

UTE BEAUTY!

**THE CASE FOR LOWER AND ZERO
EMISSIONS UTES IN AUSTRALIA**

THANK YOU FOR SUPPORTING THE CLIMATE COUNCIL.

The Climate Council is an independent, crowd-funded organisation providing quality information on climate change to the Australian public. If you'd like to support more reports like this, head to www.climatecouncil.org.au/donate.

Published by the Climate Council of Australia Limited.

ISBN: 978-1-922404-72-5 (print)
978-1-922404-71-8 (ebook)

© Climate Council of Australia Ltd 2023.

This work is copyright the Climate Council of Australia Ltd. All material contained in this work is copyright the Climate Council of Australia Ltd except where a third party source is indicated.

Climate Council of Australia Ltd copyright material is licensed under the Creative Commons Attribution 3.0 Australia License. To view a copy of this license visit <http://creativecommons.org.au>.

You are free to copy, communicate and adapt the Climate Council of Australia Ltd copyright material so long as you attribute the Climate Council of Australia Ltd and the authors in the following manner: Ute beauty! The case for lower and zero emissions utes in Australia.

Thank you to Greg Bourne and Dr Jake Whitehead for their inputs and technical guidance. Thank you also to Emily Dickson for her initial research and drafting support for this brief.



—
Cover image: LDV eT60 electric ute, photo courtesy of LDV.

The Climate Council acknowledges the Traditional Owners of the lands on which we live, meet and work. We wish to pay our respects to Elders past and present, and recognise the continuous connection of Aboriginal and Torres Strait Islander peoples to Country.

This report is printed on 100% recycled paper.



Hollie Cheung
Research Assistant



Dr Jennifer Rayner
Head of Advocacy



Dr Simon Bradshaw
Research Director (Projects)



facebook.com/climatecouncil



info@climatecouncil.org.au



twitter.com/climatecouncil



climatecouncil.org.au

CONTENTS

Key findings	ii
Introduction.....	1
Why transport matters.....	3
Electric utes: A market on the move	4
Utes in Australia: The state of play	8
Utes: rising in popularity and emissions	9
Snapshot of ute sales in Australia	10
Smart individual choices collectively add up	14
Strong fuel efficiency standards can fast track more lower and zero emission utes	17
Methodology.....	20
Appendix.....	21
References	22
Image credits	24

KEY FINDINGS

1

To get to net zero, the way we get around in Australia needs to change.

- › Transport is the third largest source of Australia's greenhouse gas emissions. Cars and light commercial vehicles alone make up nearly two-thirds (62 percent) of transport pollution.
- › While many other sectors have begun a necessary decline in emissions, personal transport is one of Australia's fastest growing sources.
- › Decarbonising personal transport involves more than simply swapping petrol vehicles for electric vehicles. We need to shift the focus of transportation away from being dominated by private cars altogether.
- › Increased uptake of active and public transport is the best option for reducing emissions, and it's better for our health, hip pockets and liveable cities too.

2

In Australia, ute sales are growing and the most popular vehicles are also among the worst performing, and most polluting. This isn't sustainable.

- › Emissions from light commercial vehicles, including utes, have jumped by around 20 percent in the past decade.
- › Many utes are expensive to run and pump out high levels of harmful carbon dioxide (CO₂) and other pollutants.
- › In the past decade, new ute sales have risen significantly: from 16 percent of all new car sales in 2012, to 21 percent in the 12 months to October 2022 (over 217,000 utes).
- › The two top selling utes in Australia - the Toyota HiLux and Ford Ranger - are expensive to run and produce a lot of emissions, but there are more efficient alternatives.

3

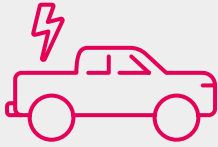
Electric utes are on the horizon and we can hasten their arrival with strong fuel efficiency standards.

- › By 2030, electric utes and vans are projected to make up more than half of light commercial vehicle sales in Australia. Given the closing window to avoid locking in harmful climate change the sooner the transition the better.
- › Countries that have strong fuel efficiency standards already have a growing range of electric utes. If we put them in place here, it'll lead to better choices for us, too.
- › Fuel efficiency standards will result in utes that are both cheaper to run and better performers.
- › Fuel efficiency standards cover 80 percent of the global car market. Because Australia has been so slow to catch up, we have become a dumping ground for polluting fossil fuel-powered cars.
- › Strong fuel efficiency standards can support Australia to attract more lower and zero emissions models, like the Ford Maverick hybrid ute, the electric Ford F-150 Lightning and the Rivian R1T.

4

Lower-emissions options are available now while we wait for electric utes to become more widely available, and more affordable.

- › While we need to phase out fossil fuel-powered cars, this won't happen overnight. In the meantime, drivers can still choose more efficient options that save them lots of money, and cut emissions.
- › If all Australians who bought one of the top selling utes in the 12 months to October 2022 had instead opted for the lowest emitting model, they would have collectively saved a total of \$42 million in fuel costs and avoided over 87,300 tonnes of CO₂ emissions.
- › If in the next five years everyone in the market for a ute bought the most efficient 2022 model, this would cut collective fuel bills by \$210 million over that period and avoid 436,600 tonnes of harmful CO₂ emissions being pumped into our atmosphere.



GLOSSARY

Model:

Refers to and encompasses *all possible* model variations under a particular model, including model year, wheels driven, engine type etc. Example: Mazda BT-50.

Model variant:

Refers to *one specific* model variation, including whether it is a 4x2 or 4x4, and other specifications relevant to that model. Example: Mazda BT-50 4x4 (2022).

The distinction between model and model variant categories is important as both fuel and emissions savings differ depending on the category at hand.

[Year] model:

The year the model was produced. e.g. 2022 model.

4x4 or 4x2:

Refers to the number of wheels that receive power. All wheels of a 4x4 receive power, but only two wheels of a 4x2 receive power. Due to their greater traction, 4x4s are popular off-road vehicles.

Fuel efficiency standards:

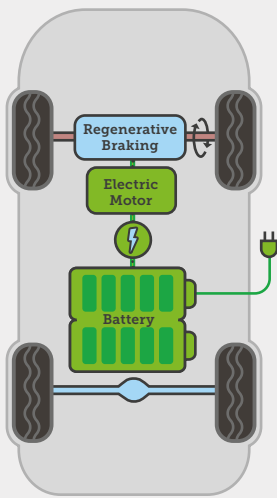
Fuel efficiency standards are applied in different jurisdictions to limit the harmful carbon pollution from new car sales. They do this by setting a maximum average level of carbon emissions across a manufacturer's overall car sales. They provide incentives for car makers to supply efficient lower and zero emission vehicles to a country – and penalise them if they fail to do so. Over time, as the fuel efficiency standard is tightened (meaning the maximum amount of CO₂ that can be emitted per kilometre is reduced), car manufacturers must offer more zero emission vehicles to avoid penalties. For Australian drivers, this would mean a cleaner, more efficient supply of vehicles that are cheaper to run.

Tailpipe carbon dioxide (CO₂) emissions:


The vehicle's carbon dioxide emissions per kilometre as measured in the official laboratory test. Actual emissions depend on how the vehicle is used.¹

TYPES OF ELECTRIC VEHICLES

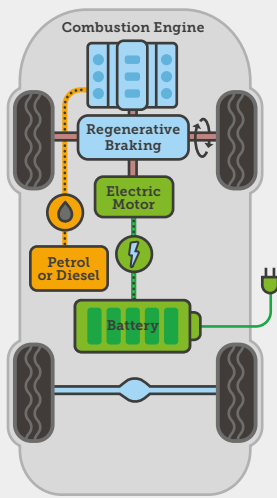
BEV
Battery Electric
Vehicle





Powered by
100% Electricity
from Grid



PHEV
Plug-in Hybrid
Electric Vehicle

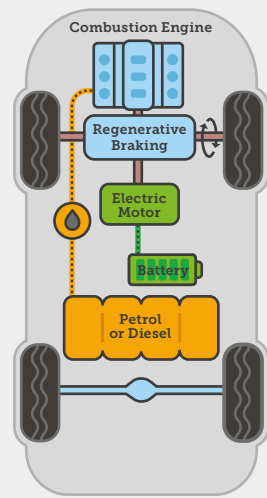


Powered by
Petrol or Diesel and
Electricity from Grid

**OTHER ALTERNATIVE TO INTERNAL
COMBUSTION ENGINE VEHICLES**

HEV
Hybrid Electric
Vehicle



Powered by
Petrol or Diesel




Figure 1: Types of electric vehicles. Battery electric vehicles (BEV) are the only 'true' 100% electric vehicles. Other EV types - including Plug-In Hybrid (PHEV) and Hybrid (HEV) vehicles - still rely in part on dirty petrol and diesel.

