

# STATE OF ELECTRIC VEHICLES

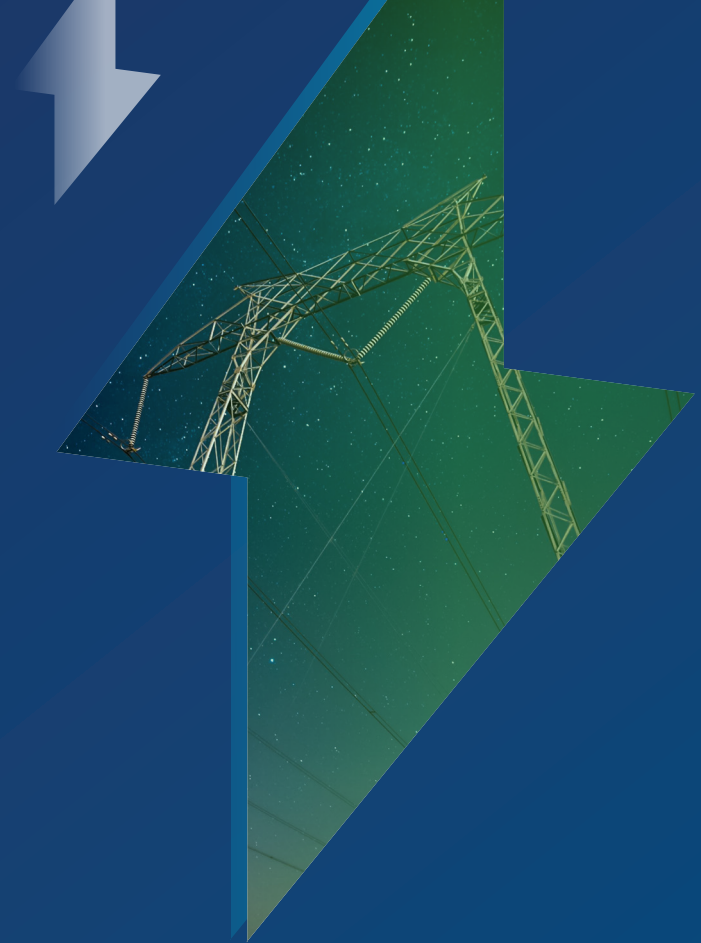
August 2021





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# Introduction

The last twelve months have demonstrated that electric vehicles are here to stay in Australia, and indeed around the world. Electric vehicle sales have grown despite the global pandemic, and with the world now in an economic recovery phase, we expect to see this growth continue.

This period also saw the introduction of Australia's best electric vehicle policy to date, with the NSW state government introducing an Electric Vehicle Strategy, backed by almost \$500m of investment to accelerate the uptake of zero emissions vehicles. The NSW Government incentive program is significant and comparable with leading jurisdictions overseas, and we are optimistic about the effect it will have on electric vehicle availability and sales.

These positive measures and those taken by other state and territory governments provide confidence to private sector investors, allowing for the introduction of greater choice for Australian consumers, more places to charge and better services that support e-mobility.

However, Australia still has serious challenges when it comes to electric vehicle market share, policies, and consumer choice.

At a federal level, we are continuing to see a lack of leadership and action on electric vehicles. After promising a national strategy two years ago, the Federal Government has failed to deliver. We have also seen how state governments can put

in place policies that actively worsen the playing field for electric vehicles.

We need to see more electric vehicle models in Australia, particularly at lower price points. To get more models, we need the right policy settings so we can compete with other countries to attract the globally limited electric vehicle supply to Australia.

Australia is in urgent need of action on electric vehicles, which is vital to meeting our net zero goals, increasing our energy security, and improving our air quality.

We have continued our annual assessment of the electric vehicle market, investment, and government policies, and pleasingly we are seeing progress on each front.

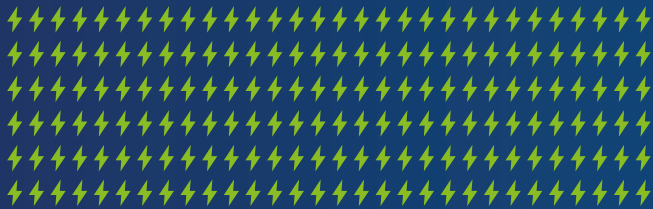
Finally, you may have noted this year's State of Electric Vehicles report is smaller than in previous years. Given the pace of change in the industry, we will now instead be providing six-monthly State of Electric Vehicles reports, as well as smaller topic-based reports throughout the year.

Behyad Jafari, CEO



# 2021 highlights

**8,688** electric vehicles were sold in the first half of 2021



In 2020 **0.78%** of all vehicles sold in Australia were electric



compared with **10.7%** in the UK



and **74%** in Norway



There are **31** electric vehicle models for sale in Australia



**14** electric vehicle models are priced under \$65,000



There will be **58** electric vehicle models in the Australian market by the end of 2022.



Australia has over **3,000** public chargers;



**470** of these are DC fast chargers



## EVC policy scorecard:

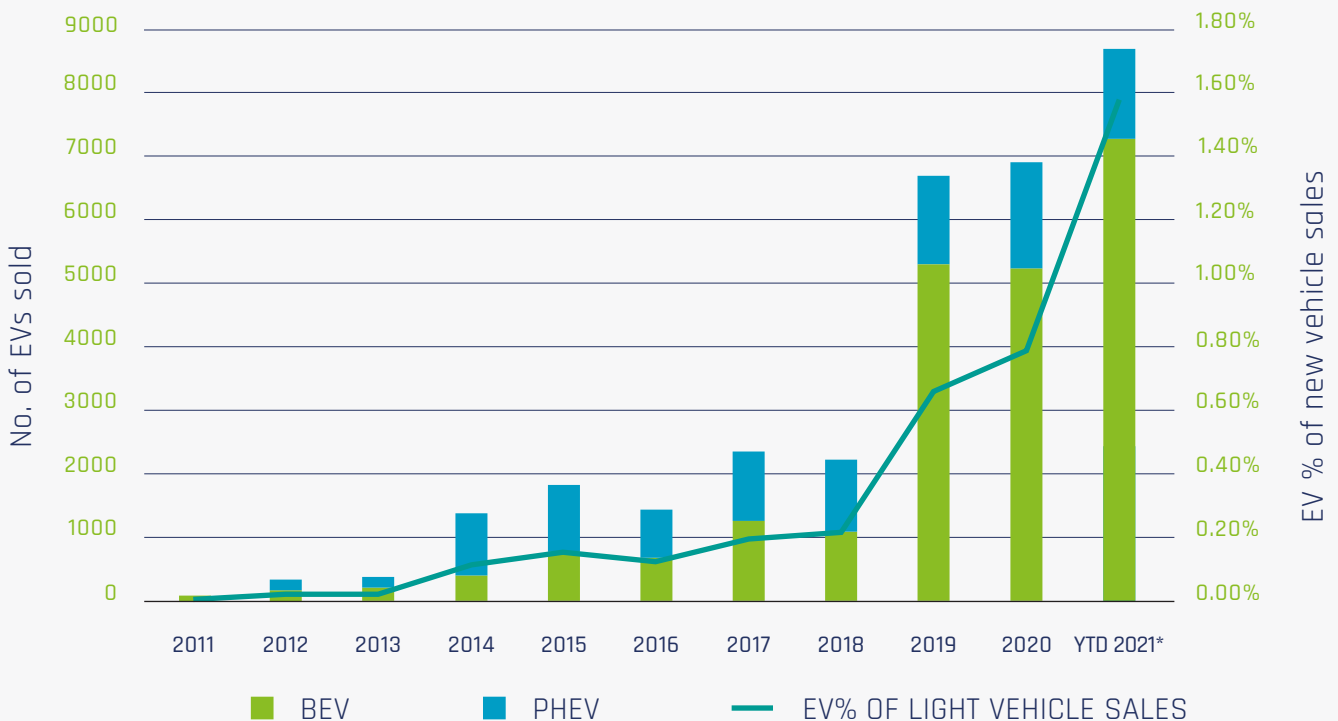
NSW Government	ACT Government	NT Government	TAS Government	QLD Government
9	8	7	7	6
SA Government	Vic Government	WA Government	Federal Government	
6	6	6	3	

# Electric vehicle sales

Australian electric vehicle sales are displaying resilience and growth despite a marked decrease in overall vehicle sales.

