



Low and Zero Emission Mobility Policy

July 2023

RACT Policy – Low and Zero Emission Mobility

Mobility Strategy Pillar: Future Mobility and Sustainability

Future mobility is the second component of RACT's mobility strategy. Within this pillar, RACT's vision is to:

- Have a range of mobility options available that are efficient, increase flexibility and keep our community safe.
- Meet the needs of the future through the delivery of cleaner more efficient transport methods, such as electric vehicles.

Sustainability is the third component of RACT's mobility strategy. Within this pillar, RACT's vision is to:

- Reduce fuel emissions through the use of affordable and clean energy.

Low and zero emission mobility policy statements

Low and zero emission mobility explained

- Low and zero emission mobility covers a range of transport modes including:
 - Battery electric vehicles (BEV), plug-in hybrid electric vehicles (PHEV) and fuel-cell electric vehicles (FCEV) powered by hydrogen. This includes passenger, commercial and heavy vehicles as well as electric motorcycles.
 - Electric buses, including autonomous buses, as well as trams or trackless trams, light rail or trains as well as ferries and boats.
 - Electric micro-mobility transport (MMT) devices such as e-bikes, e-scooters and e-skateboards.

Purpose of this policy

- As Tasmania's peak motoring body, RACT will play a leading role in the continued rollout of low and zero emission vehicles and transport modes.
- This policy aims to inform RACT's position on low and zero emission technology, including: electric vehicle charging infrastructure, adoption, cost, incentives and subsidies, education and awareness, preparing for electric public transport, MMT devices and autonomous vehicles as well as hydrogen vehicle technology.
- This policy outlines how RACT will advocate for low and zero emission mobility during consultation with Australian, Tasmanian and local governments, key transport stakeholders and media.

Relevance to RACT

- RACT will **access or** undertake research to understand the impact of future mobility options, invest in electric vehicle infrastructure, educate Tasmanians about autonomous vehicles and prepare for their introduction.
- RACT will explore a change in the RACT fleet of vehicles over time.

Background, evidence and position

Background

Electric vehicles (EVs) derive all or part of their power from the electric grid and include light and heavy vehicles. They are divided into battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs), which are powered by electric and internal combustion engines.

Battery electric vehicles are powered by connecting to a charging station, which provides electricity that is stored in batteries. They produce no tailpipe emissions.

However, while PHEVs use batteries to power an electric motor that is also charged, they also use a petroleum-based or alternative fuel to power an internal combustion engine.

Emissions

- Tasmania's transport sector has the second highest greenhouse gas emissions of all sectors, responsible for 19% of emissions in 2019. However, Tasmania is almost fully powered by renewable energy (Electric Vehicle Council, 2022).
 - Electric vehicles powered by this renewable energy sector could significantly improve vehicle efficiency through reduced transport costs, lower environmental and health impacts through reduced emissions and help improve the state's energy security.
 - Tasmania's high renewable energy profile, small size and shorter commuting distance, as well as a growing tourism sector suggests Tasmania should be well placed to realise many of the potential benefits of EVs.

Adoption and cost

- Electric vehicle purchases in Australia are increasing but remain low compared to other nations. The same can be said for Tasmania, which has the second lowest number of EVs in Australia (Electric Vehicle Council, 2020).
- Electric vehicle model affordability in Australia is limited due to high upfront vehicle purchase costs caused by lithium prices and the cost of manufacture, high vehicle taxes and lack of policy support (Electric Vehicle Council 2022).
- While electric vehicles have a higher purchase price relative to ICE vehicles, their upfront cost is expected to reach parity in the late-2020s to early-2030s. They also have substantially lower running costs over their lifecycle and therefore and, according to the Electric Vehicle Council (2019), may already be the lower cost option.
- Lifecycle savings from EVs are also expected to rise between 2020-25 due to cheaper charging costs in comparison to fuel, as well as cheaper servicing costs compared to ICE vehicles. This is due to fewer

components and therefore fewer parts to maintain or replace. Barriers to EV uptake in Tasmania include purchase price, a limited selection and range of models, lack of public charging infrastructure (leading to range anxiety), a lack of consumer awareness and charging times (Tasmanian Climate Change Office, 2019).

- Charging times, ranging from 2-30 hours for slow chargers (depending on output and battery size) and 8-90 minutes for fast and ultra-fast chargers, are also barriers.
- Upfront/annual costs associated with EVs include on-road costs, such as the luxury car tax, registration and insurance, which are discussed in the evidence section (RACT Vehicle Operating Costs Survey, 2019).
- AEVA argues that motor tax and stamp duty subsidies within registration fees should be introduced in Tasmania. The motor tax is set at the same rate for EVs as for a four cylinder ICE vehicle, however, the stamp duty has been waived for new and used electric vehicles for two years starting 2022.
 - AEVA proposes that the Tasmanian Government remove the motor tax and reduce stamp duty for EVs in the short to medium term to increase uptake.
 - Almost all states have registration subsidies (EVC, 2022).
- AEVA also proposes that an interest free loan scheme be established in Tasmania to support the cost of purchasing EVs (AEVA, 2020).
 - ACT residents can apply for a \$15,000 interest-free loan to help with the cost of purchasing a Zero Emission Vehicle (ZEV) (EVC, 2022).
- Tariffs and incentives to encourage off-peak charging of electric vehicles, not yet offered by TasNetworks, can increase EV uptake, while reducing electricity use and mitigating the need for network upgrades (TCCO, 2019).
 - This is important as EVs have the potential to overload electricity grids during peak demand periods, due to large populations charging at home during the early evening.
 - TasNetworks has stated that the earliest they could introduce a network tariff is the 1st of July 2024.