INTRODUCTION

Utes have long been part of work life in Australia, used in particular for construction, mining and agriculture. Some drivers also use them for convenience and recreation, with utes now making up one in five new car sales.² As we move towards a zero emission future, we all need to think about how we move around. While there needs to be a focus on encouraging zero emissions ways of getting around like active and public transport, it is likely utes will continue to play some role in Australia's transport mix.

The good news is zero emissions electric utes are on the way. The top selling ute for over four decades in major markets - the Ford F-150 - is now available in an all-electric version in the United States (US) and other markets.^{3,4,5} A growing number of mainstream brands are ramping up production of zero emissions utes. These aren't as widely available as zero emissions light passenger vehicles yet, but the technology is improving fast and more zero emissions utes are expected to become available in the next five years (see Figure 2).

As more electric utes are manufactured overseas, strong fuel efficiency standards can help bring them here so Australian ute drivers have more choice, can make big savings on their fuel bills and cut their emissions. That's why we need to implement strong fuel efficiency standards as soon as possible.

In the meantime, if drivers need a new ute today and are unable to get their hands on a zero emission option just yet, it's also possible to significantly cut fuel bills and emissions by choosing the most efficient ute on the market instead of petrol and diesel-guzzling, highly polluting options.

This brief provides a snapshot of where the electric ute market is going, and highlights that the fuel efficiency and emissions profile of new utes sold in Australia varies hugely. This means that those looking to buy a ute today can already tap into cost and emissions savings by choosing a more efficient ute that is cheaper to run, even before electric utes become readily available.

Strong fuel efficiency standards would encourage more supply of the lowest emitting and cheapest petrol and diesel utes relative to more polluting models, while also helping ensure the supply of zero emission utes ramps up in the next few years.



Images 1 and 2: In Australia, utes play a significant role in construction, mining and agriculture sectors. The vehicles have ranked as our top selling cars for several years. The Toyota Hilux and Ford Ranger for example, are Australia's most popular utes and there are rumours of forthcoming electric versions, although neither brand has made an official announcement.

WHY TRANSPORT MATTERS

Transport accounts for 19 percent of Australia's greenhouse gas emissions, and is the third largest source of emissions behind only electricity and stationary energy.⁶ Road transport is responsible for the bulk of transport emissions, with cars and light commercial vehicles alone making up 62 percent of this pollution.⁷ ⁱ Importantly, at a time when emissions from other sectors have started a welcome and necessary decline, personal transport is one of Australia's fastest growing sources of emissions.⁸

Decarbonising personal transport is a significantly bigger task than getting all drivers to swap their petrol and diesel vehicles for an electric vehicle (EV). We need to shift the focus of transportation away from being dominated by private cars altogether. Boosting zero emissions public transport, and building quality, connected and safe footpaths and bike lanes gives people much better options so they can choose how to get around and do their bit in reducing emissions. Doing so will deliver a wide range of further benefits to people living in cities and regions such as cleaner air, healthier communities, lower travel costs, and much more liveable streets and public spaces.

Think of it like this: many Aussie households have two cars in the garage today. If we get the policies and investment right, in the future, one of those cars could be replaced by an EV and the second one by other forms of transport entirely - like public transport, walking and riding. This would cut household bills and emissions at the same time, while making our cities much more liveable.

This brief explores the options for Australian drivers who need a ute as their main vehicle, but we should all be thinking about opportunities to incorporate other forms of transport into our daily routines. This is the best way to drive down household bills and emissions from transport in a lasting way.



Image 3: We need to reconsider and transform how we move to rapidly reduce our emissions - shifting to public transport and active transport modes (such as walking and bike riding) first where possible, then replacing existing fossil-fuelled vehicles with electric alternatives.

ⁱ In 2019, light duty vehicle emissions accounted for 62% of all transport emissions, or 62 Mt CO₂e. Emissions are projected to return to this level in 2023 as activity returns to pre-pandemic levels ([DISER 2022](#)).

ELECTRIC UTES: A MARKET ON THE MOVE

Following the global uptake of electric light passenger vehicles, electric utes have been making their way onto roads around the world - and Down Under. So far, they've found a market in mining and agriculture, with these sectors taking advantage of the health benefits of zero emission vehicles in underground mines^{9,10} as well as cheaper operating costs. Market observers say that trend is set to accelerate.¹¹

By 2030, electric utes and vans are projected to make up more than half of light commercial vehicle sales in Australia.¹² Companies with high operational emissions are under pressure from boards, shareholders and the community to drive down emissions across their supply chains. These companies are electrifying their vehicle fleets as one important way to do this, and ute manufacturers are responding to this growing demand.

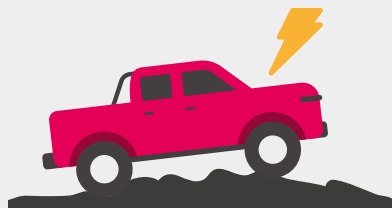


BOX 1: GLOBAL INDUSTRY CLIMATE TARGETS ARE SHAPING AUSTRALIA'S ELECTRIC UTE SUPPLY

Almost all of Australia's top-selling utes are made in Thailand, including the Toyota HiLux, Ford Ranger, Nissan Navara, Holden Colorado, Mazda BT-50, Mitsubishi Triton and Isuzu D-Max.¹³ Thailand, the top vehicle supplier in South East Asia, is aiming for 50 percent of vehicles the country manufactures to be electric by 2030, reaching 100 percent by 2035. The Thai Government is investing heavily in incentives for EV producers to help realise this ambition.¹⁴ This is just one example of how trends and targets abroad will rapidly shift the types of vehicles available in Australia.

Currently, there are over 20 electric utes either in production or planned for release worldwide, from major brands including Ford, RAM, Volvo, Chevrolet, GMC, VW and Kia (see Figure 2).

Figure 2: Electric utes available now and in the future.



ELECTRIC UTES AVAILABLE NOW & IN THE FUTURE

BRAND & MODEL	Launch Date			
	Now	Remainder of 2023	2024	2025 & Beyond
Ford - F-150 Lightning	US ¹⁴			
GMC - Hummer EV	US ¹⁵			
Lordstown - Endurance	US ¹⁶			
Rivian - R1T	US, Canada ¹⁷			
Radar Auto - Radar RD6	China ¹⁸			
LDV - eT60	¹⁹			
Safescape - Bortana EV [for mining operations]	²⁰			
ACE - Transformer V1 TC Series (Designed for Woolworths) and Yewt	²¹			
Atlis - XT		2023 ²²		
Alpha - Wolf		2023 ²³		
Canoo - Ute		2023 ²⁴		
Tesla - Cybertruck		2023 ²⁵		
Chevrolet - Silverado EV		2023 ²⁶		
BYD - Electric Ute			2024 ²⁷	
JAC Motors - JAC T9			2024 ²⁸	
GMC - Sierra EV			2024 ²⁹	
RAM - 1500 Revolution			2024 ³⁰	
Edison-Future - EF1-T				~2025 ³¹
Fisker - Alaska				2025 ³²
Kia - Two electric utes				2026 ³³
Volkswagen - Scout				2026 ³⁴
SSangYong - EV Ute				2026 ³⁵
Bollinger Motors - B2 Pickup				Not specified ³⁶
GWM - Poer				Not specified ³⁷
Hercules - Alpha				Not specified ³⁸
Neuron - EV T.One				Not specified ³⁹

Launch dates are only displayed for Australia where announcements have been made, dates are correct at time of writing.