In 2020, 6,900 electric vehicles<sup>1</sup> were sold in Australia representing 0.78% of all new light vehicle sales, up from 6,718 electric vehicles sold (0.65%) in 2019. The majority of these sales (76%) were Battery Electric Vehicles (BEVs), with Plug-in Hybrid Electric Vehicles (PHEVs) representing just under one-quarter of sales. Meanwhile, overall light vehicle sales fell to 920,414 vehicles in 2020, down from 1,063,000 vehicles sold in 2019.<sup>2</sup>

### Australian electric vehicle sales



**So far in 2021, 8,688 electric vehicles have been sold in Australia, representing 1.57% of the total light vehicle market. See Appendix 1 for more details.**

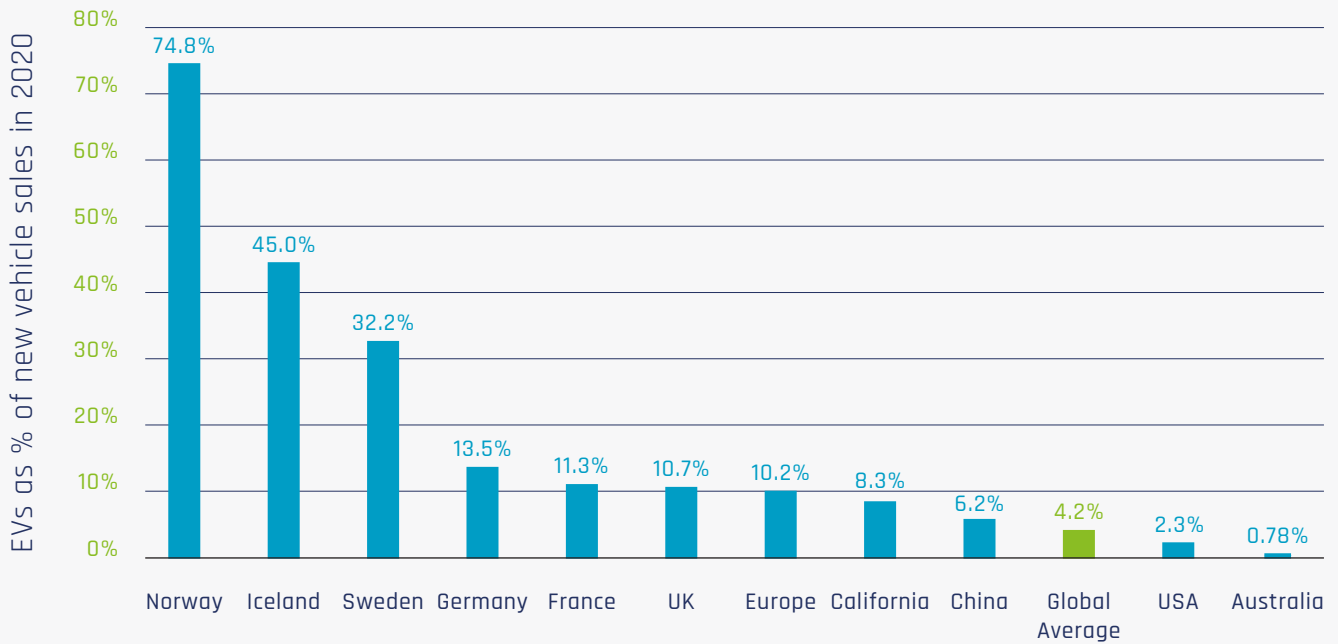
Despite growth of electric vehicle sales, Australia still sits significantly behind the rest of the world when it comes to electric vehicle adoption. In Norway, the world's leading electric vehicle adopter, three-quarters of all light vehicles sold in 2020 were electric. Australia is also well behind the UK (10.7%), China (6.2%) and the United States (2.3%).

Globally, electric vehicles represented 4.2% of light vehicle sales, up from 2.5% in 2019. This demonstrates the strength and direction of the automotive market towards electrification.

<sup>1</sup> Electric vehicles refers to both Battery Electric Vehicles (BEVs) and Plug-in Hybrid Electric Vehicles (PHEVs).

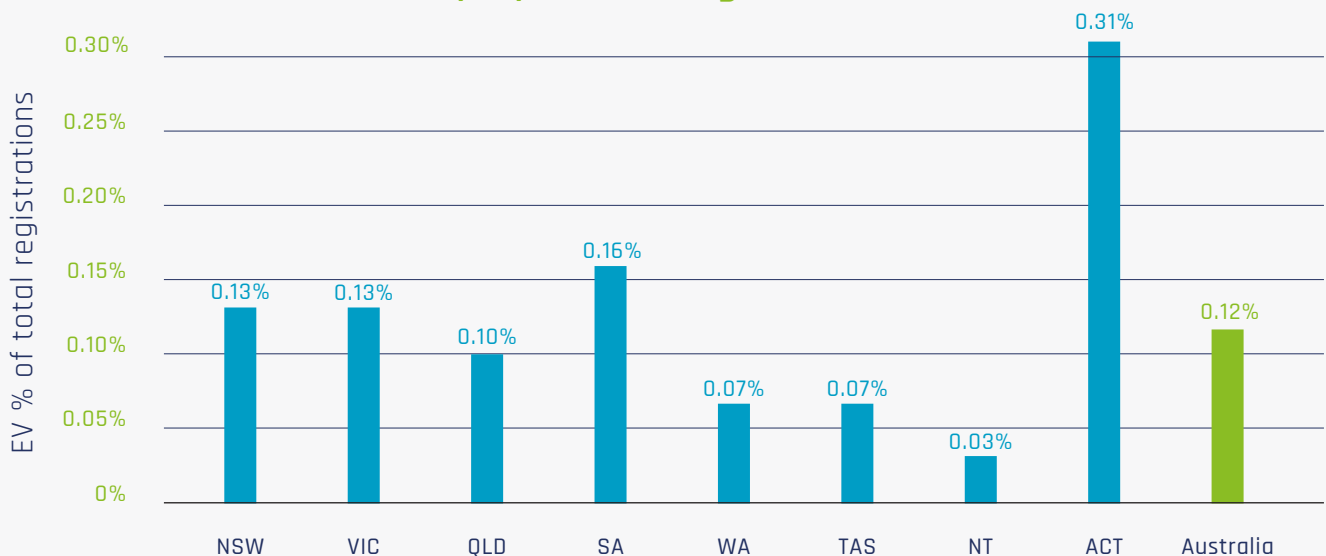
<sup>2</sup> Sales figures are based off FCAI data and the EVC's Tesla estimate. Tesla does not disclose local sales figures.

## Global electric vehicle market share in 2020



Even with recent annual growth in electric vehicle sales in Australia, only 0.12% of Australia's light vehicle fleet is electric. While NSW and Victoria are home to the majority of Australia's electric vehicles, ACT leads the nation on a per vehicle basis with 0.31% electric vehicle fleet penetration followed by South Australia at 0.16%.

## EVs as proportion of light vehicle fleet



Source: NTC

With additional models – some at lower price points – expected in the coming years, electric vehicle sales and market share will continue to increase.

# Electric vehicle model availability

## Carmakers' commitments to electrification

Most carmakers around the world have now made firm public commitments to electrification, including publicly pledging billions of dollars in investment towards electric vehicles over the next few years alone.

Several carmakers have now set timelines to become 100% electric: Jaguar Land Rover (2025), Volvo (2030), Mazda (2030), Ford in Europe (2030), Nissan (early 2030s), GM (2035), Daimler (2039), and Honda (2040).

Other carmakers have committed to electric vehicle model targets. By 2025, Audi will have 30 electric vehicle models available, Hyundai will have 23 models, Groupe Renault will have 24 models, and GM will have 30 models. The Volkswagen Group will have 70 new electric models available by 2028.

For full details, see Appendix 2.

## Passenger electric vehicle model availability

Australians now have access to 31 passenger electric vehicle models from 12 different carmakers, compared to 28 models available in July 2020.<sup>4</sup> Since last year, six more models under \$65,000 have been launched, bringing the total to 14.

