not be a reason for complacency.

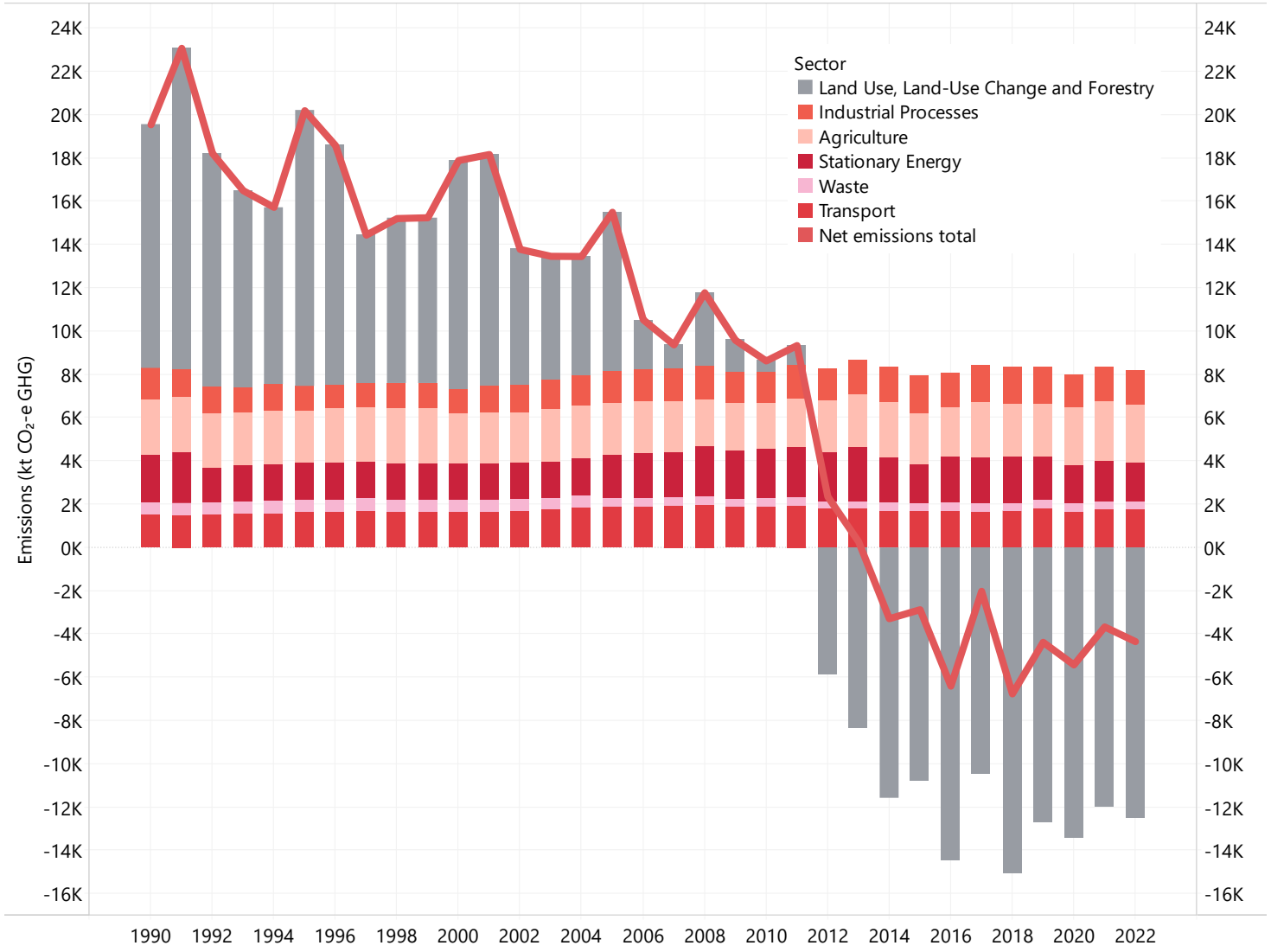
Tasmania's emissions profile is determined almost entirely by two factors:

1. The state's renewable electricity generation, which keeps energy emissions relatively low.
2. The decline of the state's forestry industry, which saw LULUCF emissions plummet in the early-2010s due to the rapid transition from native to plantation logging following years of dwindling harvest levels.

However, Tasmania can't continue to rely on LULUCF removals to maintain net-negative emissions status.

Our 'absolute' emissions (shown on this chart in shades of red and pink) have been stable throughout the whole reporting period. If anything, they have been trending upwards: absolute emissions in 2022 were 766 kt higher than in 1992. While our economy and population have grown in this time, we must do more to reduce absolute emissions or risk losing our leadership and potentially even returning to net-positive emissions.