At home, two Australian companies - ZERO Automotive⁴¹ and Voltra⁴² - are currently converting Toyota LandCruiser utes with internal combustion engines to battery electric vehicles for the agricultural and mining industries. SEA Electric has also committed to converting 8,500 Toyota HiLux and Landcruiser utes to battery electric vehicles over the next five years for the mining industry.⁴³ Another Australian company, ROEV, is set to launch its electric ute fleet conversions this year, using the Toyota HiLux and Ford Ranger chassis.⁴⁴ Walkinshaw Performance in Melbourne has been converting electric RAM utes produced for the overseas market to Australian right-hand drive settings.⁴⁵

In late 2022, Australia welcomed its first brand new electric uteⁱⁱ the Chinese LDV eT60 4x2 for commercial fleets. It's expected the next out of the showroom in Australia will be the ACE V1 Transformer TC series (trolley collector ute) designed for Woolworths,⁴⁶ due in before June 30th, 2023,⁴⁷ and the zippy ACE Yewt designed for last mile delivery due by the end of the year.⁴⁸

These are all exciting developments for Australian ute drivers looking to make the switch to electric in the coming years. Meanwhile, if drivers need to replace their ute before electric vehicles become widely available, they can still make big savings on their fuel bills and emissions now with a number of cheaper and more efficient models already available to buy.



Image 4: Ace Electric Vehicles secured a contract with Woolworths to produce custom designed trolley collectors for trial evaluation, the ACE V1 Transformer TC Series. Pictured, Greg McGarvie, Managing Director of Ace EV and team alongside Chris Bowen, Minister for Climate Change and Energy, and Ed Husic, Minister for Industry, Science and Technology.

ii Not counting conventional utes that have been retrofitted to be electric.

BOX 2: ELECTRIC UTES ON THE HORIZON FOR GLADSTONE REGIONAL COUNCIL

Gladstone Regional Council is joining a growing group of local governments exploring cleaner utility vehicles to reduce their carbon footprint. As Gladstone Mayor, Councillor Matt Burnett, explains:

"We need to be at the forefront of the electrification journey and guide the fleet industry's direction within local government."

In addition to playing a role in shaping the commercial electric utility vehicle sector, there are both financial and emissions savings opportunities when it comes to being an early adopter.

"We don't want to be left with a fleet of internal combustion engine (ICE) vehicles in a market that only wants electric vehicles (EVs) or hybrid vehicles. That is a real risk to the business. Further, it's our responsibility to do what we can to reduce our carbon footprint today. We cannot wait until the transition has already happened and then play catch-up on these fronts."

Depending on the vehicle use, the Council remains open to a range of low and zero emission technologies. One option on the table for the Council is *converting* their existing ICE ute fleet to battery electric in contrast to *replacing* all ICE vehicles with new electric alternatives. This would allow Council to extend the life of vehicles and maintain a consistent fleet for drivers.

For heavier vehicles, Council is considering how hydrogen fits into the mix. When it comes to the modest-sized forklift, Gladstone has already begun the clean switch.

"We recently introduced six new electric forklifts to replace diesel forklifts. These machines work in designated sites already equipped with solar panels, so this has been an easy win for us," Cr Burnett says.

Image 5: Electrification of local council fleets, including utility vehicles, is underway. Pictured is Gladstone Regional Council's new electric forklifts.



UTES IN AUSTRALIA: THE STATE OF PLAY

Utes are a popular choice for Australian drivers. So let's take a look under the hood of the most popular utes in Australia today, and consider how much drivers can save on fuel bills as well as environmental impact - depending on what they buy.

Image 6: Transgrid builds and maintains the transmission network for the National Electricity Market. Each year the company's fleet of 400 diesel commercial vehicles and 28 passenger vehicles collectively travel more than 14 million kilometres. More than half of Transgrid's passenger fleet is already fully electric or hybrid and in February 2023 the company received its first LDV eT60 electric ute to start in-depth field testing.⁴⁹



UTES: RISING IN POPULARITY AND EMISSIONS

Data from the Australian Government shows emissions from light commercial vehicles - like utes and vans - have jumped approximately 20 percent in recent years, from 14 megatonnes of carbon dioxide equivalent (Mt CO₂e)⁵⁰ in 2012 to 17 Mt CO₂e in 2020.⁵¹ Unless there are changes in the type of vehicles Australians choose to buy, these emissions are expected to stay at the unnecessarily high level of 18 Mt CO₂e a year from 2023 out to the mid-2030s.⁵²

One reason for these increased emissions is that ute sales have risen significantly over the past decade, from 16 percent of new car sales in 2012, to 21 percent in the 12 months to October 2022.^{53 54}

It's important to remember that new vehicles sold each year make up only a small share of the total existing vehicle fleet and its emissions. However, with new cars generally remaining on the road for at least a decade, every new vehicle added to our national fleet can lock in harmful emissions and costs for drivers for many years to come. That's why it's so important to start driving the shift to cleaner, cheaper utes as soon as possible.

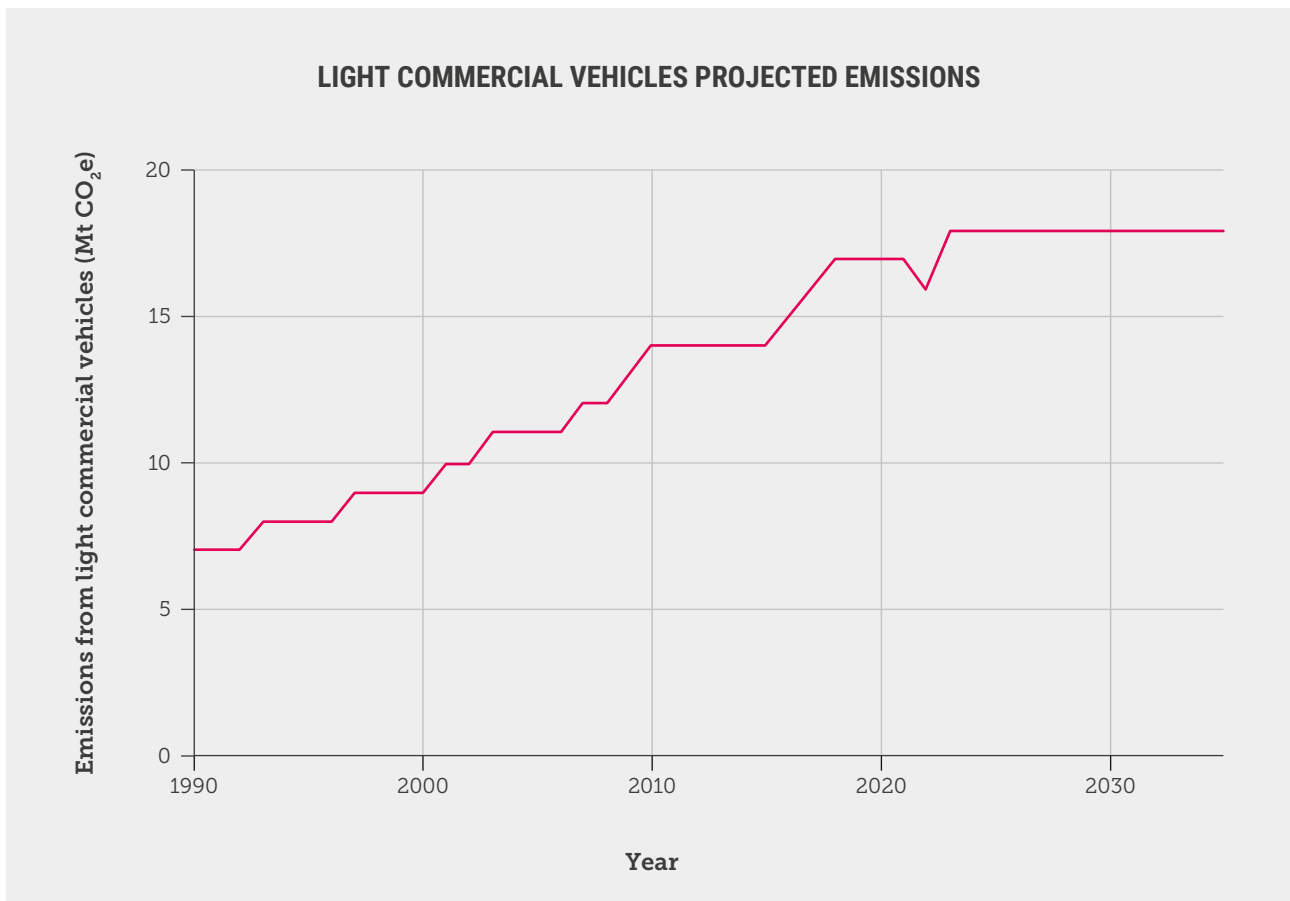


Figure 3: Light commercial vehicles projected emissions.