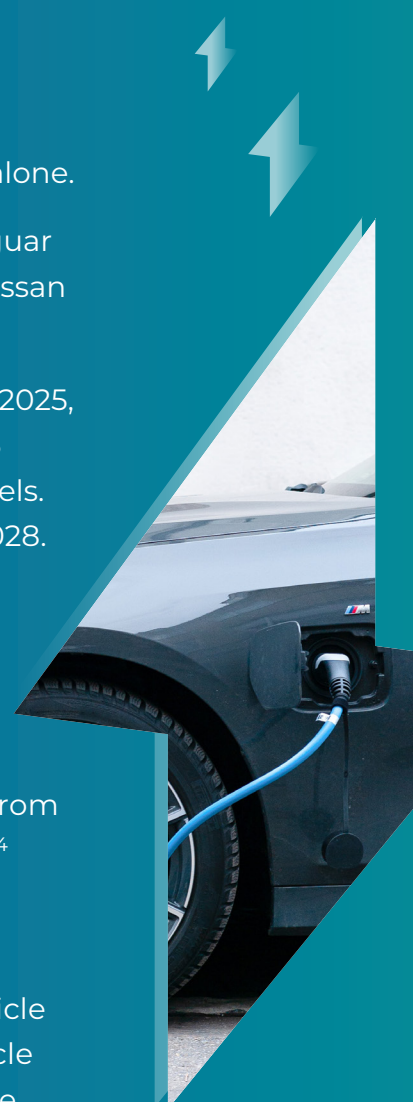
Carmakers continue to supply Australia with more plug-in hybrid vehicle models (17) than battery electric vehicle models (14). The largest vehicle segment is the SUV, which reflects internal combustion engine vehicle purchasing behaviour in Australia.

While the supply of new models to market has not shifted significantly in the last twelve months, carmakers are now confirming the upcoming supply of new electric vehicle models into the Australian market.

It is therefore expected that by the end of 2022, Australians will have access to 27 additional electric vehicle models, with a predicted 20 battery electric vehicles and seven plug-in hybrid vehicles entering the market.

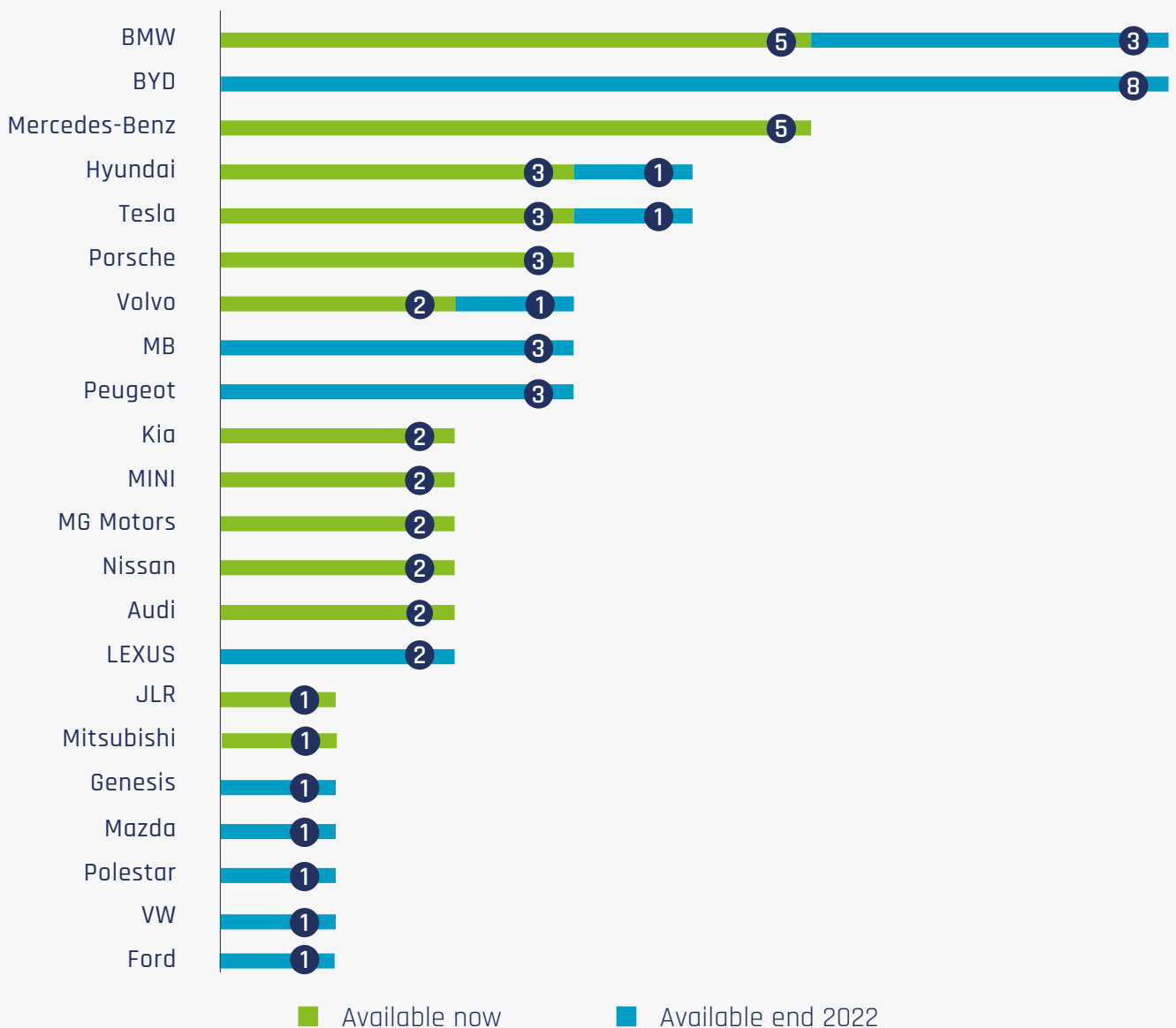
This will see an expected total of 58 passenger electric vehicle models available in Australia.

<sup>4</sup> Despite several new entrants to the market in 2020/21, some electric vehicle models are no longer available in Australia.