Infrastructure considerations

- In order for public charging stations for EVs to be reliable, a rule of thumb is that there needs to be one charging station for every 10 EVs and six to eight chargers for every 50 to 75km along major roads and highways (Motor Trades Association Australia, 2022).
- The Tasmanian Government committed \$600,000 towards its second Electric Vehicle ChargeSmart Program, and added another \$175,000 after reflecting on the high quality of applications, bringing the total investment spend to over \$1.7 million, to support the rollout of a state-wide charging network in 2021-2022 (The Department of Premier and Cabinet, 2021).
 - As part of its Fast Charger Support Scheme, TasNetworks subsidises public fast charger installation costs.
 - RACT has installed its own electric vehicle charging stations at a range of properties throughout the state.

- At the time of writing, Tasmania had no standardised plug type for EV charging, which inhibits uniformity during station rollout and public use. The Federal Chamber of Automotive Industries (FCAI) recommends Type 2 plugs for slow AC charging and either CHAdeMO or CCS for fast DC charging.

Maintenance

- The Tasmanian Automotive Chamber of Commerce (TACC) will be advocating for more licensed electric vehicle technicians, emphasising the importance that the license requirements should adhere to the Australian Standard for Electric Vehicle Operations, Maintenance, and Repairs (TACC, 2022).
 - The Australian Automotive Industry currently has a deficit of 31,150 skilled labour positions. This number is estimated to rise to 38,000 by the end of 2023.

Electric vehicle fleets

- In Australia, corporate and government fleet procurement can assist in increased EV uptake through demonstrating demand to carmakers, supplying the used car market and stimulating the rollout of charging infrastructure (EVC, 2019).
 - EV governmental fleet targets are in place in South Australia and NSW.
 - The ACT also has a fleet target for newly leased vehicles.
- The Tasmanian Government also commenced a Smarter Fleets program in 2018, providing guidance and supporting the uptake of electric vehicles in local government and Tasmanian Government fleets, as well as heavy vehicle fleets.
 - In its 2022-23 budget, the Tasmanian Government dedicated funding towards the transition of government fleet to fully electric vehicles by 2030. The funding is stretched over a period of three years and totals to \$2.25 million, bringing the total funding for the initiative since its inception to \$4.6 million.
- Importing used EVs from overseas, as the Good Car Company does in Tasmania, helps to stimulate the second-hand electric vehicle market by increasing model availability, vehicle supply and therefore uptake (Arena, 2018).
- As part of its strategy to support the electric vehicle uptake in the region, the Tasmanian Government is waiving the stamp duty on used and new electric vehicles for two years (The Department of Premier and Cabinet, 2022).
 - This stamp duty exemption ends on 30 June 2023.

Other government interventions

- Due to the barriers of EV adoption, and to assist reaching a target of zero net emissions by 2050, the Tasmanian Government established an Electric Vehicle Working Group in 2017 to increase uptake of EVs (TCCO, 2019).
- The Australian Government released a discussion paper in September 2022 which served as a path towards the introduction of a National Electric Vehicle Strategy. The discussion paper included a proposal to enhance the fuel standards to attract global manufacturer to enter the Australian market.

- In April 2023, the Australian Government announce a National Electric Vehicle Strategy to increase the uptake of EVs and reduce the countries emissions for the wellbeing of Australians (Australian Government, 2023).
 - It included developing an Australian Fuel Efficiency Standard for new light vehicles, a battery recycling, reuse and stewardship initiatives for EVs and other large format batteries, and a national mapping tool to increase investment and uptake the EV charging infrastructure,
- Electric vehicles do not pay a road user charge.
 - The Tasmanian Government has announced that it will introduce a road user tax for electric vehicles in 2027. However, the tax rate is yet to be determined.
 - Infrastructure Australia and the Senate, as well as Infrastructure Partnerships Australia, suggest EV owners should pay a per-kilometre charge capped at what ICE vehicles owners pay on fuel excise. An appropriate percentage of revenue would go towards road safety and infrastructure improvements.
 - This system is supported by the Australian Automobile Association.
- In 2021, electric car owners in Victoria filed a court case to the Higher Court against the newly implemented road user charge issued by the Victorian government (Drive, 2022).
 - VIC introduced a Zero-and-Low-Emissions Vehicles (ZLEV) distance-based charge on July of the same year. The charge imposed a levy of 2.6 cents for each kilometer driven by pure electric vehicles, and 2.1 cents per kilometer for plug-in hybrids.
 - Other Australian states are awaiting the final decision by the Federal Government before taking action. The case will be heard in the High Court in February 2023.
- The federal parliament signed a deal which allows car buyers tax breaks that could cut the cost of electric vehicles by up to \$12,500 (The Sydney Morning Herald, 2022).
 - This deal came at the cost of tax breaks on plug-in hybrids, which will stop on April 2025.
 - The tax breaks on electric vehicles are estimated to cost the government \$4.5 billion in revenue. However, carving out tax breaks on the plug-in hybrids will reduce that cost by \$930 million over a decade.
 - A vehicle must cost less than the threshold for the luxury car tax, which is \$71,849 for most cars and \$84,916 for low to zero-emission vehicles, in order to be eligible for the tax benefit.
- The ACT will also allow zero emission vehicles to use transit lanes until 2023 (EVC, 2019).