Source: [DCCEEW \(2022\)](#). Note: EV uptake is projected to increase to 2035, although EV sales for passenger cars are projected to increase faster than uptake in the light commercial vehicle segment. These projections do not account for future policy reforms which may change the trajectory of vehicle sales.

SNAPSHOT OF UTE SALES IN AUSTRALIA

In the 12 months to October 2022, more than 217,000 utes⁵⁵ were sold in Australia. Table 1 below lists the top 10 best-selling utes, and explores both their fuel costs and tailpipe CO₂ emissions.ⁱⁱⁱ

The Toyota HiLux (62,729 sales) and Ford Ranger (46,336 sales) were the top selling utes. This continues a seven-year trend of these two vehicles not only being the top selling utes in Australia, but the top selling among all cars.⁵⁶ Taken together, all of the Toyota HiLux utes sold in the 12 months to October 2022 account for over 170,000 tonnes

of CO₂ and almost \$103.7 million in fuel costs for one year. Ford Rangers follow, accounting for over 125,000 tonnes of CO₂ and over \$76 million in fuel costs (see Table 1).

While there are even more efficient and cheaper-to-run vehicles on the market, the Nissan Navara is the most efficient of Australia's top selling utes, with an average fuel bill and tailpipe CO₂ emissions approximately 35 percent lower than the highest polluting and most expensive-to-run ute on the list, the Toyota Landcruiser.^{iv}

Image 7: The LDV eT60 is Australia's first electric ute. In late 2022, the vehicle was already sold out until April 2023, with the company rationing supplies due to the high demand.



iii An additional 9,495 utes were sold during this period that are not captured in the top ten selling utes. Including the: Volkswagen Amarok (4,165), Chevrolet Silverado (2,175), Ssangyong Musso/Musso XLV (1,606), Jeep Gladiator (1,466) and GWM Steed (83) (VFACTS 2022).

iv Note: These figures refer to ute models.

Table 1: Emissions and fuel costs for the top ten selling ute models.

Model name	Total sales - 12-month period ⁵⁷	Emissions		Fuel costs		
		Average tailpipe CO ₂ emissions (g/km)	Estimated annual tailpipe CO ₂ emissions (tonnes) ^v	Average annual fuel cost	Average fuel cost per 100km	Aggregate annual fuel costs ^{vi}
Toyota HiLux	62,729	194	170,300	\$1650	\$11.81	\$103,674,000
Ford Ranger	46,336	193	125,400	\$1645	\$11.75	\$76,234,000
Mitsubishi Triton	27,373	219	84,100	\$1885	\$13.46	\$51,583,000
Isuzu Ute D-Max	24,612	194	66,800	\$1660	\$11.84	\$40,798,000
Nissan Navara	12,825	183	32,900	\$1560	\$11.13	\$19,976,000
Mazda BT-50	12,723	190	33,900	\$1630	\$11.65	\$20,760,000
Toyota LandCruiser ute	11,761	281	46,300	\$2400	\$17.12	\$28,191,000
GWM Ute	7,430	249	25,900	\$2140	\$15.30	\$15,915,000
RAM (1500, 2500, 3500)	5,653	279	22,100	-	-	-
LDV T60/T60 MAX	5,645	223	17,600	\$1900	\$13.60	\$10,748,000
Total for all top ten ute models	217,087		625,300			\$367,879,000

Data sources: VFACTS (2022) for the period of November 2021 to October 2022, Green Vehicle Guide (2022), FCAI (2022). Tailpipe emissions and annual fuel costs for each model are an average of all model variants sold new in Australia from 2012-2022. Fuel costs for the RAM were not available (see **Method and limitations**). Estimated annual tailpipe CO₂ emissions (tonnes) is rounded to the nearest 100. Average annual fuel cost is rounded to the nearest \$5, and Aggregate annual fuel costs is rounded to the nearest thousand for readability. A more detailed table can be found in the Appendix.

As more electric utes make their way to Australia, drivers will be able to make even bigger savings. For example, Australia’s first electric ute, the LDV e-T60, costs 50 percent less to run than the average top-selling ute models in Australia, at \$6.80 per 100 kilometres compared with an average of \$13.10 across the top-selling models.^{58 59 60}

v Based on average annual tailpipe CO₂ emissions (tonnes) for each model type. Calculation is based on total sales for the past 12 months multiplied by average tailpipe emissions and the average distance travelled.
vi Calculation is based on total sales over 12 months multiplied by average annual fuel cost.

BOX 3: BEST PERFORMING UTES CURRENTLY ON THE AUSTRALIAN MARKET

**Most efficient ute variant available:
Nissan Navara D23 NP300 4x2
Twin Turbo 2.3L 4-cylinder diesel (2015)**

Manufacturers have been making much more efficient utes for a long time. In fact, the most efficient ute available, in terms of CO₂ emissions, is the 2015 Nissan Navara variants at 166g CO₂ / km for the 4x2 and 172g CO₂ / km for the 4x4.⁶¹ Comparing the Nissan Navara 4x4 variant with the dirtiest variant sold in 2022, the 4x4 Jeep Gladiator, the Navara releases 40 percent less emissions than the Gladiator. It is also over 50 percent cheaper to run.^{vii}



**Most efficient ute variant produced
in 2022: Mazda BT-50 Dual Cab 1.9L
4-cylinder Turbo Diesel (4x2) (2022)**

Of the 2022 models, the Mazda BT-50 is the lowest emitting ute, in terms of CO₂ emissions, for both 4x2 and 4x4 model variants. Comparing the Mazda BT-50 4x4 model variant with the dirtiest model variant produced in 2022 (the Mitsubishi Triton 4x4 variant outlined below), the Mazda BT-50 releases 20 percent less CO₂ emissions per kilometre. It is also \$380 a year cheaper to run.

Note: While these diesel engines typically emit less carbon dioxide than their petrol counterparts, it is out of the scope of this brief to include data on other harmful pollutants to health, including noxious emissions.

^{vii} Note: This is variant comparison rather than model type comparison of table 1, which would produce different figures.


BOX 4: MOST POLLUTING UTES ON THE AUSTRALIAN MARKET

The most polluting top-selling model sold in 2022: Toyota LandCruiser ute

The Toyota LandCruiser ute model has huge average emissions of 281g CO₂/km - almost 100g CO₂/km more than the least emitting model in the top 10, the Nissan Navara.^{viii}


The most polluting model variant sold in 2022: Jeep Gladiator Sport S/Overland 3.6 litre 6-cylinder petrol 4x4 4WD (2021)

Although not in the top ten vehicles sold in the past 12 months, this variant of the 2021 Jeep Gladiator is the dirtiest ute on the Australian market. This ute emits a massive 288g CO₂/km and guzzles 12.4L of fuel for every 100 kilometres travelled. It will set drivers back a steep average annual fuel bill of \$3,125.⁶²

^{viii} See data sources below table 1.


The most polluting variant produced in 2022: Mitsubishi Triton 2.4L 4-cylinder Turbo Diesel 4x4 (2022)

Emitting 225g CO₂/km, the Mitsubishi Triton (2022) in all its 4x4 variants emits 45g CO₂/km more than the most efficient 2022 ute for this model year, the Mazda BT-50 (4x4) at 180g CO₂/km. It comes with an annual fuel bill of \$1,926.

SMART INDIVIDUAL CHOICES COLLECTIVELY ADD UP

It's clear that electric utes are on their way over the next few years, offering fuel savings and emissions reductions, all the way down to zero. There are also a number of Australian companies currently converting petrol and diesel utes to electric ones for commercial fleets. But this data shows Australians who need to buy a new ute now do have a choice of more efficient models and can make big savings on their fuel costs and emissions.