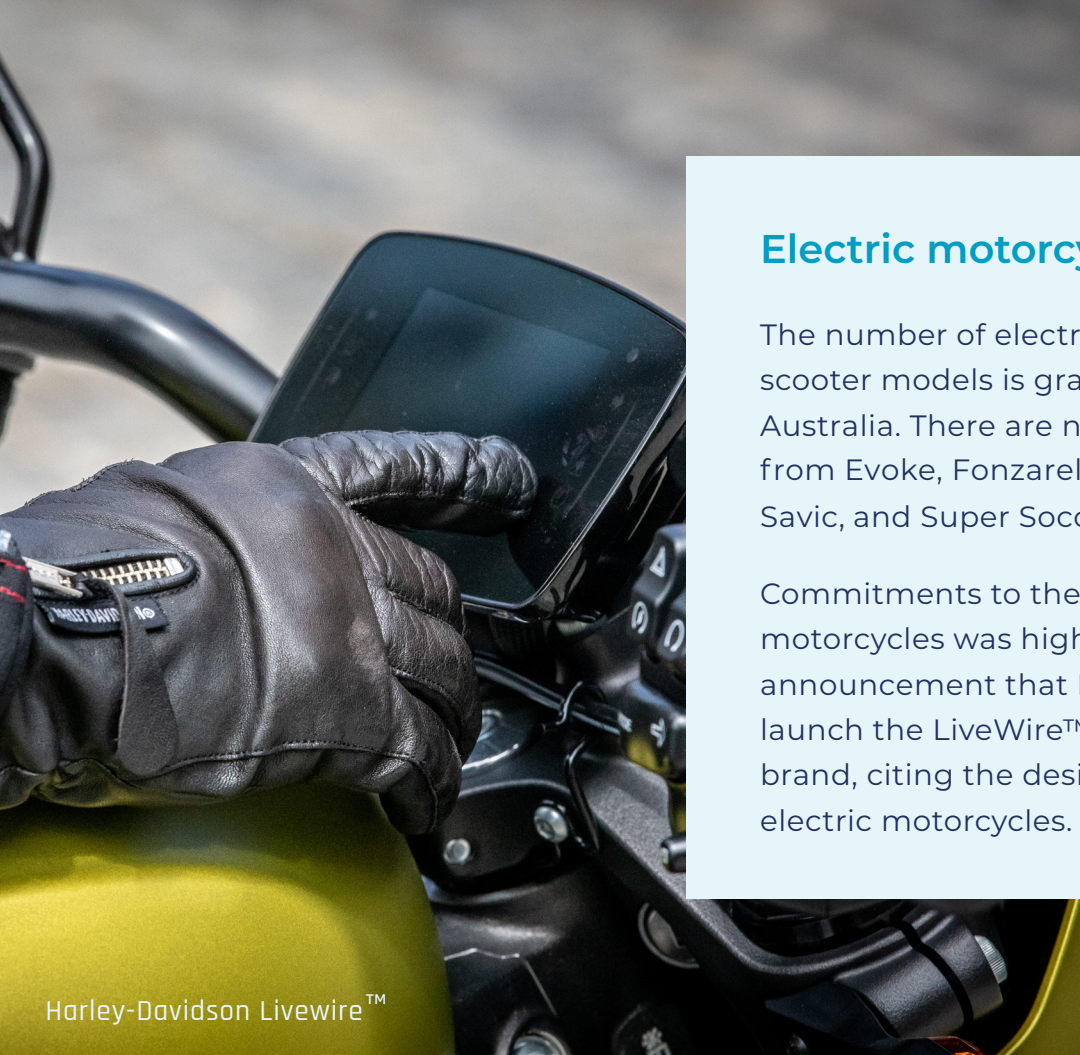


## Australian electric models available



However, even with this increase, model availability in Australia will remain significantly behind other comparable markets. Drivers in the United Kingdom, for example, already have access to over 130 models and from a much larger variety of vehicle segments.

Australia's model availability continues to be restricted by an unsupportive policy environment, as Australian offices of global car makers are struggling to secure supply of new models or volume of electric vehicle models in the local market.



Harley-Davidson LiveWire™

## Electric motorcycles and scooters

The number of electric motorcycle and scooter models is gradually increasing in Australia. There are now models available from Evoke, Fonzarelli, Harley-Davidson, Savic, and Super Soco.

Commitments to the electrification of motorcycles was highlighted by the announcement that Harley-Davidson would launch the LiveWire™ as an all-electric brand, citing the desire to be the leader of electric motorcycles.



Custom Denning Element

## Electric buses

Electric bus model availability has increased over the last 12 months alongside supportive procurement commitments from state governments. There are now six electric buses on the market from BCI Bus, BusTech Group, Custom Denning, Nexport BYD Gemilang, Nexport BYD Volgren, and Yutong.

Increased interest from state governments has had a particularly positive impact on the domestic electric bus industry given that procurement processes tend to preference Australian-made and assembled vehicles.



FUSO eCanter

## Commercial electric vehicles

Increasing demand from the freight and logistics sectors for light and heavy electric vehicle models over the last twelve months has highlighted the need for coordinated national policy to encourage trucks manufacturers to allocate volume to our market. Despite rising demand, supply in the Australian market remains limited.

Currently, Renault supplies the Kangoo, a light commercial van, while SEA Electric supplies a range of products including a van and minibus as well as specialised vehicles and multiple truck-cab chassis. The Volvo Group also has medium duty models available and in service.

In the next two years, we expect to see models from ACE-EV, Fuso, Electric Trucks (Nexport/ TrueGreen Mobility), EV Automotive, JAC Motors, Janus Electric, SAIC Motor and The Volvo Group.



GP Auto Tembo 4x4

## Mining vehicles

The mining sector continues to be supplied through vehicle conversions as the industry seeks to reduce emissions and costs associated with underground ventilation.

Utility vehicles, such as the Toyota Landcruiser and Hilux models, are being converted by several Australian companies including GB Auto, Voltra and Zero Automotive. Additionally, Safescape is converting the Agrale Marrúa into the electric Bortana.

# Public charging infrastructure

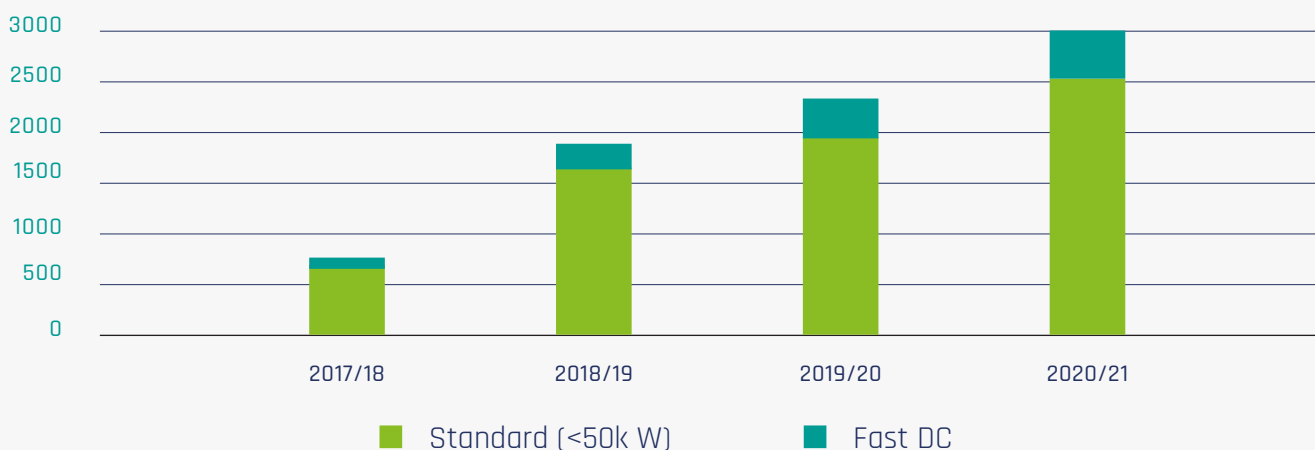
Public charging infrastructure is vital to supporting existing electric vehicles while encouraging future adoption.

There are now over 3,000 public chargers installed across Australia at over 1,650 locations. Of these chargers, 470 are DC fast or ultra-fast chargers (50 kW and over), which have been installed at almost 250 locations.

	ACT		NSW		NT		QLD		SA	
	DC Fast	Standard	DC Fast	Standard	DC Fast	Standard	DC Fast	Standard	DC Fast	Standard
No. of sites	5	28	78	426	2	14	57	234	14	144
No. of chargers	10	48	181	836	2	28	84	402	27	256
	TAS		VIC		WA		National			
	DC Fast	Standard	DC Fast	Standard	DC Fast	Standard	DC Fast	Standard		
No. of sites	16	63	46	316	26	184	244	1409		
No. of chargers	18	82	115	607	33	272	470	2531		