Electric public transport

- There are many forms of electric public transport, including electric buses, trams or trackless trams, light rail or trains, ferries, and boats (TCCO, 2019).
- In April 2021, Metro received its 100th low emission bus to complete the Accelerated Bus Replacement Program. An additional 26 buses are also going to be received in the near future (Metro Tasmania, 2021).
 - These last 26 buses, although fitted with Euro6 diesel engines, will allow for a future retrofitting of either a battery electric or hydrogen fuel cell drive trains. This will enable Metro to transition to zero emission fleet more smoothly in the future.

- The 2020-21 State Budget announced that Metro will be undertaking a three-year trial within the next two years to investigate the transition to zero emission buses (Tasmanian Government, 2021).
 - The Metro trials will involve three battery electric buses in Launceston and three hydrogen fuel cell electric buses in Hobart (The Department of Premier and Cabinet, 2022).
- In May 2022, Tasmania saw the first two fully electric SkyBuses transporting passengers between Hobart Airport and the city (SkyBus, 2022).
 - These two buses are among 70 that the Skybus provider Kinetic has hitting the roads across Australia and New Zealand this year.
- RACT, together with the City of Hobart and the TCCO, delivered Tasmania's first demonstration of an autonomous (driverless) electric bus in 2019. The benefits of autonomous electric vehicles include improved safety, reduced congestion and emissions, first and last mile connections to public transport, access to ride and car sharing, reduced car parks and access for those with mobility challenges.

Micro-mobility transport

- Electric micro-mobility transport (MMT), including e-bikes, e-scooters and e-skateboards, allow people to be less dependent on traditional transport. They can reduce emissions, enhance mobility access and choice, reduce congestion and provide a cheaper, more manageable commute (NTC, RAC, TCCO, and Department of State Growth, 2019).
 - This technology can be encouraged through separated cycle lanes and parking facilities. Encouraging employers to provide charging opportunities for commuters can increase use of e-bikes and e-scooters.
 - RAC and RACQ believes MMT devices must consider the safe interaction with vehicles, including through separated cycleways, and ensuring operators comply with relevant legislation.
 - The University of Tasmania claims it has experienced an increase uptake of e-bikes from staff and students since 2011, while Australia Post trailed three-wheeled e-bikes in Tasmania in 2017.
- E-bikes are legally available in Tasmania under the Tasmanian Road Rules and Vehicle and Traffic Act 1999. This includes Power Assisted Pedal Cycles (PSPCs) that travel up to 10km/h (200 watts) as well as “pedalecs” that travel up to 25km/h (250 watts). PAPCs primary source of power are pedals, while pedalecs rely mostly on the motor.
- Personal mobility devices (PMDs) are a subsection of MMT devices, which include e-scooters and e-skateboards.
 - In May 2021, the National Transport Commission's (NTC) proposal to the ministers to amend the Australian Road Rules (ARRs) to include PMDs was endorsed. These amendments are now reflected in the ARRs (National Transport Commission, 2022).
 - It is the first time that PMDs and innovative vehicles such as e-scooters are included in the ARRs. PMDs can now be used on shared paths, separated paths, and bicycle paths at maximum speed limits set as 50 km/h or less, subject to the law of the jurisdiction.
 - The Tasmanian Government has finalised regulatory and/or legislative changes to safely allow e-scooters and other personal mobility devices (PMDs) in Tasmania. These changes were based on

amendments to the Australian Road Rules (ARR), made by the Australian Government, to include a model framework for the regulation of PMDs.