If everyone who purchased one of the top selling utes in the past 12 months had purchased a Mazda BT-50, the most efficient of the top selling utes produced in 2022, this would have delivered:

- › More than \$42 million dollars in fuel cost savings and more than 87,300 tonnes of avoided CO₂ emissions for the 4x2 - equivalent to the annual emissions of 4,620 Australians^{ix}
- › More than \$32 million in fuel cost savings and more than 78,200 tonnes of avoided CO₂ emissions for the 4x4 - equivalent to the annual emissions of 4,138 Australians (Table 2).

Image 8: ROEV is one of a handful of Australian companies converting fossil-fuelled utes into electric utes. The process costs approximately \$50,000, it involves fully removing the diesel engine, exhaust and gearbox [from a car] and replacing it with an electric drive unit including battery packs.⁶³



^{ix} Climate Council calculations based on per capita emissions of 18.9 tonnes CO₂e per person, Department of Climate Change, Energy and the Environment (DCCEEW). (2023). Quarterly Update of Australia's National Greenhouse Gas Inventory: September 2022. <https://www.dcceew.gov.au/sites/default/files/documents/nggi-quarterly-update-sept-2022.pdf>

Table 2: Emissions and fuel cost savings if everyone who bought one of the top ten selling utes (totalling 217,087 vehicles) in the 12 months to October 2022 had purchased the lowest emitting ute.

	Aggregate for all utes sold	
	Annual fuel costs for all utes (millions) ^x	Annual CO ₂ emissions (tonnes) for all utes ^{xi}
Actual cost and emissions, from top ten highest selling ute models in the 12 months to October 2022	\$367.9	625,264
If everyone had opted for the most efficient 4x2 2022 model (Mazda BT-50 Dual Cab)	\$325.8	537,942
Difference between actual sales and if everyone had opted for the most efficient 4x2	\$42.0	87,322
If everyone had opted for the most efficient 4x4 2022 model (Mazda BT-50 Dual Cab)	\$335.6	547,059
Difference between actual sales and if everyone had opted for the most efficient 4x4	\$32.3	78,204

Over longer periods of time, these benefits to both household budgets and our environment become even greater.

If projected purchasers of the top selling utes over the next five years all opted for the cleanest ute available today, this would deliver over \$210 million in fuel cost savings, while avoiding more than 436,600 tonnes of harmful CO₂ emissions (see Figures 4 and 5). This is equivalent to the annual emissions of 23,100 Australians.^{xii}

Strong fuel efficiency standards can help Australian ute drivers unlock more options and greater savings by encouraging manufacturers to produce and sell better performing vehicles nationally.

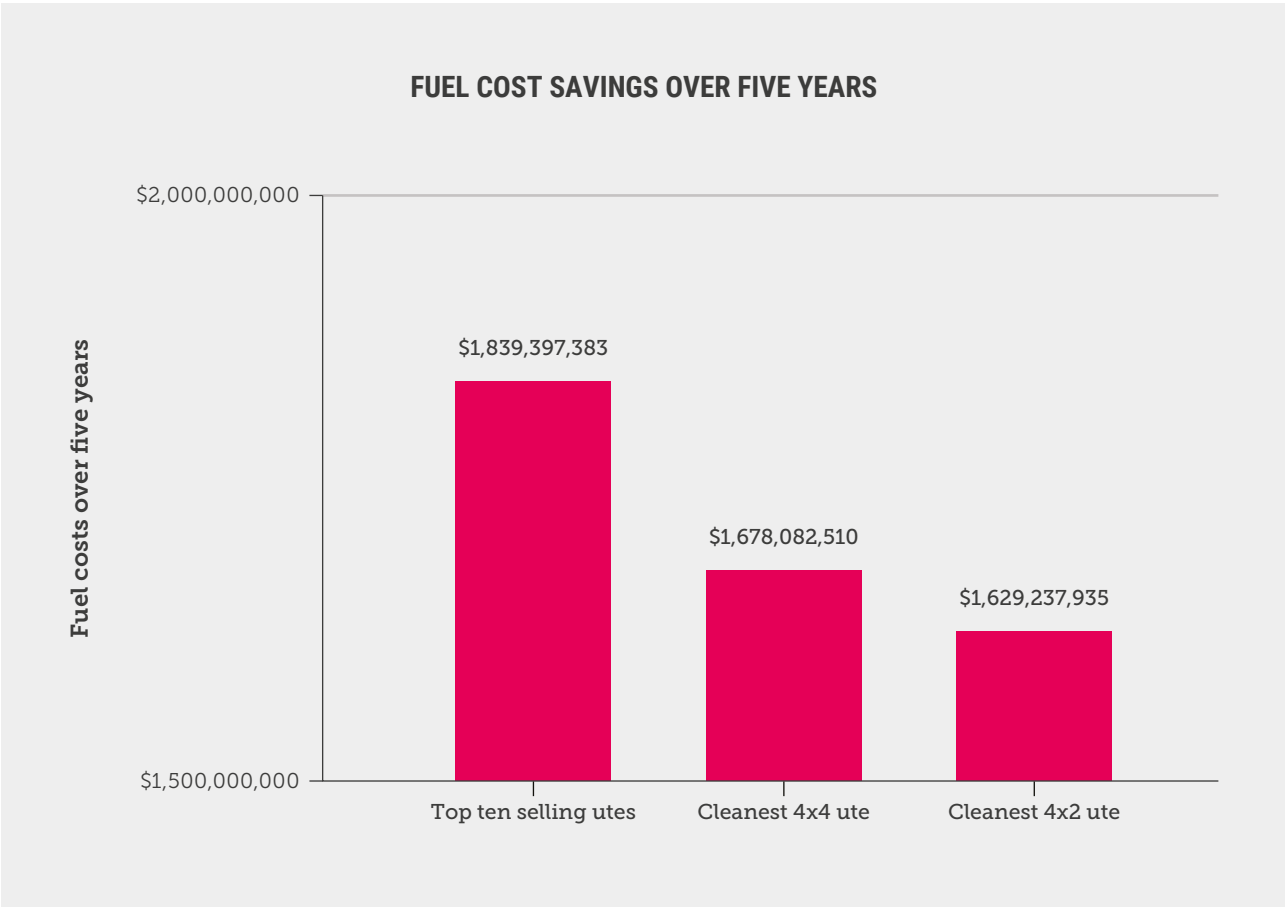
Over the coming years, switching to an electric ute will be an even better way for drivers to cut their fuel bills and emissions footprint. But in the meantime, choosing the best option available today can make a difference.

Through strong national policy settings manufacturers will be incentivised to keep cutting the amount of fuel their new utes guzzle, and the amount of harmful emissions they pump out.

x Based on average annual fuel costs of top ten selling models (and all model variants).

xi Based on average annual g CO₂ /km of top ten selling models (and all model variants).

xii Climate Council calculations based on DCCEEW (2023).



Figures 4 and 5: Cost and emissions savings over five years.

STRONG FUEL EFFICIENCY STANDARDS CAN FAST TRACK MORE LOWER AND ZERO EMISSION UTES

Fuel efficiency standards cover 80 percent of the global car market⁶⁴ and are a key way to boost the supply of low and zero emission vehicles. The United States, European Union and New Zealand, among many other countries, all have fuel efficiency standards which incentivise manufacturers to supply low and zero emitting vehicles, and penalise them if they do not.

BOX 5: FUEL EFFICIENCY STANDARDS: WHAT'S HAPPENING ABROAD?

The current average CO₂ for Australian heavy SUVs and light commercial vehicles is 212.5g.⁶⁵ Markets with strong fuel efficiency standards are working towards cheaper bills and much lower emissions through better fuel efficiency. For light commercial vehicles, the following caps apply:

- › United States - 116.2g CO₂ /km by 2026⁶⁶
- › New Zealand - 87.2g CO₂ /km by 2027⁶⁷ ^{xiii}
- › European Union - 101.43g CO₂ /km by 2030 (vans only)⁶⁸

^{xiii} Neither the USA nor NZ have released targets beyond 2026 and 2027 respectively. The standard listed for the EU is derived from a percentage (31 percent reduction from 2030 onwards based on 2021 levels of 147g CO₂ /km) and the USA standard was converted from miles to kilometres for ease of comparison.