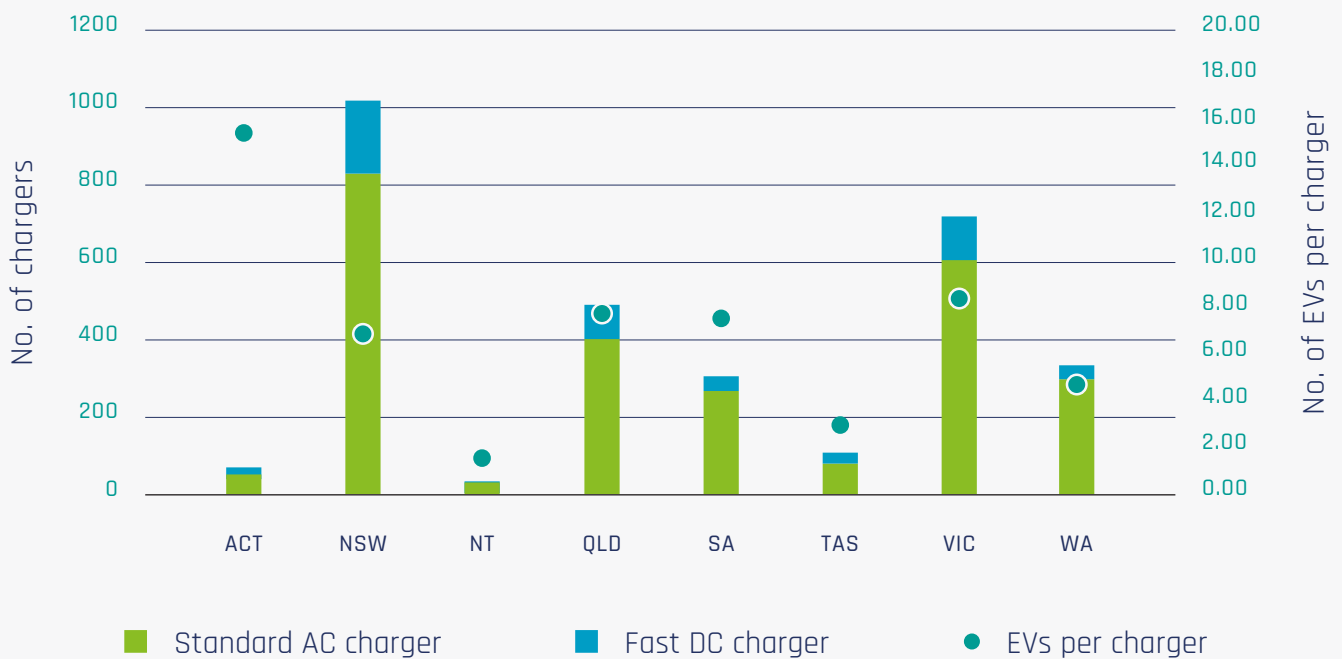
In the last 12 months, there has been a significant increase in the rollout of public chargers. The number of DC fast or ultra-fast chargers installed has increased by 24% while the number of public standard chargers has increased by 23%.

## Chargers in Australia



With additional government and private investment in public charging already committed, it is expected that this growth will continue at least in the short-term. Many state governments as well as the Federal Government have committed significant funds for co-investing with the private sector to build more fast chargers.

## Electric vehicles per public charger



The biggest barrier to sustained investment in public charging infrastructure is the low uptake of electric vehicles in Australia. Without higher utilisation of public charging infrastructure, the business case for continuing investment in public charging infrastructure will diminish.

Currently, across Australia there are 7.21 electric vehicles for every installed public charger. While this national average does not illustrate utilisation rates of public charging infrastructure, it does provide some insight into the commercial realities facing the public charging operators without significant electric vehicle sales growth.

Governments should be cognisant of these challenges when designing government policies and programs. In particular, the way that additional impediments to charging business cases compounds existing challenges.




In addition, given the expected and required growth of electric vehicles in Australia over the next decade, significantly more investment in public charging infrastructure will be needed.

# Electric vehicle policy

Policy action by governments is an important factor in providing confidence to investors, industry, and consumers to support the transition towards e-mobility.

The primary policy drivers that accelerate uptake of electric vehicles include: financial incentives to reduce the price of purchasing an electric vehicle, regulatory changes and investment in charging infrastructure.

The resulting investment confidence ensures the Australian market is globally competitive in planning for deployment of charging infrastructure, electric vehicle model availability, and associated products and services.

Financial incentives 	Regulatory Changes 	Charging infrastructure 
Upfront incentives (rebates, price reductions)	Fuel efficiency standards	Government investment/grants for charging infrastructure
Tax exemptions (stamp duty, registration, GST, Fringe Benefits Tax)	Sales Targets	Infrastructure deployment targets
Targeted incentives (fleet, bus, commercial vehicles, logistics etc.)	Procurement targets (government fleet purchasing)	Electricity/grid upgrades

The delay of a national electric vehicle policy has caused investment and uptake in Australian to lag comparable markets. In recent years, state governments have been stepping in to fill this policy vacuum, sometimes with mixed results.

The global and domestic electric vehicle industry have been increasingly vocal in expressing their frustrations and the need for strong electric vehicle policy to drive investment.



⚡⚡ Australia has some of the most lax environmental standards in the world. We are a Third World dumping ground in terms of automotive technology.”

– *Michael Bartsch, Managing Director, Volkswagen Group Australia*

⚡⚡ Other manufacturers are just holding off because they don't know what the government's doing. It's impacting people's decision to bring vehicles here.”

– *Scott Nargar, Senior Manager Future Mobility and Government Relations, Hyundai*



⚡⚡ Clear and consistent direction from governments is a critical signal to carmakers to prioritise the importation of the latest low and zero-emissions vehicles for Australian consumers.”

– *Stephen Lester, Managing Director, Nissan Australia*

## Electric vehicle policy scorecard

The Electric Vehicle Council analyses the electric vehicle policies developed by the federal and state and territory governments.

Gradings are provided for each government based on each jurisdictions' holistic policy environment for electric vehicles and the development of policy actions over the last twelve months. Further weighting is provided based on the relative size and scale of actions to other Australian jurisdictions, and confidence in the future efficacy of efforts.

NSW	ACT	NT	TAS	QLD	SA	VIC	WA	FED
9/10	8/10	7/10	7/10	6/10	6/10	6/10	6/10	3/10

## Federal Government

The Federal Government has received the lowest score for the second year in a row. There remains a lack of leadership at a federal level and the Federal Government has failed to deliver on its promise of a National Electric Vehicle Strategy.

The *Future Fuels Strategy – discussion paper* does not include sufficient actions to accelerate uptake.

The exception to this is the provision of co-investment for charging infrastructure, where the Government has recently announced \$24.55 million through the Future Fuels Fund. This investment is in addition to \$21 million previously funded through the Federal Government's Australian Renewable Energy Agency.

While these investments may have been enough to increase its score, it has been held back by the Federal Government's continued failure to deliver a national policy, address fuel efficiency standards and the lack of confidence in future ambition.

## State and territory governments

The deficiency of national direction will continue to have a negative effect on the future uptake of electric vehicles. However, many state and territory governments are working to fill the policy vacuum.

There has been a policy shift in the last 12 months that has seen state governments demonstrate increasing support for electric vehicles. Some states have understood the need to financially incentivise uptake and the importance of regulatory commitments to signal confidence to the electric vehicle industry.





## New South Wales 9/10



NSW has experienced the biggest change over the last 12 months thanks to the introduction of its whole-of-government Electric Vehicle Strategy, backed by \$500 million in funded actions.

The removal of stamp duty and \$3,000 rebates for electric vehicles under a price cap, \$171 million for co-funding infrastructure, and 100% bus and government fleet targets, provide real, meaningful actions that give confidence to consumers and industry, spurring greater investment and outcomes for the state.

This is matched by a commitment to delay road user charges until the market has matured, either by 2027 or until electric vehicles account for 30% of sales, ultimately replacing upfront stamp duty charges.

As the first government to receive such a high rating, NSW policy provides a benchmark by which other states' actions are weighted.

To maintain this score, NSW will need to monitor the effectiveness of its policies in reaching its stated goals of 52% electric vehicle uptake by 2030/31 and continue to co-ordinate activities across the Government as necessary.

The greatest risk to NSW's score is its lack of mandated targets and regulations. However, this is counterbalanced by the state's significant, whole-of-government approach to its Electric Vehicle Strategy which provides strong confidence in its willingness and ability to continue its strong performance in this space.



## Australian Capital Territory 8/10



The ACT has traditionally been a national leader in progressive electric vehicle policy and has continued to complement these efforts over the past 12 months.

Financial incentives through tax rebates have been complemented by two years free registration and a \$15,000 interest free loan. The ACT continues to work towards its government fleet procurement targets and has signalled it may revise its bus electrification targets, bringing them forward in line with NSW.

While it similarly does not have a mandated target or fleet regulations, its continued efforts to improve transport electrification demonstrate a strong willingness and even enthusiasm to support and accelerate the shift to electric vehicles.



## Tasmania 7/10



Tasmania's electric vehicle policy focus has primarily been on the provision of funding public charging infrastructure, leading to the roll out of public charging sites across the state.

In recent months, the state also recently announced an expanded policy approach to fund purchase incentives, including a two-year stamp duty exemption for all electric vehicles as well as free registration for the next two years for car rental companies and coach operators.

It has also committed an additional \$600,000 in funding for more public charging infrastructure and has set a 100% electric government fleet target by 2030. Tasmania is establishing a good foundation for greater electric vehicle adoption, but there remains scope to offer greater financial incentives to bring the state in line with NSW and the ACT.