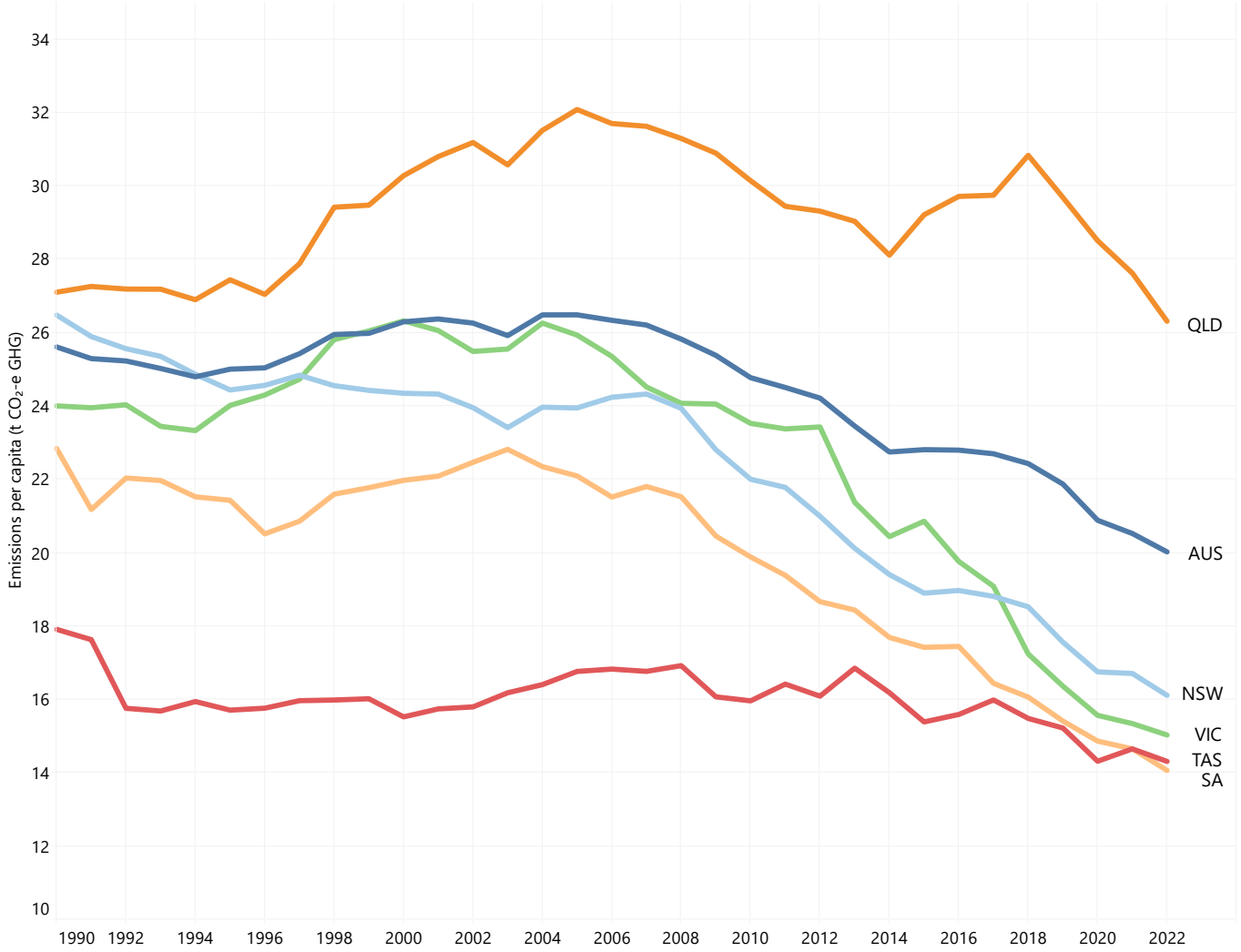
Tasmanian Greenhouse Gas Emissions by Sector, 1990-2022



SOURCE: Australian State and Territory Greenhouse Gas Inventories 2022, available at https://www.dcceew.gov.au/climate-change/publications/state-and-territory-greenhouse-gas-inventories

Tasmania has given up its lead in absolute emissions per capita

Absolute (non-LULUCF) Emissions per Capita, 2012-2022



From 1990 to 2021, Tasmania led the nation not only in its headline 'net' emissions figure (i.e., including removals), but also in its per capita performance for absolute emissions.[1] As of the newly released 2022 inventories, this is no longer the case. Tasmania has been overtaken by South Australia and will almost certainly fall behind Victoria in the 2023 or 2024 inventories. On the current trend, New South Wales will also likely overtake Tasmania by the end of the decade.