To secure a strong pipeline of affordable lower and zero emission utes, Australia should keep up with the global pack and introduce strong fuel efficiency standards that:

- › Give Australian drivers more choice and better value vehicles than those available today, by bringing a wider range of vehicle types to our shores;
- › Are at least equivalent to those in other countries, so Australia doesn't keep missing out on new vehicles that are cleaner and better performing;
- › Provide minimal use of crediting and other loopholes which diminish the scheme's transparency and effectiveness - like so-called 'super credits' which allow manufacturers to count zero emission vehicles multiple times when calculating their fleet-wide emissions;
- › Support 100 percent of new vehicles sold in Australia being zero emissions as soon as possible - recognising there may be benefit in putting light commercial vehicles like utes on a different trajectory to passenger vehicles, given differences in what's available in the market right now;
- › Ensure Australia does not fall behind on rapidly changing technology and markets. We must review and update standards at least every five years.

With the transformation of Australia's energy system underway and accelerating, decarbonising transport, including utes, is the next frontier in tackling cost of living and harmful climate change all at once.

Strong fuel efficiency standards are the single best thing we can do now to rev up Australia's market for lower and zero emission vehicles, including delivering cheaper, cleaner utes for drivers who need them.

FURTHER RESOURCES

For more information on the Climate Council's recommendations for strong fuel efficiency standards in Australia, visit: <https://www.climatecouncil.org.au/resources/submission-to-national-electric-vehicle-strategy-consultation/>



Images 9 and 10: The Electric Ute Roadshow is a community campaign by Solar Citizens to unlock the benefits of affordable electric vehicles for the regions. Pictured below is Catherine King, Minister for Infrastructure, Transport and Regional Development, addressing the crowd in Ballarat.



METHODOLOGY

Data sources and search parameters:

Two main data sources were used in preparing this report: the Federal Chamber of Automotive Industries (FCAI)'s [VFACTS](#) database, and the Australian Government's [Green Vehicle Guide \(GVG\)](#).

Sales data was sourced from VFACTS, taking into account sales over a 12 month period between November 2021 and October 2022. Information on the different vehicles - including tailpipe emissions in grams of CO₂ per kilometre and annual fuel costs - were sourced from the GVG.

Some cross-referencing and further searching was required to generate the top ten list and acquire all the desired information. The following search criteria were used to obtain information from the GVG: variant period from year "2012" to year "2022", vehicle class "ute or light truck". However, the Toyota LandCruiser ute, RAM, GWM ute, Chevrolet Silverado and Ssangyong Actyon Sports, while appearing in sales data from VFACTS, did not appear in our initial GVG search. Further manual searching of the GVG enabled us to obtain the necessary information on these models, with the exception of the RAM, which was not covered by the GVG. Emissions data for the RAM were sourced from FCAI, though we were not able to obtain data on fuel costs (see Appendix). The Chevrolet Silverado and SsangYong did not feature in the final top ten list.

Further calculations:

Tailpipe emissions and annual fuel costs listed in the appendix are an average of all the 4x2 and 4x4 model variants for each ute model between 2012-2022, identified through the above searches. The full range (lowest and highest tailpipe emissions and fuel costs) can be found in the Appendix. The aggregate tailpipe emissions for each model type in the past 12 months (i.e. the total emissions attributable to all the vehicles of that model sold in the 12 months to October 2022) is calculated by multiplying the average g CO₂ /km by the number of models sold and by 14,000, which is the number the GVG used for the average number of kilometres driven when calculating annual fuel costs). This means our figures for fuel costs and emissions are consistent. However, with the Australian Bureau of Statistics putting the average distance travelled by light commercial vehicles at 15,300 kilometres each year, our figures for fuel costs and emissions are likely to be conservative.⁶⁹ For Figures 4 and 5, which outline fuel cost and emissions reduction savings over the next five years, the data from the past 12 months was multiplied by five. Again, this is likely conservative given the year on year increase in sales of utes, population growth and other factors which were not taken into account.

Although steps have been taken to include missing data, the data and calculations in this brief are limited to information available within the VFACTS sales data (November 2021-October 22) and the GVG. Additional limitations of specific tables and figures have been noted below relevant tables.

APPENDIX:

DATA, INCLUDING NOTES ON LIMITATIONS

Sales rank	MODEL TOTAL SALES	MODEL NAME	Data source	Lowest tailpipe CO ₂ (g/km)	Highest tailpipe CO ₂ (g/km)	Average Tailpipe CO ₂ (g/km) for model type	Emissions ranking	Aggregate tailpipe CO ₂ emissions for each model past 12 months (tonnes)	Lowest annual cost	Highest annual cost	Average annual fuel cost	Fuel cost for 100km	Average annual fuel cost all vehicles for model
Description / further explanation	Sales combine 4x2 and 4x4 ute models as is industry practice.		Includes all model variants (4x2, 4x4 etc) for each model from the past ten years 2012-2022.	Vehicle's carbon dioxide emissions in grams per kilometre for a single ute, lowest of all model variants.	Vehicle's carbon dioxide emissions in grams per kilometre for a single ute, highest of all model variants.	Average of all model variants' carbon dioxide emissions in grams per kilometre for a single ute.	Emissions intensity of each ute type based on average tailpipe CO ₂ emissions, with #1 being the highest emitting.	Total emissions for each model (multiplication of model sales, by average tailpipe g CO ₂ / km, by 14,000 (average distance vehicle travels in a year) divided by 1,000,000 to convert from grams to tonnes).	Estimated fuel cost for a vehicle travelling 14,000km per year. Based on average retail fuel prices for the last quarter reported in the Australian Petroleum Statistic. Cost for a single ute, lowest of all model variants.	Estimated fuel cost for a vehicle travelling 14,000km per year. Based on average retail fuel prices for the last quarter reported in the Australian Petroleum Statistics. Cost for a single ute, highest of all model variants.	Average of all annual fuel costs for all model variants.	Average annual fuel cost divided by 140.	Total sales for each model multiplied by average annual fuel cost for each model.
1	62,729	Toyota HiLux	Green Vehicle Guide	182	203	194	6	170,323.17	\$1,546.00	\$1,725.00	\$1,652.72	\$11.81	\$103,673,612.28
2	46,336	Ford Ranger	Green Vehicle Guide	169	201	193	8	125,387.65	\$1,456.00	\$1,702.00	\$1,645.24	\$11.75	\$76,233,694.31
3	27,373	Mitsubishi Triton	Green Vehicle Guide	204	265	219	5	84,112.05	\$1,747.00	\$1,926.00	\$1,884.46	\$13.46	\$51,583,308.77
4	24,612	Isuzu Ute D-Max	Green Vehicle Guide	183	200	194	7	66,807.91	\$1,568.00	\$1,725.00	\$1,657.67	\$11.84	\$40,798,492.01
5	12,825	Nissan Navara	Green Vehicle Guide	166	200	183	10	32,899.08	\$1,411.00	\$1,702.00	\$1,557.62	\$11.13	\$19,976,417.31
6	12,723	Mazda BT-50	Green Vehicle Guide	177	200	190	9	33,872.87	\$1,501.00	\$1,725.00	\$1,631.67	\$11.65	\$20,759,695.00
7	11,761	Toyota LandCruiser ute	Green Vehicle Guide	N/A	N/A	281	1	46,267.77	N/A	N/A	\$2,397.00	\$17.12	\$28,191,117.00
8	7,430	GWM Ute	Green Vehicle Guide	219	263	249	3	25,913.98	\$1,859.00	\$2,262.00	\$2,142.00	\$15.30	\$15,915,060.00
9	5,653	RAM (1500, 2500, 3500)	FCAI	N/A	N/A	279	2	22,055.53	N/A	N/A	N/A	N/A	N/A
10	5,645	LDV T60/T60 MAX	Green Vehicle Guide	N/A	N/A	223	4	17,623.69	N/A	N/A	\$1,904.00	\$13.60	\$10,748,080.00