## Victoria 6/10



Victoria has announced several positive policies over the past 12 months, being the first to introduce a financial rebate for electric vehicle purchases of \$3,000 for 4,000 vehicles, with a further rebate for 16,000 vehicles to be confirmed. Its Zero Emissions Vehicle Roadmap properly identifies many actions and is supported with \$100 million in funding towards rebates, charging infrastructure, electric vehicle procurement and an electric bus trial.

These positive initiatives are counterbalanced by the state's introduction of a road user charge, exclusively applying to electric vehicles, beginning on 1 July 2021. This move has been criticised as premature and detrimental at this early stage of uptake by many stakeholders, including the Electric Vehicle Council. Victoria's charges are also, unlike in NSW, on top of existing charges such as stamp duty.

Supporting Victoria's policy is the sales target of 50% electric vehicle sales by 2030. Victoria has established an external panel to advise it on the necessary steps to achieving this target.

Its grade is hindered by a lack of confidence, following a lack of engagement during the development of its road user charge. It has also been weighted down by its relative comparison to NSW.

Victoria is best placed to improve its grade by detailing actions to accelerate electric vehicle uptake, in line with its 50% sales target. Alternatively, if these actions are not forthcoming, given the presence of its electric vehicle charges, its score may decrease.



## Queensland 6/10



Queensland has leveraged its early leadership in electric vehicle infrastructure by continuing to expand its Electric Vehicle Super-Highway. The state is currently consulting to update its electric vehicle strategy, having been the first state in Australia to develop one in 2017. To increase its grade Queensland should increase the scope of its Electric Vehicle Strategy to include financial incentives for the purchase of EVs in line with other states.



## Western Australia 6/10



WA released its electric vehicle strategy in 2020, announcing the development of a state charging network, consumer education programs and a fleet procurement target.

To increase its grade the state should continue implementation of its recent strategy and increase its scope to include financial incentives for the purchase of electric vehicles in line with other states.



## South Australia 6/10



South Australia released its \$18.3 million Electric Vehicle Action Plan, with a focus on co-funding for charging infrastructure.

The state also flagged its intention to introduce road user charges in 2020, however this was delayed and is now being reconsidered by the government. South Australia has also announced a desire to see half of all new vehicle sales be electric by 2030 and all new sales electric by 2035, however it has not yet detailed plans to achieve these goals.

To increase its grade, the state should increase the scope of its strategy to include financial incentives for the purchase of electric vehicles and delay the introduction of road user charges until the market for electric vehicles has matured.



## Northern Territory 7/10



This year, the Northern Territory released its first electric vehicle strategy, with a scope of measures to accelerate electric vehicle adoption. The inclusion of financial incentives, coupled with a commitment to charging infrastructure investment, has quickly brought the Northern Territory in line with other leading states. The grade for the Northern Territory reflects the intention for action.

To maintain its score, the Territory should implement the actions outlined in the paper, and provide further detail on the funding commitments it is making to charging infrastructure, strengthen its government fleet target and commit to electric bus transition.

## Financial incentives

NSW	VIC	ACT	TAS	NT
<ul style="list-style-type: none"> <li>\$3,000 rebate for first 25,000 EVs purchased for less than \$68,750</li> </ul>	<ul style="list-style-type: none"> <li>\$3,000 rebate for first 4,000 EVs purchased for less than \$68,740</li> </ul>	<ul style="list-style-type: none"> <li>free vehicle registration for two years</li> </ul>	<ul style="list-style-type: none"> <li>stamp duty exemption for EVs for next two years</li> </ul>	<ul style="list-style-type: none"> <li>free registration for five years from 2022.</li> </ul>
<ul style="list-style-type: none"> <li>stamp duty exemptions for EVs purchased for under \$78,000</li> </ul>	<ul style="list-style-type: none"> <li>incentive amount for additional 16,000 EVs still to be determined</li> </ul>	<ul style="list-style-type: none"> <li>stamp duty exemption</li> <li>\$15,000 interest-free loan</li> </ul>	<ul style="list-style-type: none"> <li>free registration for car rental companies and coach operators for two years</li> </ul>	<ul style="list-style-type: none"> <li>\$1500 stamp duty reduction for five years from 2022</li> </ul>

## Electric vehicle sales targets

South Australia has publicly stated an aim for **all** passenger vehicle sales to be electric by 2035.



Victoria has set a sales target of **50%** new vehicle sales to be zero emissions by 2030.

50%



The Australian Capital Territory has announced an intention to adopt a target for 2030 for new **zero** emission vehicle sales.



New South Wales has announced an **electric vehicle strategy** to increase electric vehicle sales to **53%** by 2030-2031.



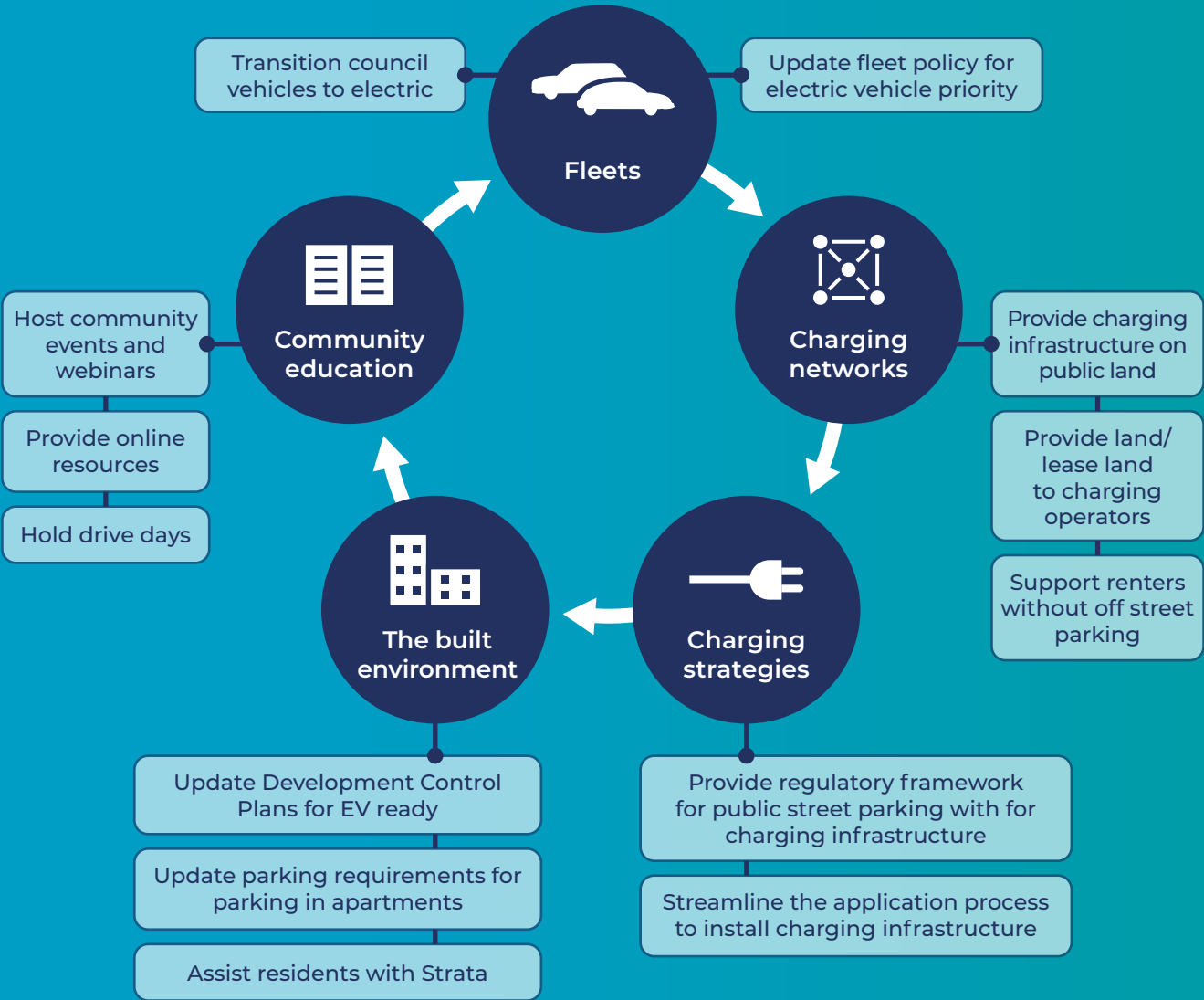
## Charging infrastructure investment:

ACT	NSW	VIC	QLD	SA	TAS	WA	NT	Federal
\$2.66 million	\$176 million	\$22.65 million	\$10 million	\$13.4 million	\$1.2 million	\$20 million	\$ -	\$37.5 million

# Local government

There are many opportunities for local governments to lead on electric vehicle action, and they are an important stakeholder in promoting electric vehicle adoption. Local governments are often the level of government most accessible to Australian communities and can provide much needed education and accessibility to electric vehicles through existing sustainability programs and commitments.