- It was up to each state and territory whether they introduced the new rules as written or with changes. The changes focused on speed limits, accessibility on roads, footpaths, shared paths and bicycle paths.
- The e-scooters trials took place in Hobart and Launceston in 2022 with the approval of both city councils.
- Under the Tasmanian Road Rules, an electrically powered device with one or more wheels designed to transport one person that is fitted with a stopping system using brakes, gears, or motor control, is considered a pedestrian. A PMD must not exceed 125 cm in length, by 70 cm in width, by 135 cm in height, or 45kgs in weight, or be capable of exceeding 25km/h when powered by the motor(s) (Department of State Growth, 2022).
- E-scooters and other PMDs, such as e-skateboards, help to reduce unnecessary car trips and congestion by improving first and last-mile connections to and from public transport. PMDs complement public transport as they allow people to ride to and from buses, trains or ferries at distances they would not normally walk or cycle (Bird Mobility, 2021).
- In December 2021, the City of Hobart and the City of Launceston partnered with two providers to introduce e-scooters in Tasmania. This was part of a 12-month long micromobility trial (City of Hobart, 2022).
 - In July 2022, halfway through the trial period, the City of Hobart conducted a community survey to gather feedback on how the e-scooters are going. The survey closed on the 24th of July, and is currently undergoing review.
 - The City of Burnie joined Hobart and Launceston in June 2022, bringing in 150 e-scooters as a trial.
 - The City of Devonport endorsed an e-scooter trial in July 2022. However, the trial wholly excluded residential areas and was established for recreational trials only.

Fuel-cell electric vehicles (hydrogen)

- The Department of State Growth has developed a draft Tasmanian Hydrogen Action Plan, which outlines the following:
 - Fuel cell electric vehicles (FCEVs) operate through a chemical reaction between hydrogen and oxygen, which releases electricity to power an electric drive-train. These vehicles provide significant environmental benefits, through reducing transport related greenhouse gas emissions and air pollution.
 - These technologies are active across the world and offer a comparable experience to traditional ICE vehicles including driving experience, driving range and refuelling time. They are also more efficient than ICE vehicles.
 - Together with battery electric vehicles, hydrogen mobility technologies can use Tasmania's renewable energy to power the state's transport sector and provide economic, environmental and energy security benefits.

- Hydrogen FCEV technology is particularly well suited to heavy vehicle applications, as it can avoid the potential weight issues associated with using batteries to power heavy electric vehicles, with quicker refuelling times. Hydrogen is also more cost effective for larger vehicles.
- The Tasmanian Government will investigate opportunities for the use of hydrogen transport technologies in the state, with an initial focus on 'return-to-base' transport activities, such as buses, fleet vehicles, freight (including road and rail) and marine applications (such as ferries or barges), as this is the most efficient use of hydrogen refuelling infrastructure.
- The Tasmanian Government will also explore opportunities to trial hydrogen FCEVs within its fleet to gain first-hand experience of the technology. This can serve as catalyst for uptake in the private sector.
- The Tasmanian Renewable Hydrogen Fund will support feasibility studies and investment for pilots, trials, demonstrations and pre-commercial projects associated with renewable hydrogen production, storage, export and use within Tasmania.
- The National Hydrogen Strategy has also identified Tasmania as having a high potential for hydrogen production, citing Bell Bay as a viable location for production and distribution of the gas to main population centres and for export. The strategy also discusses the following (COAG, 2019).
 - Hydrogen can power fuel cell electric cars, trucks, buses and trains. The advantages of hydrogen powered vehicles compared to battery electric vehicles are: faster refuelling times and the ability to travel longer distances carrying larger loads before refuelling.
 - The key barrier to FCEV uptake is refuelling infrastructure. Refuelling hydrogen vehicles requires a network of stations, similar to what exists for petrol and diesel, with infrastructure being mapped out nationally.

Evidence

Emissions

- A shift to 100% electric vehicles would eliminate at least 6% of Australia's greenhouse emissions (Beyond Zero Emissions, 2016).
- Furthermore, air pollution from motor vehicles kills over 1,700 Australians per year (Department of Infrastructure, Regional Development and Cities, 2018).
 - Electric vehicles produce zero exhaust emissions so widespread adoption of these vehicles would make marked improvements to Australia's air quality (EVC, 2019).
- Tasmania's transport sector has the second highest greenhouse gas emissions of all economic sectors at 19% (Electric Vehicle Council, 2022).
 - However, Tasmania's grid is powered by 100% renewable energy, allowing EVs to produce close to zero emissions (TCCO, 2020).
- Sulphur and aromatics contents are the two main factors preventing the widespread use of engines compliant with Euro 6d standards fuel engines.

- The Fuel Quality Standards (Petrol) Amendment Determination 2022, an announcement by the Commonwealth to change the petrol quality standards, was issued in July 2022. It mandated the introduction of low sulphur gasoline starting on 15 December 2024 for all grades of gasoline (Australian Automobile Association, 2023).
 - In Europe, the amount of aromatics is restricted to 35%, and Methyl Tertiary Butyl Ether (MTBE) is added to gasoline to preserve octane levels. However, because of its potential to contaminate groundwater, MTBE is prohibited in Australia.
 - The current Australian fuel quality standard caps the amount of aromatics in gasoline to 45%, with a pool average of 35% for all gasoline categories.
- Electric vehicles in Tasmania recorded just 140 grams of carbon dioxide per kilowatt hour when charged from the grid in 2016. This compared to Victoria (1080 grams), NSW/ACT (830), Queensland (790), Western Australia (700), Northern Territory (640) and South Australia (490) (Climate Works, 2018).
- Australia could achieve a total saving of \$5.5 billion and 7.1 MtCO_{2e} in emissions if electric vehicles make up 50% of new vehicle sales by 2030 (Climate Works, 2022).
 - If the rate of new electric vehicle sales reaches 76% by 2030, the savings are predicted to reach \$20 billion for consumers and an avoidance of 24 MtCO_{2e} in emissions.
- In their 2022-23 budget, the Queensland Government dedicated \$55million for the Zero Emission Vehicle Strategy 2022-32 and Action Plan 2022-24 (Queensland Government, 2023).
 - This includes \$45 million over 3 years to offer \$3,000 rebates for eligible zero emission vehicles with a dutiable value up to \$58,000 to help reduce the upfront purchase cost and a \$10 million co-funded fast charging infrastructure scheme over 2 years with local government and the private sector to deliver additional public fast charging electric vehicle infrastructure in Queensland.