Tasmania no longer has the lowest emissions by this important measure because while other states (Victoria in particular) have cut emissions across the board, most sectors in Tasmania have remained stable or even increased their emissions.

Over the past 20 years, Victoria has decreased its absolute emissions per capita by 41% while South Australia has achieved a 37.4% reduction. New South Wales is not far behind with a 32.8% reduction.

Tasmania has only managed a 9.4% reduction. Much of this is thanks to changes in the transport sub-sector due to the availability of more efficient cars and the much more recent uptake of EVs.

1. Given its small size and heavy reliance on imported energy, the ACT has been excluded from this chart. WA and NT have likewise not been included because their per capita emissions are too high for the chart scale.

Tasmania’s emissions by sector

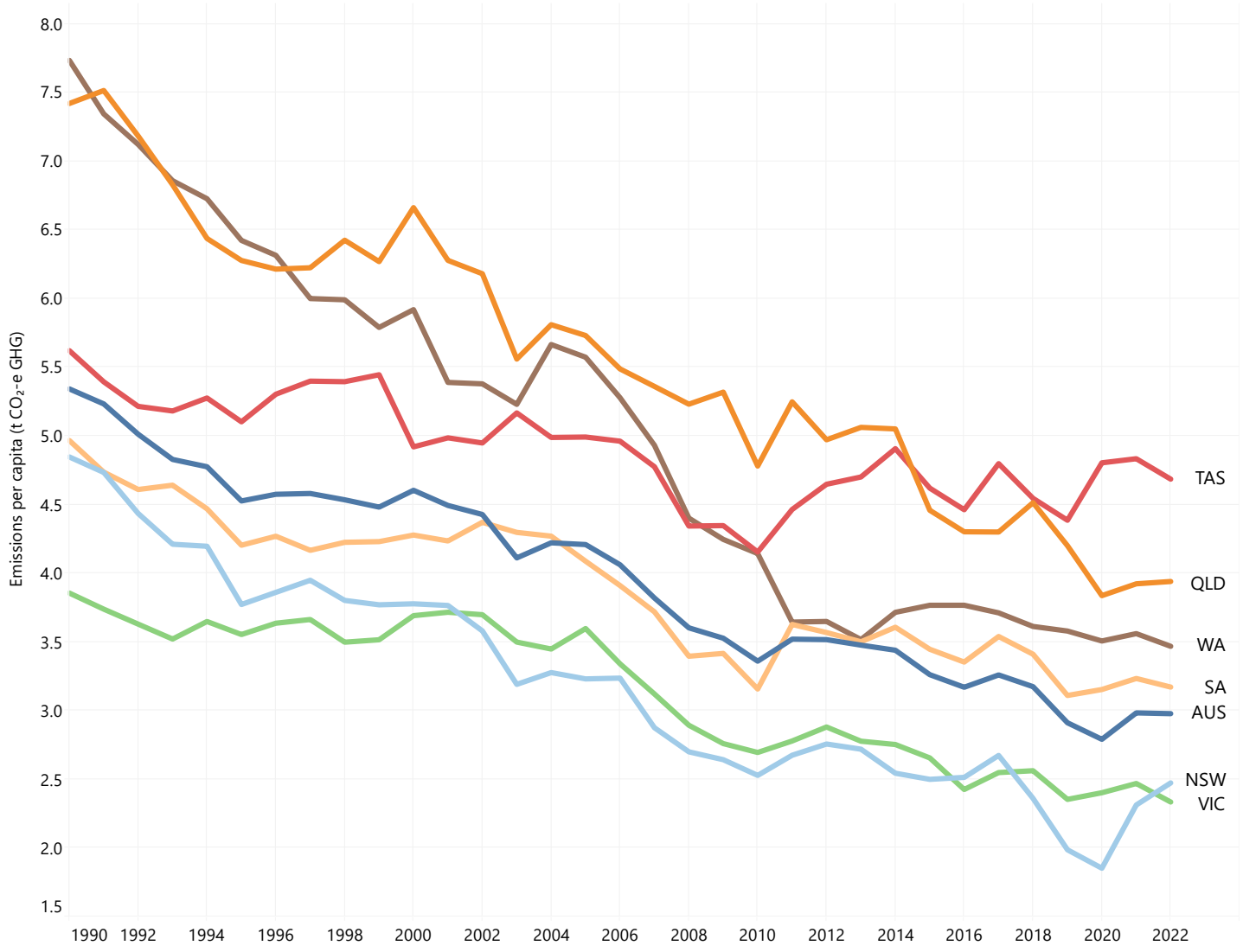
Agriculture

Tasmania's per capita emissions from agriculture remain the highest in the nation excepting the NT, which has not been included on this chart because the structure of its agriculture sector and small, sparse population make direct comparison misleading.