REFERENCES

- 1 Green Vehicle Guide. (2022). Search Cars. <https://www.greenvehicleguide.gov.au/Vehicle/Search>
- 2 Dowling, N. (2022). One in five new vehicles sold in Australia is now a ute, pushing down passenger cars <https://www.goauto.com.au/news/market-insight/market-insight-2022/market-insight-passenger-cars-on-death-watch/2022-11-14/89759.html>
- 3 Ford. (2023). Models and Specs. <https://www.ford.com/trucks/f150/f150-lightning/models/?gnav=vhpnav-specs>
- 4 Highbury Ford. (2022). Ford F-150 Lightning. <https://highburyford.com/f-150-lightning/>
- 5 CNBC. (2021). Ford pickup remains America's top-selling truck for 45th year, automaker says. <https://www.cnbc.com/2021/12/02/ford-pickup-remains-americas-top-selling-truck-for-45th-year.html>
- 6 Department of Climate Change, Energy and the Environment (DCCEEW). (2022). Quarterly Update of Australia's National Greenhouse Gas Inventory: June 2022. <https://www.dcceew.gov.au/sites/default/files/documents/nggi-quarterly-update-june-2022.pdf>
- 7 Department of Climate Change, Energy and the Environment (DCCEEW). (2022). Australia's emissions projections 2022. <https://www.dcceew.gov.au/sites/default/files/documents/australias-emissions-projections-2022.pdf>
- 8 Department of Climate Change, Energy and the Environment (DCCEEW). (2022). Australia's emissions projections 2022. <https://www.dcceew.gov.au/sites/default/files/documents/australias-emissions-projections-2022.pdf>
- 9 Zero Automotive. (2022). Newcrest Mining Visit. <https://www.zeroautomotive.com.au/news/newcrest-mining-visit/>
- 10 Climate Council. (2023). Australia's Clean Energy Future: Making Things Here in a Next Zero World. https://www.climatecouncil.org.au/wp-content/uploads/2023/03/CC_MVSA0350-CC-Report-Industrial-Decarbonisation_V8-FA-Screen-Single.pdf
- 11 Boston Consulting Group. (2022). The Future of Buses and Light Commercial Vehicles Is Electric <https://www.bcg.com/news/10october2022-electric-utes-to-boom-in-australia>
- 12 Ibid.
- 13 Purtill, J. (2022). Electric utes are finally being shipped to Australia. They're about to boom in popularity, report predicts. <https://www.abc.net.au/news/2022-10-11/electric-utes-are-coming-to-australia-can-they-win-over-tradies/101508750>
- 14 Illuminem. (2022). Thailand: 100 percent electric vehicles by 2035 - with a twist. <https://illuminem.com/illuminemvoices/ee7a2e03-5981-46aa-b292-637cb7a7a6d5>
- 15 Ford. (2023). 2023 Ford F-150® Lightning. <https://www.ford.com/trucks/f150/f150-lightning/>
- 16 GMC. (2023). GMC Hummer EV Pickup and GMC Hummer EV SUV. <https://www.gmc.com/electric/hummer-ev>
- 17 Electrek. (2022). First batch of Lordstown Endurance EV pickups leaving Ohio Foxconn plant for delivery. <https://electrek.co/2022/11/29/first-batch-of-lordstown-endurance-ev-pickups-out-for-delivery/>
- 18 Rivian. (2023). Will you expand to right-hand drive countries? <https://rivian.com/support/article/will-you-expand-to-right-hand-drive-countries>
- 19 Electrek. (2022). Geely's Radar Auto launches RD6 electric pickup in China for under \$25K. <https://electrek.co/2022/11/10/geelys-radar-auto-launches-rd6-electric-pickup-china-under-25k/#:~:text=Other%20RD6%20features%20include%206,yet%2C%20but%20you%20never%20know.>
- 20 LDV. (2023). Australia's first electric dual cab ute. <https://www.ldvautomotive.com.au/vehicles/ldv-et60/>
- 21 Bendigo Times. (2022). Mining industry going electric. <https://timesnewsgroup.com.au/bendigotimes/news/mining-industry-going-electric/>
- 22 ACE EV. (2023). ACE EV ends 'exceptional year' with order from Woolworths for EVs. <https://www.ace-ev.com.au/ace-ev-ends-exceptional-year-with-order-from-woolworths-for-evs/>
- 23 The Driven. (2021). Atlis inks supply deal for XT electric utes due to arrive in Australia in 2023. <https://thedriven.io/2021/10/27/atlis-inks-supply-deal-for-xt-electric-utes-due-to-arrive-in-australia-in-2023/>
- 24 Drive. (2021). Alpha Wolf electric pick-up revealed, deliveries promised by 2023. <https://www.drive.com.au/news/alpha-wolf-electric-pick-up-revealed-deliveries-promised-by-2023/>
- 25 The Driven. (2021). Canoo unveils tradies electric ute to be launched in 2023. <https://thedriven.io/2021/03/12/canoo-unveils-tradies-electric-ute-to-be-launched-in-2023/>
- 26 Drive. (2023). Tesla Cybertruck on track for mid 2023, but mass production ramp-up delayed to 2024. <https://www.drive.com.au/news/tesla-cybertruck-production-ramp-up-2024/>
- 27 Bloomberg. (2022). GM's Reuss says vehicle demand still strong. <https://www.bloomberg.com/news/videos/2022-09-30/gm-s-reuss-says-vehicle-demand-still-strong-video> EVCentral. (2022). 500kW Chevrolet Silverado EV revealed with 650km range, up to 9-tonne towing. <https://evcentral.com.au/500kw-chevrolet-silverado-ev-revealed-with-650km-range-up-to-9-tonne-towing/>
- 28 CarExpert. (2022). BYD electric ute set for 2024 Australian launch. <https://www.carexpert.com.au/car-news/byd-electric-ute-set-for-2024-australian-launch>
- 29 The Driven. (2022). Another Chinese electric ute due to be launched in Australia. <https://thedriven.io/2022/12/07/another-chinese-electric-ute-due-to-be-launched-in-australia/>
- 30 GMC Pressroom. (2022). GMC Continues the Electric Truck Revolution: Introducing the First-Ever 2024 Sierra EV. https://media.gmc.com/media/us/en/gmc/home_detail.html/content/Pages/news/us/en/2022/oct/10/2024-sierra-ev.html