Adoption and cost

- In the medium-sized cars category, EV sales surpassed petrol-driven vehicles in 2023 for the first time on record (Australian Automobile Association, 2023).
 - From January to March 2023, there were 7,866 electric medium-sized cars purchased in Australia. That's 58.3% of all medium-sized vehicle sales.
 - However, ICE vehicles still dominated in all other categories.
 - 17,396 EVs were sold in Q1 2023. A 49.4% increase from the previous quarter.
- In Tasmania, there were 295 EV sales in the first quarter of 2023, representing a 243% increase in sales from the first quarter of 2022 (Australian Automobile Association, 2023).
 - Compared to the last quarter of 2022, the EV sales increased by 33%.
 - EVs represented 6.7% of all light vehicle sales while ICE vehicles represented 87%.
 - Tesla was the top pick of purchasers, dominating the brands chart of sales.
- RACT's 2019 member survey indicated that 51% of those surveyed would not purchase an electric vehicle in the next five years. However, 56% said they would do so if there was a financial incentive.
 - The survey also revealed the most contributing reasons for not purchasing an electric vehicle is the price of purchase, the running costs (72%), and the lack of charging infrastructure (64%). Environment was the main reason to purchase an EV (81%).

- While EV purchases are increasing slowly in Tasmania, as of September 2022 there were 1,174 registered electric vehicles. Of these, 731 are motor cars, 319 are station wagons, 113 are motorcycles, and 2 are buses (Department of State Growth, 2022).
- 6,900 electric vehicles were sold in Australia in 2020, representing 0.78% of all new light vehicle sales. This is an increase from 2019, when 6,718 electric vehicles (0.65%) were sold (Electric Vehicle Council, 2021).
- EVs could make up 49% of new vehicle sales in Australia by 2030 and 100% new sales by 2040 (Energeia, 2018).
 - Labor's assumptions state that electric vehicles sales will make up 82% by 2023. In contrast, the Coalition's assumptions suggest that electric vehicle sales will only make up 29% of all car sales by 2023 (The Driven, 2021).
- In 2021, there were 31 electric vehicle models available to purchase in Australia (Energy Matters, 2021).
 - In 2022, it is expected that seven more electric vehicle models will be available.
- Electric vehicles will reach cost parity with internal combustion engine vehicles by 2030. This will assist in boosting EV sales. Furthermore, the range capacity of EVs is also expected to reach parity with ICE vehicles by 2024, with ranges varying from 100km to 550km (Australian Financial Review, 2022)
 - Over a lifespan of 15 years, EVs represent a lower running costs which allows for a cost-competitive option compared to ICE vehicles (Car Expert, 2022).
 - Battery capacity is closely linked with advancements and the availability and price of lithium, which is reducing by 8-9% each year (Energeia, 2019).
- Lithium-ion battery packs are the most expensive component of an electric vehicle. However, global investment in electric vehicle battery production is driving the demand for lithium up, and the cost of batteries down (Bloomberg, 2018).
 - The cost of a lithium-ion battery pack has dropped from US\$1160/kWh to US\$174/kWh by 2018. It is expected to drop to \$94/Kwh by 2024, when EV cost parity with ICE vehicles is reached, and to \$62/kWh by 2030.
 - The growth of electric vehicles from 2017-2023 will increase global demand for lithium batteries by 32.4%.
- When taking into account energy use per km, electricity versus fuel costs, costs per km and average annual travel costs, the average annual costs for ICE vehicles is \$1923, compared to \$623 for an EV. This is a fuel saving of \$1300 a year and \$6500 over five years for EV owners (EVC, 2019).
- The cost of charging an electric vehicle could be calculated by multiplying the size of the battery by the applicable electricity rate (Jolt, 2021).
 - For example, if the battery size is 65kWh and the electricity rate is 0.55 per KWH, then the cost of fully charging the electric vehicle would be (65kWh x 0.55 per kWh = \$35.75).
- The charging costs range between \$7.66 and \$41.25 for a full charge, depending on the power and speed of the charger, vehicle battery size, how much charge is left and electricity tariffs (Jolt, 2021).
- In Tasmania, the weekly on road costs for EVs, such as registration, insurance and the luxury car tax, are roughly the same as ICE vehicles, ranging between \$30-\$70 depending on size, power, fuel efficiency and cost (RACT Vehicle Operating Costs Survey, 2019).