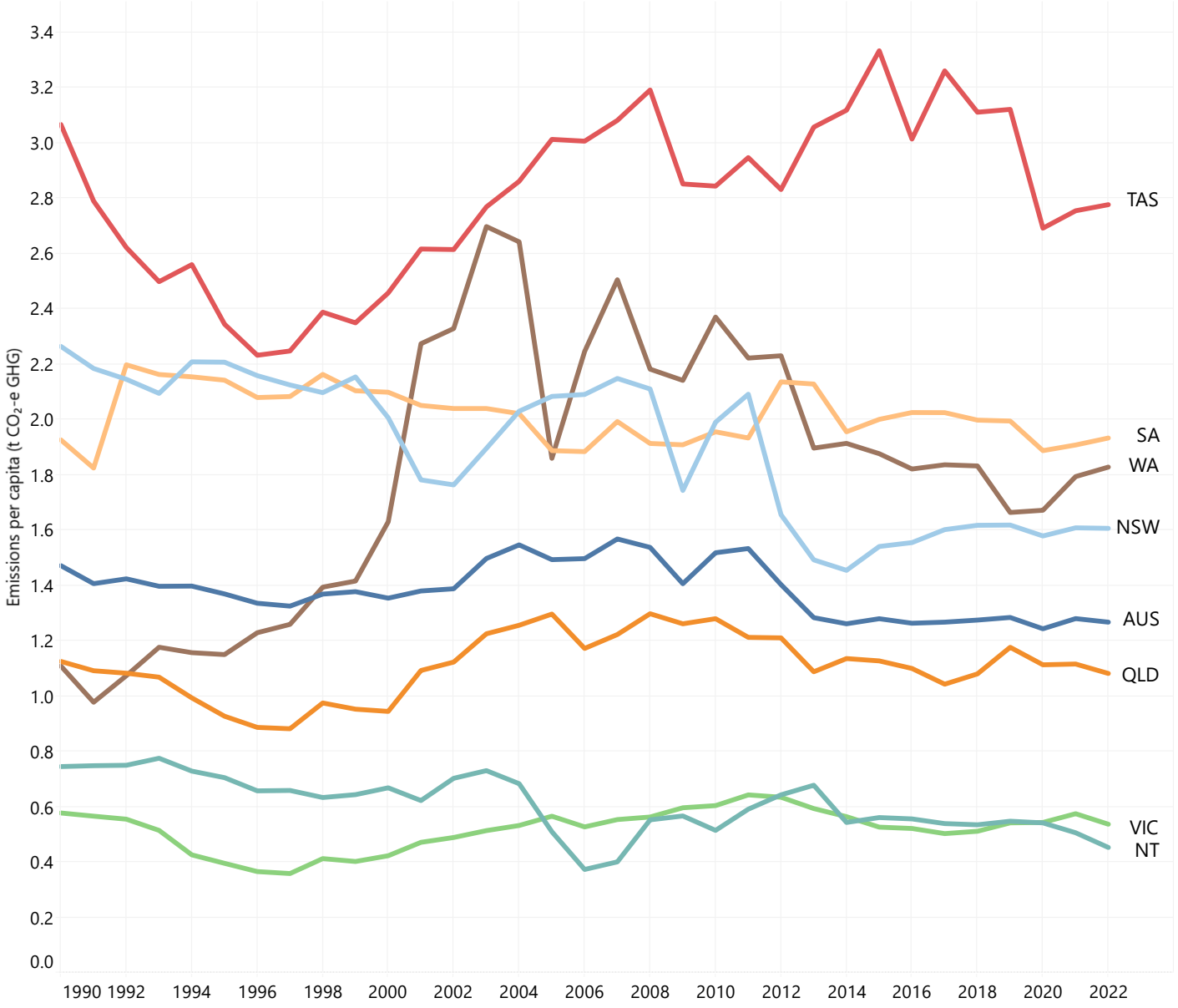
Tasmania's total agriculture emissions (i.e., not adjusted for population) have fallen by 2.4% since the last inventory. Enteric fermentation (methane emission from ruminant livestock) remains the biggest contributor, adding 2018kt to Tasmania's total CO2-e GHG emissions. This also makes it our single highest emitting subsector, which highlights the need to scale deployment of new technologies (like *Asparagopsis* feed supplements) to rapidly reduce emissions.