Previously, many local governments chose to focus on one 'area' of electrification, such as charging infrastructure strategies or fleet transition.<sup>6</sup> However, local governments are increasingly approaching electric vehicles more holistically by providing a number of programs and policies across the electric vehicle ecosystem.



State and territory governments could provide further support to local governments to inform, familiarise and inspire electric vehicle transition in their constituencies.

<sup>6</sup> The Electric Vehicle Council Local Government Resource Pack highlights some of the work currently being done by local governments to accelerate electric vehicle uptake. Further resources for local governments can be found via Charge Together Fleets: [www.chargetogetherfleets.org](http://www.chargetogetherfleets.org)

# APPENDIX 1 Annual electric vehicle sales

Year	BEV Sales	PHEV Sales	Total Sales	EV % of Light Vehicle Sales
2011	49	0	49	0.00%
2012	173	80	253	0.02%
2013	191	102	293	0.02%
2014	371	951	1,322	0.12%
2015	759	1,012	1,771	0.15%
2016	668	701	1,369	0.12%
2017	1,208	1,076	2,284	0.19%
2018	1,053	1,163	2,216	0.21%
2019	5,292	1,426	6,718	0.65%
2020	5,215	1,685	6,900	0.78%
2021 (YTD June)	7,248	1,440	8,688	1.57%

## APPENDIX 2 Global electrification commitments

Manufacturer	Date commitment	Funding commitment	Carbon commitment
Audi	By 2025, 30 EV models (20 BEV) available	\$15.5 billion through to 2025	Carbon neutral production facilities by 2030
BMW	By 2025, EVs will account for 15-25% of global sales By 2030, 50% of sedans, SUVs, and Minis will be electric	\$9.37 billion	Reduce emissions footprint by one-third by 2030
Daimler	By 2022, 10 new EV models By 2030, sell 70% fewer ICEVs By 2039, stop ICEV production	\$110 billion	CO2-neutral new car fleet and CO2-neutral supply chain by 2039
Ford	By 2030, 40% of new vehicle sales will be electric By 2030, 100% electric in Europe	\$30 billion through to 2025	Carbon neutral by 2050
GM	By 2025, 30 EV models available By 2035, phase out ICEVs	\$34.8 billion through to 2025	Carbon neutral by 2040
Honda	By 2025, 25% electric By 2040, 100% electric	\$59.6 billion over the next 6 years	Reduce emissions by 46% by 2030
Hyundai	By 2025, 23 EV models	\$22.4 billion to 2025 (Hyundai Motor Group) Additional \$9 billion in 2021 for US	Carbon neutral operation system by 2050.
Jaguar Land Rover	By 2024, electric land rover available By 2025, 100% electric By 2036, target of zero tailpipe emission	4.6 billion per year	Net zero carbon emissions across supply chain products and operations by 2039
Kia	By 2026, 11 EV models By 2030, EVs will account for 40% production	\$22.4 billion to 2025 (Hyundai Motor Group) Additional \$9 billion in 2021 for the US.	
Mazda	By 2030, 100% electric		90% reduction on 2010 emissions by 2050
Mitsubishi	By 2030, 50% of global sales will be electric vehicles		Net-zero emissions by 2050
Nissan	By 2023, 8 new EV models and 30% of portfolio electric By early 2030s, electrify 100% of new vehicles	\$10 billion	Net-zero emissions by 2050
Peugeot	By 2020, 5 EV models		
Porsche	By 2025, 50% BEV	\$9.4 billion	CO2 neutral across entire value chain by 2030
Groupe Renault	By 2025, 24 EV models	\$10 billion	Carbon neutral in Europe by 2050
Skoda	By 2025, 10 EV models (6 BEV)	\$3.95 billion in next 5 years on future technologies - with more than half for EVs	50% reduction in fleet emissions by 2030 compared to 2020
Tesla	100% electric		
Toyota	By early 2020s, 10 EV models		Carbon neutral by 2050
Volkswagen	By 2025, produce 1.5 million EVs across VW Group By 2028, 70 new EV models	\$86 billion over the next five years (VW Group)	Carbon neutral by 2050
Volvo	By 2025, 50% EV global sales target By 2030, 100% electric		Climate neutral by 2040

# APPENDIX 3

## Available passenger vehicle models

Manufacturer	Model	BEV/ PHEV	Segment	Price (\$)	Battery size (kWh)	All electric range (km)	0-100km/h (seconds)
Audi	e-tron 50	BEV	SUV	137,100	71	336	6
	e-tron 55	BEV	SUV	146,100	95	436	5
	e-tron Sportback 50	BEV	SUV	148,100	71	342	6
	e-tron Sportback 55	BEV	SUV	157,100	95	444	5
BMW	i3s 120Ah	BEV	Subcompact	71,900	42	329	6
	X5 xDrive45e	PHEV	SUV	135,900	24	80	5
	330e	PHEV	Sedan	84,900	12	57	5
	530e	PHEV	Sedan	122,900	12	54	5
	745e	PHEV	Sedan	209,900	12	52	5
Hyundai	Ioniq Plugin Elite	PHEV	Sedan	41,990	8	63	10
	Ioniq Plugin Premium	PHEV	Sedan	46,490	8	63	10
	Ioniq Electric Elite	BEV	Sedan	48,970	28	311	9
	Ioniq Electric Premium 2020	BEV	Sedan	53,010	38	311	9.7
	Kona Electric Elite	BEV	SUV	62,000	64	484	7
	Kona Highlander	BEV	SUV	66,000	64	449	7
JLR	I PACE	BEV	SUV	138,460	90	470	4
	Range Rover Sport	PHEV	SUV	136,187	13	48	6
	Range Rover	PHEV	SUV	216,575	13	48	6
Kia	Niro EV	BEV	SUV	62,590	64	450	7.8
	Niro PHEV	PHEV	SUV	53,990	8.9	58	9
MINI	Electric hatch	BEV	Subcompact	55,650	32	242	7
	Countryman hybrid	PHEV	Compact SUV	64,000	7	40	6
Mitsubishi	Mitsubishi Outlander	PHEV	SUV	47,390	13.8	54	-
Mercedes-Benz	EQC400	BEV	SUV	141,400	80	434	5
	A250e	PHEV	Hatch and Sedan	64,800	15	73	6
	C300e	PHEV	Sedan	85,100	13	52	5
	GLC300e	PHEV	SUV	93,800	13	46	5
	E300e	PHEV	Sedan	123,500	13	50	5
MG Motors	ZS EV	BEV	SUV	43,990	44	263	8
	HS	PHEV	SUV	46,990	16	52	6