- 31 Drive. (2023). Electric 2024 RAM 1500 Revolution pick-up unveiled. <https://www.drive.com.au/news/electric-2024-ram-1500-revolution-pick-up-unveiled/>
- 32 E-VehicleInfo. (2022). Edison Future EF1-T Electric Solar Pickup Truck Price, Specs, Launch, Highlights. <https://e-vehicleinfo.com/global/edison-future-ef1-t-electric-solar-pickup-truck-price-specs-launch-highlights/#:~:text=Expected%20Price%20%26%20Launch%20Date&text=the%20launch%20date%20is%20not,expect%20its%20launch%20around%202025>
- 33 EVCentral. (2022) Fisker announces three more EVs. <https://evcentral.com.au/fisker-announces-three-more-evs/>
- 34 Drive. (2022). Two Kia utes confirmed for 2026 with electric power, Australian plans unclear. <https://www.drive.com.au/news/kia-ute-confirmed-for-2026-with-electric-power/>
- 35 CarExpert. (2022). Volkswagen brand won't use Scout platform for EV ute - report. <https://www.carexpert.com.au/car-news/volkswagen-brand-wont-use-scout-platform-for-ev-ute-report>
- 36 Drive. (2022). SsangYong planning model expansion, includes electric ute. <https://www.drive.com.au/news/ssangyong-planning-model-expansion-report/>
- 37 Electrek. (2022). Mullen claims majority stake in Bollinger Motors and will revive B1 and B2 EV truck production. <https://electrek.co/2022/09/08/mullen-claims-majority-stake-in-bollinger-motors-will-revive-b1-and-b2-ev-trucks/#:~:text=The%20B1%20was%20soon%20followed,production%20would%20begin%20in%202021>
- 38 CarsGuide. (2022). Will Australia's first electric ute be Chinese? Can GWM's electric Ute beat the LDV eT60 to market, or will the Ford Ranger or Mitsubishi Triton kick off a new wave of electrified utes? <https://www.carsguide.com.au/car-news/will-australias-first-electric-ute-be-chinese-can-gwms-electric-ute-beat-the-ldv-et60-to>
- 39 EVCentral. (2022). EV ute overload: The electric pickups coming soon. <https://evcentral.com.au/ev-ute-overload-the-electric-pickups-coming-soon/>
- 40 GearJunkie. (2019). Neuron EV T.ONE: 'World's First Modular Electric Utility Vehicle'. <https://gearjunkie.com/motors/neuron-ev-t-one-worlds-first-modular-electric-utility-vehicle>
- 41 Zed70. (2022). Zero Zed70. <https://www.zeroautomotive.com.au/zed70/>
- 42 Voltra. (2022). About us. <https://www.voltra.net.au/about-us/>
- 43 The Driven. (2023). Australia's SEA in \$1 billion deal to electrify 8,500 Hilux and LandCruisers for miners <https://thedriven.io/2023/01/18/australias-sea-in-1-billion-deal-to-electrify-8500-hilux-and-landcruisers-for-miners/>
- 44 The Driven. (2023). Electric ute conversions: Rove fills 2023 order book for Hilux and Ranger. <https://thedriven.io/2023/01/17/electric-ute-conversions-roev-fills-2023-order-book-for-hilux-and-ranger/>
- 45 The Driven. (2022). Rivian and Hummer EV utes spotted in Australia. <https://thedriven.io/2022/10/06/rivian-and-hummer-ev-utes-spotted-in-australia/>
- 46 Woolworths Group. (2022). LinkedIn post. https://au.linkedin.com/posts/woolworths-group_ews-fleetmanagement-electricvehicle-activity-7011575733626040320-fTDn
- 47 Information provided verbally to the Climate Council by Managing Director ACE Electric Vehicle Group, Greg McGarvie in January 2023.
- 48 Ibid
- 49 Transgrid. (2023). Transgrid leads the way with first electric ute trial. <https://www.transgrid.com.au/media-publications/news-articles/electric-ute>
- 50 One megatonne is a million tonnes. Carbon dioxide equivalent is a combined measure of greenhouse gases. Gases other than carbon dioxide, such as methane, are converted to the equivalent amount of carbon dioxide in terms of global warming potential.
- 51 Department of Climate Change, Energy, the Environment and Water (DCCEEW). (2022). Australia's emissions projections 2022. <https://www.dcceew.gov.au/sites/default/files/documents/australias-emissions-projections-2022.pdf>
- 52 Department of Climate Change, Energy, the Environment and Water (DCCEEW). (2022). Australia's emissions projections 2022. <https://www.dcceew.gov.au/sites/default/files/documents/australias-emissions-projections-2022.pdf>
- 53 Federal Chamber of Automotive Industries (FCAI). (2022). VFACTS National Data 13 Months from October 2021 to October 2022.
- 54 Federal Chamber of Automotive Industries. (2013). FCAI Annual Report 2012. <https://www.fcai.com.au/annual-reports/index/view/publication/48>
- 55 Federal Chamber of Automotive Industries (FCAI). (2022). VFACTS November 2021 to October 2022.
- 56 Drive. (2022). VFACTS December 2022: Toyota HiLux sales highest since Holden Commodore and Ford Falcon two decades ago. <https://www.drive.com.au/news/ute-sales-australia-2022-toyota-hilux-ford-ranger/>
- 57 Federal Chamber of Automotive Industries (FCAI). (2022). VFACTS November 2021 to October 2022.
- 58 The LDV eT60 consumes approximately 21.3 kWh/km, the price of household electricity is AUD\$0.319 per kWh (as of June 2022), note costs are rounded to the nearest five cents. Sources: Drive (2022), 2023 LDV eT60 review: Electric ute quick drive <https://www.drive.com.au/reviews/2023-ldv-et60-review-electric-ute-quick-drive/>; Global Petrol Prices (2022). Australia electricity prices. https://www.globalpetrolprices.com/Australia/electricity_prices/#:~:text=Australia%2C%20June%202022%3A%20The%20price,of%20power%2C%20distribution%20and%20taxes
- 59 Drive (2022), 2023 LDV eT60 review: Electric ute quick drive <https://www.drive.com.au/reviews/2023-ldv-et60-review-electric-ute-quick-drive>
- 60 Global Petrol Prices (2022). Australia electricity prices. https://www.globalpetrolprices.com/Australia/electricity_prices/#:~:text=Australia%2C%20June%202022%3A%20The%20price,of%20power%2C%20distribution%20and%20taxes
- 61 Australian Government. (2022). Green Vehicle Guide <https://www.greenvehicleguide.gov.au/>
- 62 Australian Government. (2022). Green Vehicle Guide <https://www.greenvehicleguide.gov.au/>
- 63 Smart Company. (2022). This energetic startup will convert your petrol-powered Hilux and Ranger utes to EVs for \$50,000. <https://www.smartcompany.com.au/industries/transport-logistics/startup-roev-convert-petrol-powered-hilux-ranger-electric-utes/>

- 64 The Australia Institute. (2022). Fuelling Efficiency. <https://australiainstitute.org.au/wp-content/uploads/2022/08/P1269-Fuel-Efficiency-Standards-WEB.pdf> p.1
- 65 National Transport Commission. (2022). Light Vehicle Emissions Intensity in Australia. <https://www.ntc.gov.au/light-vehicle-emissions-intensity-australia#:~:text=Average%20emissions%20intensity%20in%202021&text=The%20average%20emissions%20intensity%20of,vehicles%20was%20212.5%20g%2Fkm>
- 66 Centre for Climate and Energy Solutions. (2022). Federal Vehicle Solutions. <https://www.c2es.org/content/regulating-transportation-sector-carbon-emissions/>
- 67 Waka Kotahi, NZ Transport Agency. (2022). Clean Car Standards Overview. <https://www.nzta.govt.nz/vehicles/clean-car-programme/clean-car-standard/overview>
- 68 International Energy Agency (IEA). (2022). Amendment: Regulation 2019/63 CO2 emissions performance standards for new passenger cars and light commercial vehicles <https://www.iea.org/policies/14780-amendment-regulation-201963-co2-emissions-performance-standards-for-new-passenger-cars-and-light-commercial-vehicles?sector%5B0%5D=-Transport§or%5B1%5D=Services>
- 69 Australian Bureau of Statistics. (2020). Survey of Motor Vehicle Use, Australia. <https://www.abs.gov.au/statistics/industry/tourism-and-transport/survey-motor-vehicle-use-australia/latest-release>

IMAGE CREDITS

Image 1 - Page 2: 'Two Australian tradies lifting metal brackets fom ute', photo by Rowena Naylow via austock photo, basic license.

Image 2 - Page 2: 'Australian Kelpies on the back of a farm ute', hoto by Rowena Naylow via austock photo, basic license.

Image 3 - Page 3: Aerial street photo. Photo by chuttersnap via Unsplash.

Image 4 - Page 6: ACE V1 Transformer TC series, photo courtesy of ACE EV Group.

Image 5 - Page 7: Gladstone Regional Council Electric Forklifts, photo courtesy of Gladstone Regional Council.

Image 6 - Page 8: Transgrid LDV eT60, photo courtesy of Transgrid.

Image 7 - Page 10: LDV eT60, photo courtesy of LDV.

Box 3 ute images - Page 12 and 13:

Photos courtesy of Redbook. **POWERED BY Redbook**

Image 8 - Page 14: ROEV conversion, photo courtesy of ROEV.


Image 9 - Page 19: Electric Ute Roadshow in Shepparton, photo courtesy of Solar Citizens.

Image 10 - Page 19: Electric Ute Roadshow in Ballarat, photo courtesy of Solar Citizens.


The Climate Council is an independent, crowd-funded organisation providing quality information on climate change to the Australian public.

The Climate Council acknowledges the Traditional Owners of the lands on which we live, meet and work. We wish to pay our respects to Elders past and present, and recognise the continuous connection of Aboriginal and Torres Strait Islander peoples to Country.

CLIMATE COUNCIL

 facebook.com/climatecouncil

 twitter.com/climatecouncil

 info@climatecouncil.org.au

 climatecouncil.org.au

The Climate Council is a not-for-profit organisation. We rely upon donations from the public. We really appreciate your contributions.

DONATE

climatecouncil.org.au/donate