There has been very significant growth in our agricultural output over the past decade although other states have been able to increase production while cutting emissions. The gross value of agricultural output in WA (adjusted for inflation) grew even more than Tasmania's in the ten years to 2022, while their emissions per capita fell by 16.3% over the same period. Tasmania's agricultural emissions per capita, on the other hand, grew by 13% in that time.

Per Capita Emissions from Agricultural Processes by State and Territory, 1990-2022



Per Capita Emissions from Industrial Processes by State and Territory, 1990-2022



Industrial Processes

Tasmania's industrial processes and product uses (IPPU) emissions remain the highest in the country on a per capita basis. They increased in 2021 and 2022 after a steep drop during the first year of the COVID-19 pandemic.

Tasmania hosts several large industrial facilities in hard-to-abate sectors. While much of the emissions impact of these facilities is in the energy sector, their activities likely also add significantly to our very high IPPU emissions.

This very challenging sector, which is a major employer and makes a significant contribution to the state economy, will need to be a key focus of investment and targeted emissions reduction efforts in the coming years, particularly as many of the large facilities contributing to this sector are covered by the Safeguard Mechanism.[2]

2. The Safeguard Mechanism is part of the Australian Carbon Credit Unit Scheme (ACCU Scheme) and requires facilities that emit more than 100,000 tonnes of CO_2-e to reduce their emissions below a set baseline, or purchase ACCUs to offset their emissions that are above the baseline.

Stationary Energy

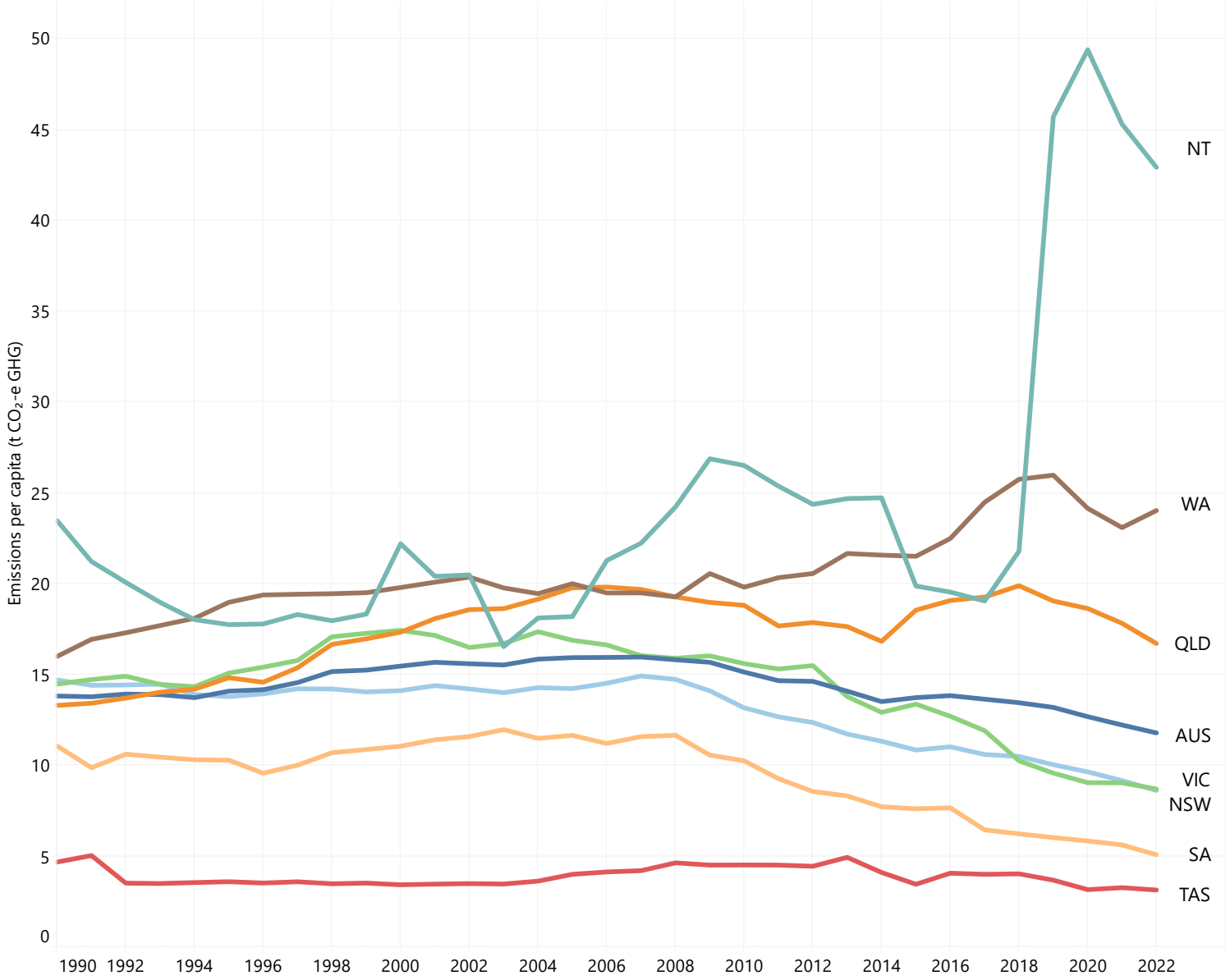
Tasmania's stationary **energy emissions remain low** both in absolute terms and on a per capita basis. This is largely due to historical investment in hydroelectricity infrastructure, which continues to deliver a large volume of renewable electricity.