# APPENDIX 3 Available passenger vehicle models

Manufacturer	Model	BEV/ PHEV	Segment	Price (\$)	Battery size (kWh)	All electric range (km)	0-100km/h (seconds)
Nissan	Leaf	BEV	Small car	49,990	40	270	7
	Leaf e+	BEV	Small car	60,490	62	385	6
Porsche	Cayenne E-Hybrid	PHEV	SUV	148,000	17	47	5
	Cayenne E-Hybrid Coupe	PHEV	SUV	156,400	17	47	5
	Cayenne Turbo S E-Hybrid	PHEV	SUV	296,200	17	47	3
	Cayenne Turbo S E-Hybrid Coupe	PHEV	SUV	299,900	17	47	3
	Panamera 4 E-Hybrid	PHEV	Sedan	245,900	17	56	4
	Panamera 4 E-Hybrid Executive	PHEV	Sedan	255,400	17	55	4
	Panamera 4 E-Hybrid Sport Turismo	PHEV	Wagon	253,200	17	56	4
	Panamera 4S E-Hybrid	PHEV	Sedan	292,300	17	54	3
	Panamera Turbo S E-Hybrid	PHEV	Sedan	420,800	17	53	3
	Taycan 4S	BEV	Sedan	190,400	79	365	4
	Taycan 4S with Performance Battery Plus	BEV	Sedan	201,990	93	414	4
	Taycan Turbo	BEV	Sedan	268,500	93	420	3
	Taycan Turbo S	BEV	Sedan	338,500	93	405	2
Tesla	Model S - Long range	BEV	Sedan	129,990	-	663	3
	Model S - Plaid	BEV	Sedan	174,990	-	628	2
	Model S - Plaid+	BEV	Sedan	199,990	-	837	2
	Model X - Long Range	BEV	SUV	149,990	-	580	3
	Model X - Plaid	BEV	SUV	174,990	-	547	2
	Model 3 - Standard Range Plus	BEV	Sedan	62,900	-	508	5
	Model 3 - Long Range	BEV	Sedan	77,900	-	657	4
	Model 3 - Performance	BEV	Sedan	89,900	-	628	3
Volvo	XC90 T8	PHEV	SUV	115,990	11	44	5
	XC60 T8 Polestar Engineered	PHEV	SUV	100,690	11	44	5
	XC40 Recharge	PHEV	SUV	64,990	10	44	7

# APPENDIX 4 Passenger vehicles available in the future

Manufacturer	Model	BEV/ PHEV	Segment	Price (\$)	Battery size (kWh)	All electric range (km)	0-100km/h (seconds)	Date available
Audi	e-tron S	BEV	SUV	TBC	TBC	374	4	Late 2021
	e-tron GT	BEV	Sedan	TBC	TBC	488	4	Late 2021
BMW	X3 xDrive30e	PHEV	SUV	TBC	12	46	6	Q4 2021
	iX xDrive40	BEV	SUV	TBC	~70	400	~6	Q4 2021
	iX xDrive50	BEV	SUV	TBC	~100	600	<5	Q4 2021
	iX3	BEV	SUV	TBC	80	460	6	Q3 2021
BYD	EA1	BEV	Hatchback	<35,000	TBC	500	<5	Jul 2021
	Han	BEV	Sedan	TBC	76	560	3	July 2021
	Han	PHEV	Sedan	TBC	TBC	81	4	Jul 2021
	Tang	BEV	SUV	TBC	86	500	4	Jul 2021
	Song	PHEV	SUV	TBC	TBC	TBC	TBC	TBC
	e2	BEV	Hatchback	<35,000	35	305	TBC	TBC
	Qin	BEV	Compact sedan	TBC	TBC	450	TBC	TBC
	Qin	PHEV	Compact sedan	TBC	TBC	55	TBC	TBC
FORD	Ford Escape ST	PHEV	SUV	52,940	14	50	TBC	2022
Genesis	G80	BEV	SUV	TBC	TBC	500	4	Early 2022
Hyundai	Ioniq 5	BEV	SUV	TBC	58	386	8	Q3 2021
LEXUS	ux300E	BEV	SUV	TBC	54	400	TBC	TBC
	GV60	BEV	SUV	TBC	TBC	TBC	TBC	Late 2021
Mazda	MX-30 Electric	BEV	SUV	65,490	35	224	TBC	H2 2021
MB	EQA250	BEV	SUV	76,800	66	480	8	Jun-21
	EQB	BEV	SUV	TBC	TBC	TBC	TBC	2022
	EQS	BEV	Sedan	TBC	TBC	TBC	TBC	2021
Peugeot	e-2008	BEV	SUV	TBC	50	332	TBC	2022
	508	PHEV	SUV	TBC	11	63	TBC	Q4 2021
	3008	PHEV	SUV	TBC	13	59	TBC	Q4 2021
Polestar	Polestar 2	BEV	Sedan	TBC	64	440	7	TBC
Porsche	Taycan 4S Cross Turismo	BEV	Wagon	201,000	93	436	4	Q3 2021
	Taycan Turbo Cross Turismo	BEV	Wagon	271,200	93	425	3	Q3 2021
Tesla	Model Y	BEV	SUV	TBC	TBC	505	5	TBC
Volvo	XC40 Recharge P8	BEV	SUV	TBC	78	TBC	4	Late 2021
Volkswagen	ID	BEV	SUV	TBC	TBC	TBC	TBC	2022

## APPENDIX 5 Available electric scooters and motorcycles

Manufacturer	Model	Segment	Price (\$)	Battery size (kWh)	All electric range (km)
Evoke	Urban Series	Motorbike	7,999	7	200
Fonzarelli	Arthur 1	Scooter	3,990	3	50
	Arthur 2	Scooter	4,990	5	50
	Arthur 3	Scooter	6,990	8	100
	X1	Scooter	10,990	8	80
	NKDa	Motorcycle	7,715	8	50
	NKDs	Motorcycle	10,715	8	100
	NKD+	Motorcycle	13,215	10	150
NK Dx	Motorcycle	15,715	12	200	
Harley-Davidson®	LiveWire™	Motorcycle	49,995	15	235
Savic	Alpha	Motorcycle	23,990	11	200
	Delta	Motorcycle	16,990	9	150
	Omega	Motorcycle	12,990	7	120
Super Soco	TC	Motorcycle	5,490	N/A	75
	CU x	Scooter	4,990	N/A	75

## APPENDIX 6 Electric bus availability

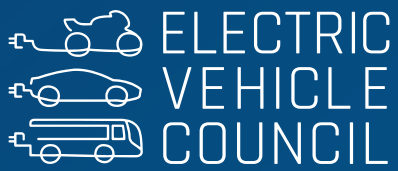
	Bus model	Range (km)	Manufacture location
BCI	Citirider E	300	NSW
BusTech Group	ZDI	325	QLD and SA
Custom Denning	Element	500	NSW
Nexport BYD Gemilang	BYD K9RA		VIC
Nexport BYD Volgren			
Yutong	E12 e-bus		

# APPENDIX 7

## Commercial vehicle model availability

Manufacturer	Model	Segment	Battery size (kWh)	Range (km)	Australian manufacture location	Availability
ACE	ACE Cargo Light	Light Commercial van	23	200	SA	TBC
	ACE Yewt	Utility van	23	200	SA	TBC
Fuso	e-canter	Truck	82	100	N/A	TBC
Electric Trucks Australia / TrueGreen Mobility	BYD T3	Van	50	300	N/A	July
EV Automotive	EC11	Van	73	200	N/A	TBC
GB Auto	TEMBO 4x4 E-LV	Converted Toyota Land Cruiser 70 series and Hilux	28/56	80/160	NSW	Now
JAC motors	N55 EV truck	Light duty truck	96	200	N/A	Available for test/trial
Janus Electric	Kenworth T403	Truck conversion	600	400-500	NSW	2022
Renault	Kangoo Maxi	Van	33	200	N/A	Now
SAIC motor	Maxus LDV EV30	Van	35	200	N/A	TBC
Safescape	Bortana EV	Converted Agrale	52	120	Victoria	Now
SEA Electric	E4V	Van	88	300	VIC	Now
	E4B	Mini-Bus	88	300	VIC	Now
	SEA 300-85	Truck Cab-Chassis	100-136	275 (Unladen)	VIC	Now
	SEA 500-140	Truck Cab-Chassis	136	200 (Unladen)	VIC	Now
	SEA 500-225	Truck Cab-Chassis	136-250	220 (Unladen)	VIC	Now
	SEA 300-45	Truck Cab-Chassis	70	275 (Unladen)	VIC	Now
Voltra	e-cruiser	Converted Toyota Land Cruiser 70 series	42	100	WA	Enquiries open
Volvo Trucks	Volvo FL Electric	Prime mover	196-396 (3-6 batteries depending on wheelbase)	<220	N/A	Now
	Volvo FE Electric	Prime mover	196-396 (3-6 batteries depending on wheelbase)	<220	N/A	Now
Zero automotive	ZED70	Mining utility vehicle	88	350	SA	Now





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