- While there are no registration subsidies in Tasmania, the ACT is offering two years of free registration for zero-emission vehicles, this includes full battery-electric and fuel cell vehicles. NSW offers a \$30 discount on annual vehicle registration for Plug-in Hybrid Electric Vehicles (PHEV). The Northern Territory is offering a five-years free registration for new and used zero-emission and PHEVs starting 2022. And QLD offers discounts on registration fees for electric vehicles too (Carsales, 2022).
- The Australian Government's luxury car tax includes a fee on luxury vehicles at 33% on the amount above the threshold (ATO, 2020).
 - The LCT threshold is discounted for fuel efficient vehicles, including for EVs, at \$75,000 in 2019, compared to \$66,000 for ICE vehicles. In 2009 the LCT threshold for fuel efficient vehicles was at \$75,000, while for ICE vehicles it was lower at \$57,000. AEVA argues the tax free threshold for fuel efficient vehicles is not increasing like the ICE vehicle threshold as they are indexed at different rates (AEVA, 2020).
 - Nearly half of all EVs for sale still remain above the threshold for the LCT. Some experts state that LCT should be abolished for low/zero emission vehicles as it was introduced to protect the Australian passenger vehicle manufacturing industry, which no longer exists. Others state that the threshold for EVs should be indexed and lowered at the same rate as for ICE vehicles (AEVA, 2020).

Infrastructure considerations

- As of April 2022, there were 85 dedicated electric vehicle charging stations in Tasmania, with 18 of those being fast chargers and 67 being slow charger (PlugShare, 2022).
- However, in Australia 70-80% of EV charging will generally be undertaken by motorists at home or at a workplace parking spot, with more than 99% of daily trips under 50km – for a round trip of 100km. This is well within the range of new EVs with larger battery capacities (EVC, 2021).
- The Tasmanian Government advanced with the second stage of the ChargeSmart Program, which saw the installation of an additional 20 publicly accessible EV fast charging stations and another 23 slow charging points at locations including public car parks, councils, businesses, and visitor destination. This brings the ChargeSmart network up to 80 charging stations across Tasmania and the total number of charging points to over 120 (The Department of Premier and Cabinet, 2021).
 - The 2021-22 Tasmanian Budget allocated \$600,000 towards ChargeSmart 2, but reflecting on the high quality of applications, the program earned an additional \$175,000, bringing the total funding for ChargeSmart 2 to \$775,000.
 - The average distance between the ChargeSmart charging stations is 47km.
- Fast or ultra-fast DC chargers cost between \$40,000 and \$100,000, with installation between \$15,000 and \$60,000. Alternatively, slow AC chargers cost around \$6000 to be installed, with hardware usually between \$2000 and \$3000 (EVSE, 2019).

Maintenance

- The Australian automotive Industry is currently short of 31,150 skilled labour positions. This number is estimated to rise to 38,000 by the end of 2023 (TACC, 2022).

- Based on the Tasmanian's government projection that 3.8 million EVs will be on Australian roads by 2030, the automotive industry will require 14,000 qualified ZLEV Technicians. This includes dismantlers, mechanical specialists, electricians, and vehicle collision repairers.

Electric vehicle fleets

- In Australia, fleets make up 52% of new vehicle sales and serve as an important source to the used car market, meaning electric fleets help build the used EV market, (EVC, 2019).
- Business fleets accounted for 63% of total sales in 2018, with private purchases making up 33% and government fleets just 4%. Government electric vehicle fleet targets are expected to result in overall fleet growth in future years (EVC, 2019).
 - EV fleet targets on the mainland include NSW's 100% target by 2030 and with an interim target of 50% by 2026. South Australia's target for its government fleet is to transition to 100% EV fleet by 2030 (EVC, 2022).
 - The ACT government has already achieved its target of 100% new zero emission vehicles in its government fleet (EVC, 2022).
- Ten councils took part in the Tasmanian Government's Smarter Fleets program between 2018 and 2019. They were given advice as to which fleet vehicles were best suited for replacement with an EV. Government will not be following the implementation progress of each council, with the program now concluded (TCCO, 2020).
- The Tasmanian Government's Smart Fleets program ran from July 2018-June 2019, assisting departments to prepare to integrate electric vehicles into their fleets. The aim was to ensure fleets were "electric vehicle ready" as new models were introduced into the Australian market.
 - The program analysed the existing fleet to calculate the environmental benefits and cost reductions of electric vehicles. Departments received electric vehicle integration plans in late 2019, which identified opportunities to transition.
- AEVA modelling suggests the Tasmanian Government fleet turnover is 20% per year. Based on this, AEVA believes EVs could make up 25% of the government's fleet by approximately 2025 and 88% by 2030, if the government purchases 50% of all EVs sold in Tasmania through to 2030.
- Furthermore, AEVA suggests that an ambitious target for local government fleets would be 25% electric by 2025 and 90% by 2030, due to a low turnover of vehicles and a composition of 50-70% utilities.