However, without investment in new generation, Tasmania's edge in the stationary energy sector will decline over time.

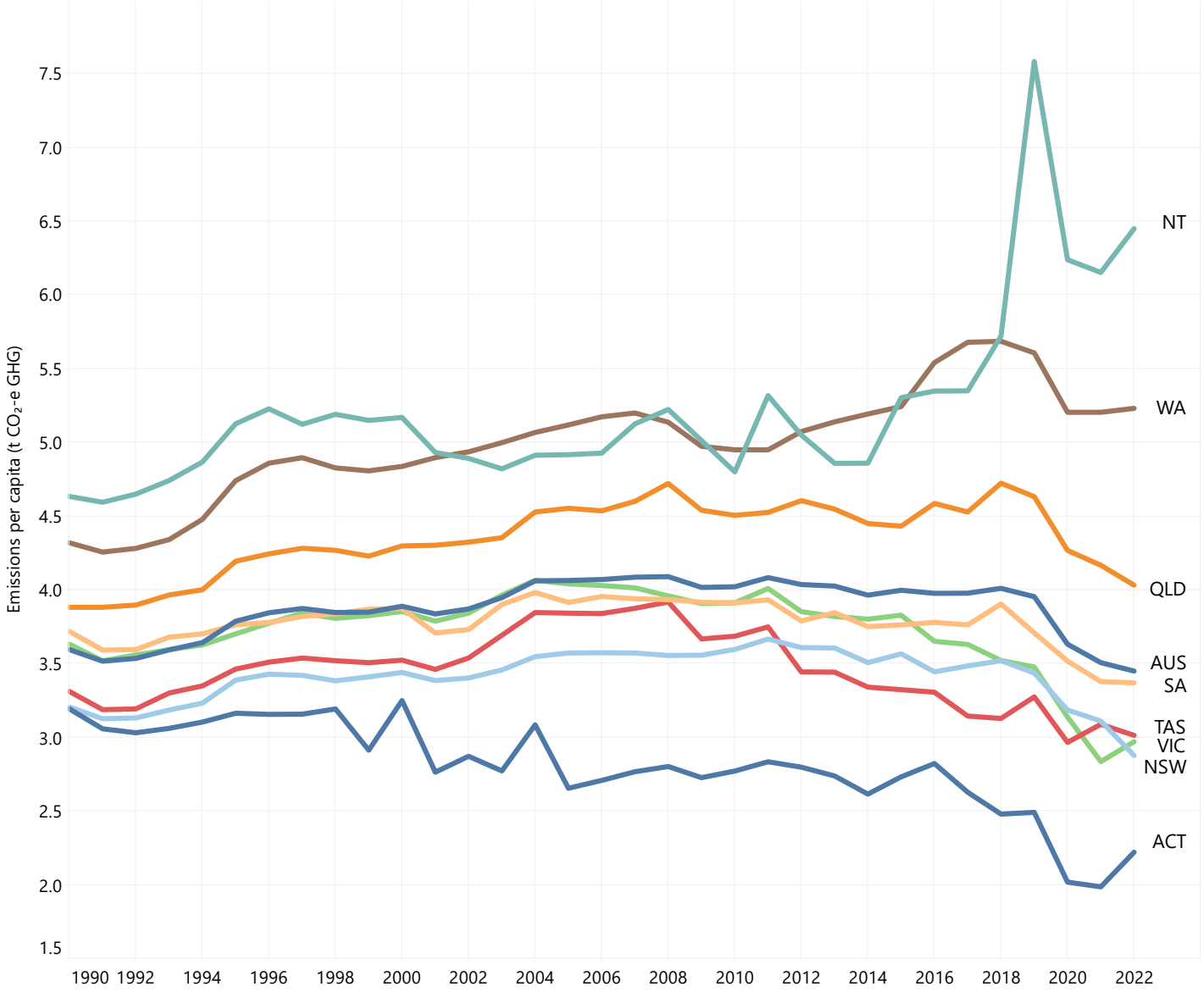
Tasmania's 'self sufficiency' in renewable electricity is already coming under strain. In four of the past five calendar years (2019-2023), Tasmania was a net importer of electricity – we are no longer generating enough renewable electricity on-island to meet our own needs.