Other Government Interventions

- During the period of consultation towards forming a National Electric Vehicle Strategy, the Australian Government received more than 1500 individual and 200 organisational feedback submissions (Australian Government, 2023).
 - A total of 11 submissions came from Tasmania.
 - The top concerns in the feedbacks included fuel efficiency standards, the charging infrastructure, emissions reduction, supply and demand, EV accessibility, regulation and government, safety and standards, and alternative transport methods.

Electric public transport

- In April 2021, Metro Tasmania completed its Accelerated Bus Replacement Program by receiving the 100th low emission bus (Metro Tasmania, 2021).
 - An additional 26 buses have been ordered, which could be retrofitted them with battery electric or hydrogen fuel cell drivetrains.
 - Moreover, following an announcement on the 2020-21 Tasmanian Budget, Metro Tasmania is now working on their transition to zero emissions buses and will undergo a trial in the coming two years.
- McDermott's Coaches has four Volvo diesel-electric hybrid buses that transport visitors between the Cradle Mountain visitor centre and Dove Lake.
- SeaLink, which operates the Bruny Island ferry service, is planning to introduce a fully electric ferry in the future, while Gordon River Cruises vessel Spirit of the Wild is a diesel-electric hybrid.

Micro-mobility transport

- Regarding micro-mobility transport devices, it is estimated that between 5000 to 7500 e-bikes were imported to Australia in 2016/17, with around 7,000 in 2017/18, 16,000 in 2018/19, and 18,000 (Indaily, 2021).
- In attempts to raise awareness and educate the community on safe behaviour when riding e-scooters, the City of Hobart is providing a "Learn How to Ride E-scooters" seminars led by professionals (City of Hobart, 2022).
 - On the first month of the e-scooters trial in Tasmania, which started on the 17th of December 2021, a total of 170,000 trips had been logged for both providers across the state. This shows the amount of demand for these mobility devices.
 - However, as of May 2022, 15 users have been banned and 450 riders have been suspended from utilising the e-scooter service in Hobart. 1000 people received warnings for bad behaviour (Triple M, 2022).

Fuel-cell electric vehicles (hydrogen)

- There are only three hydrogen refuelling stations in Australia that are accessible to the public, although prior contact is required (Glpautogas, 2022).
 - These three hydrogen refuelling stations are located in Melbourne VIC, Canberra ACT, and Brisbane QLD.
 - Hyundai HQ in Sydney has a refuelling station too, but not accessible to the public.
- In terms of high profile FCEV models in Australia, the \$84,000 Hyundai Nexo (660km) is currently only available for lease in Australia. (Carsguide, 2022).
 - The \$60,000 Toyota Mirai (500km range) is being tested around Australia, while and there is also a Honda Clarity available overseas.
 - During 2020, the ACT Government introduced 20 Hyundai Nexo vehicles to its fleet.

- FCEVs are expected to be commercially available in Australia by 2025, once comprehensive infrastructure is available (Motor Trades Association, 2019).

Position

RACT urges the Tasmanian Government and all local councils to develop comprehensive EV strategies, including BEVs, PHEVs and FCEVs. These parties must also develop strategies on electric public transport, micro-mobility transport (MMT) devices, heavy vehicles and motorbikes. These policies must address following points relevant to governing areas.

Emissions and fuel standards

RACT

- Supports the AAA's position on the need for cleaner fuel standards, new vehicle Euro 6 noxious emissions standards and new vehicle fuel efficiency standards to be considered as a single, unified package to make sure every benefit and drawback of these associated actions are accurately recorded.
 - RACT also supports AAA's position in wanting to ensure that all Australians can afford to buy and operate a vehicle in our vast country with its distinct driving conditions.

Adoption and cost

RACT

- Urges the Tasmanian Government to lower the motor tax component of vehicle registration and provide a stamp duty rebate for EVs in the short to medium term as an incentive to uptake, while EV purchase prices are still high.
- Urges the Australian Government to phase out and remove the national luxury car tax in order to increase uptake of low and zero emission vehicles, particularly expensive EVs. RACT also urges the Tasmanian Government to support removal of the LCT.
- Urges the Australian Government to discontinue its fuel excise as EVs become more common, phasing in a road user charge from the mid-2020s. This is because early implementation of road user charging may be a disincentive to uptake.
- Urges the Tasmanian Government to implement an interest free loan scheme to assist with the high cost of purchasing EVs and increase uptake.
- Urges TasNetworks and other electricity retailers to subsidise fees for electricity used to charge electric vehicles at private residences and commercial premises through a unique tariff, in order to incentivise use.
- Urges TasNetworks to also:
 - Subsidise upgrades to grid connections, transformers and switchboards as well as metering equipment that allows off-peak charging at discounted rates for home and public charging. This is also aimed at incentivising use.

- Obtain vehicle registration address data and correlate with transformer location to assess areas of high EV concentrations. These areas will affect the grid first and may be required for upgrade.
- Monitor transformers and lines in areas of high EV concentration to determine intervention required.