We need to invest in new renewable generation and potentially efuels to reduce our dependence on imported fossil fuels and support the decarbonisation and expansion of industries.

Per Capita Emissions from Stationary Energy by State and Territory, 1990-2022



Per Capita Emissions from Transport by State and Territory, 1990-2022



Transport

Tasmania's per capita transport emissions continue to decline, but not as quickly as in states with more ambitious policies around electric vehicle ownership and public and active transport uptake. In recent years, both NSW and Victoria have overtaken Tasmania on a per capita basis.

The main challenge we face in this area is our small, decentralised population. This makes it hard to provide cost-effective, efficient public and active transport options. Use of these forms of transport in Tasmania is very low compared to other states.

In turn, this perpetuates a very high rate of car dependence. Tasmania has more cars per capita than any other state or territory: the average Australian owns 0.78 vehicles, whereas Tasmanians own 0.95. Cars on Tasmanian roads are also older than the national average, meaning they are likely less efficient and therefore more polluting.

It is vital that we redouble our efforts to increase use of public and active transport, and increase electric vehicle uptake. The TPE published a comprehensive analysis of Tasmanian transport emissions, and options for abating them, in 2023.

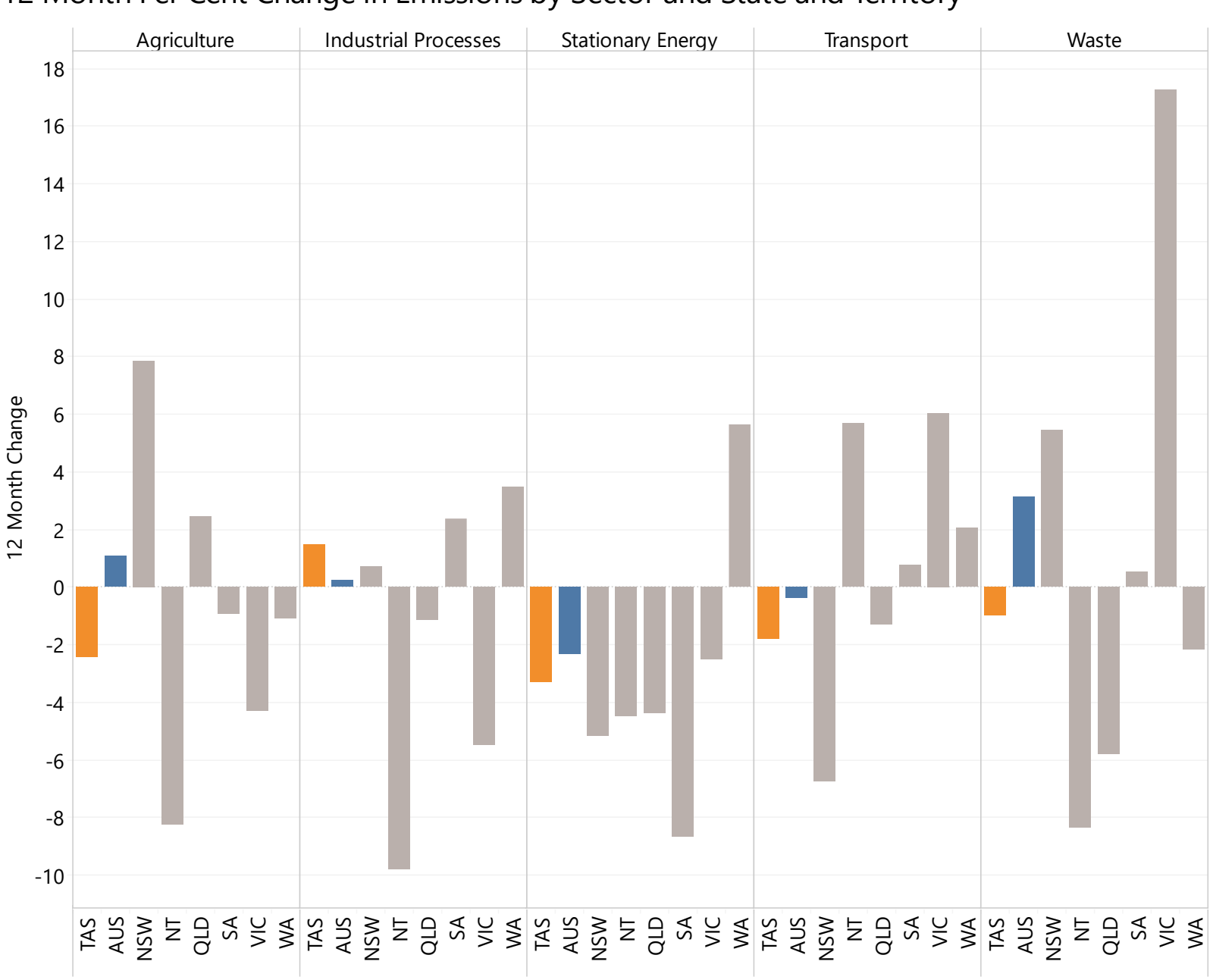
Relative performance since 2021 by jurisdiction