Infrastructure considerations

RACT

- Urges the Tasmanian Government, local government and businesses to continually expand the state's public charging network, including slow, fast and ultra-fast chargers in regional and urban locations not serviced, and hubs in key locations.
 - These chargers should be located at local or Tasmanian Government owned assets, new buildings, car parks and on-street parking sites.
 - Plug type should be consistent between all states and territories, enabling consistency for EV owners. This should be in line with the FCAI's recommendation for Type 2 plugs for AC charging and either CHAdeMO or CCS for DC charging.
 - Charger location and type must be consistent with RACT's Electric Vehicle Vision: Charging Infrastructure document.
 - RACT will also explore additional charging stations at its Destinations properties.
- Urges TasNetworks to continue to operate its Fast Charger Support Scheme, established for public chargers, and to offer installation subsidies for home chargers.

Electric vehicle fleets

RACT

- Urges Tasmanian Government departments, government controlled entities and key Tasmanian councils to:
 - Increase their electric vehicle fleets through policies and targets. This includes EV inclusion in government purchasing preferences, which will assist in stimulating the used-car market.
 - The Tasmanian Government should offer fleet managers financial incentives and subsidies through a recommended Smarter Fleets program. This should include local government fleets, as well as business and heavy vehicle fleets.
- Urges large Tasmanian corporations to increase their electric vehicle fleets through policies and targets. RACT will explore an increase in its electric vehicle fleet.
- Urges the Tasmanian Government to support the importation of used EVs from overseas to stimulate EV uptake. This is providing they meet all Australian Design Rules standards, are roadworthy and able to be registered.

Other government interventions

RACT

- Urges the Tasmanian Government, local government and businesses to grant EVs preferential parking access next to charging stations with standardised EV charging signs to increase awareness and visibility. This would be in the short term.
 - This can be facilitated through specific number plates or exemption stickers applicable to EVs, which has been mandated but is not yet active in Tasmania. Such a model can be implemented around on-street parking sites, carparks, shopping centres or retail districts, places of employment and government buildings and rest stops
 - When planning any future development, including for shopping, retail, hospitality, employment, education or accommodation, EV charging capacity requirements or charging stations, as well as preferential parking near chargers, must be considered.
- Urges the Tasmanian Government and, where applicable, local government, to grant EVs access to future T2 and T3 lanes developed across the state in the short term. As EVs become more common, this should be repealed.

Electric public transport

RACT

- Urges the Tasmanian Government, alongside Metro Tasmania, to establish an electric bus fleet. Metro's latest buses can be converted from diesel to electric.
 - The Tasmanian Government must also seriously consider other electric public transport options, such as hybrid or hydrogen buses, electric, hybrid or hydrogen ferries for the River Derwent, electric trams/trackless trams, light rail and trains as well as electric autonomous buses.

Micro-mobility transport

RACT

- Urges the Tasmanian Government, local government, businesses and educational institutions to increase the safe and legal uptake of legal micro-mobility transport devices, including e-bikes, e-scooters and e-skateboards. This includes the safe interaction of MMT devices with vehicles, including through separated cycleways, and ensuring operators comply with legislation.
 - Part of this will be urging the Tasmanian Government to appropriately consider the NTC's proposed regulatory framework to ensure personal mobility devices to be safely used in Tasmania.
- Urges government to facilitate trials, and more permanent use if trials are successful.

Fuel-cell electric vehicles (hydrogen)

RACT

- Urges the Tasmanian Government to invest in hydrogen powered mobility to leverage the opportunities Tasmania has through the renewable energy profile.
- Urges the Tasmanian Government to undertake the exploration of opportunities to increase FCEV transport technologies in the form of heavy vehicles, Metro buses, fleet vehicles, and ferries/barges. These “return to base” applications will allow for the best use of hydrogen refuelling infrastructure.
 - The government should undertake passenger FCEV trials within its fleet to generate awareness and uptake as the technology becomes available.
 - As passenger FCEV technology becomes available, the government should explore strategies to introduce this technology in Tasmania, including trials.
 - The government should also establish hydrogen storage and refuelling stations across Tasmania to facilitate introduction and uptake of FCEVs.
- Urges the Tasmanian Government, local government and key stakeholders to continue to, or commence, a public outreach and education campaign surrounding EVs.
- Will educate Tasmanians on the use of low and zero emission mobility options. This includes how they operate, their environmental benefits, costs and models.
- Will explore a high profile EV or FCEV trial in Tasmania.

Scope

Policy Application and Ownership

This policy applies to:

- Tasmanian Automotive Chamber of Commerce
- Tasmanian road users
- The Australian Electric Vehicle Association
- The Tasmanian Climate Change Office
- The Tasmanian Electric Vehicle Working Group
- TasNetworks
- Hydro Tasmania
- Local government
- Metro Tasmania
- Bicycle Network Tasmania
- The University of Tasmania
- The Department of State Growth
- Australian Government ministers
- Tasmanian Government ministers
- The Australian Automobile Association
- State and territory auto clubs

The ownership and responsibility of this policy is with the RACT Board.