Although Tasmania is not performing as well as some other jurisdictions in several key sectors, our recent progress provides cause for optimism. From 2021 to 2022, Tasmania reduced its absolute emissions in all sectors except for IPPU.

Pleasingly, our abatement performance has been better than the national average, which wasn't the case in TPE's 2021 update.

The large increase in IPPU sector emissions is a cause for concern, but our better-than-average performance in both transport and agriculture is a positive development.

Agriculture and transport should remain the central focus of Tasmania's near-term abatement efforts due to their combination of high abatement potential, technical readiness, and economic feasibility.



Transition Planning

Maximising community benefits from the transition to a zero-carbon economy.

Tasmania has already achieved net zero which is a significant achievement but, as this *Emissions Update* argues, much more needs to be done to reduce emissions from carbon-intensive sectors like cement production, agriculture and transport. Tasmania will also need to produce more renewable energy to enable the phasing out of fossil fuels and to underpin the new clean industries on which our future prosperity depends.

Significant change is inevitable and, understandably, communities are growing apprehensive about the disruption associated with the transition to a low-carbon future. These concerns range from the impact of increased power prices and of wind farms on communities, to broader economic and social disruption associated with rapid decline of some traditional industries and the rise of low-carbon alternatives.

Tasmania is well-placed to benefit from this transition, but it is far from certain that our considerable opportunity will be realised. Emerging evidence suggests that regional transition plans developed by communities with the support of federal, state, and local governments help ensure that communities can harness the social, economic, and environmental opportunities – and mitigate the challenges – associated with decarbonisation.

Developing community-led transition plans would help build political support for decarbonisation and position Tasmania as a best-practice example of equitable, community-led decarbonisation that generates improved employment, investment, innovation, and wellbeing outcomes.

What’s next and where should we focus our energy?

Tasmania’s emissions data for 2022 show that while we are heading in the right direction, progress remains too slow. Despite our enviable net-negative emissions status, we have the potential to contribute much more to national and global emissions reduction efforts than we do currently. However, stepping up our commitment to decarbonisation is not merely a moral imperative: it would also bring enormous economic benefit to Tasmanians.

So what should governments and ordinary Tasmanians do?

We have argued here and elsewhere that Tasmania’s best short-term emissions reduction opportunities are in the agriculture and transport sectors. Given that a high and increasing share of our agricultural emissions come from livestock, more support to scale up and roll out methane-reducing seaweed supplements will be critical. In the transport sector, far more public investment is needed to provide safe, reliable, and comprehensive public transport options and incentivise faster uptake of electric vehicles.

However, we also need to reduce our very high per capita IPPU emissions over the medium term. The technological and economic challenges of abatement in this sector mean that planning, investment, and policy support need to be put in place as soon as possible. Commonwealth support for energy-efficiency and fuel substitution upgrades at Cement Australia’s Railton facility is a promising example of recent progress.

Above all we need to work with communities to develop holistic regional transition plans long-term community benefits from the transition to a low-carbon future.

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Update prepared by the **Tasmanian Policy Exchange**

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