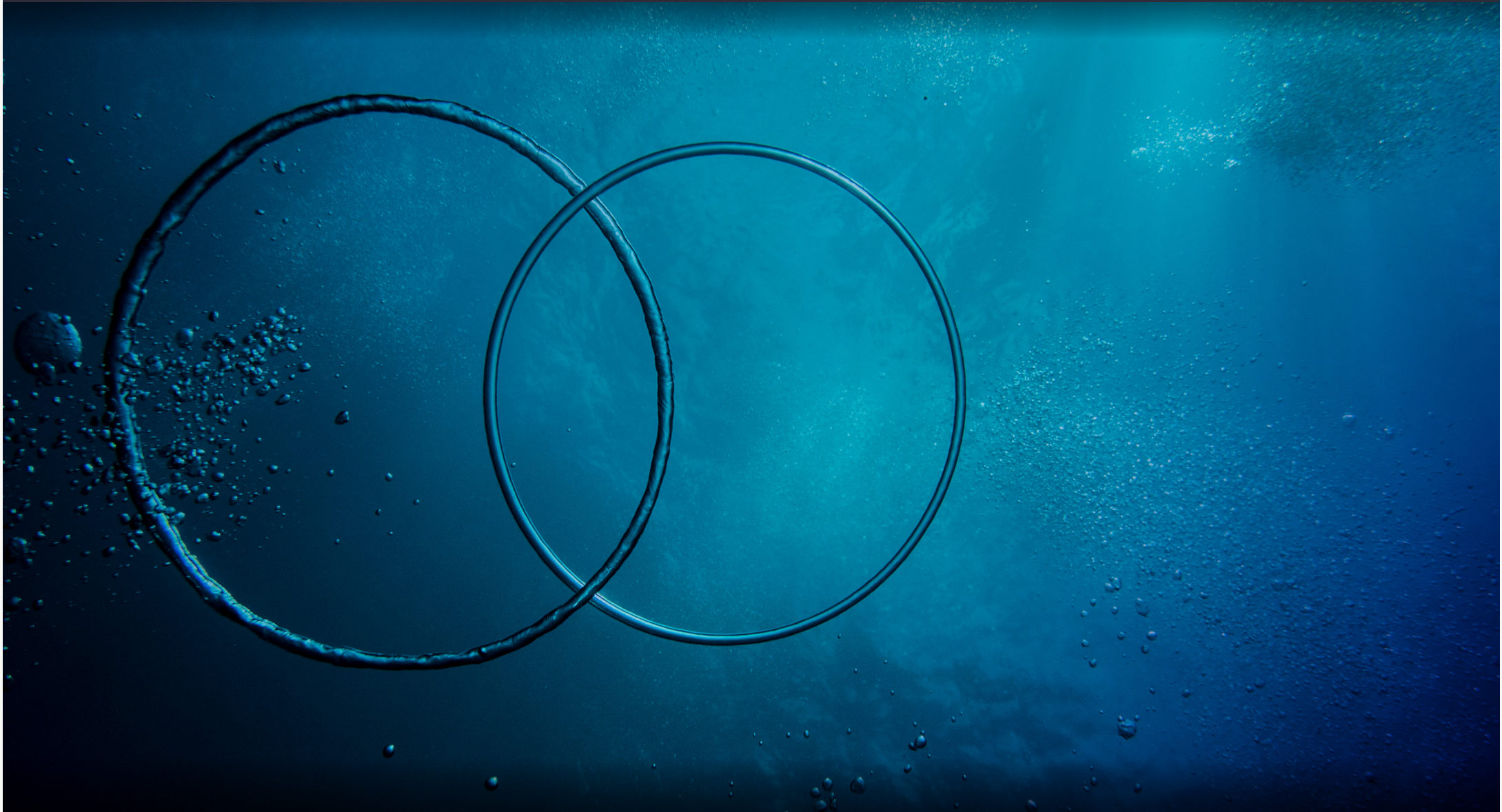


# Optima

General Insurance  
Insights 2022





## Driving the future – Navigating the road ahead for insurers

### Introduction

In the first of our [Driving the Future](#) articles, we noted that the switch from Internal Combustion Engine (ICE) vehicles to Electric Vehicles (EVs)<sup>1</sup> plays a key role in Australia's shift to a net zero economy, and that we expect the speed of this transition to ramp up quickly given new government targets and planned incentives.

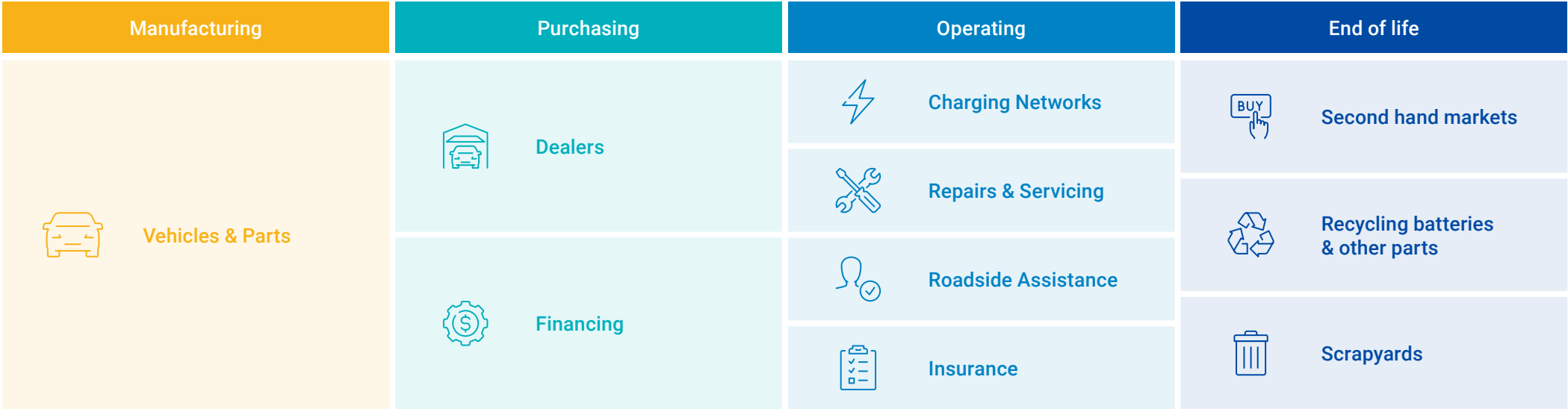
We also highlighted that each of the infrastructure building blocks (as illustrated in the ecosystem picture overleaf) will need to be properly considered and evolved to support EVs alongside ICE vehicles, and that the advent of EVs raises both challenges and opportunities for each stakeholder group in this ecosystem.

This article takes a deeper dive into the role of insurance, acknowledging that there are a range of interdependencies with other key components. For insurers, understanding the implications for EV repairs is critical for future claims management as well as product, underwriting and pricing strategies.

We begin by providing a market view of vehicles including a snapshot of how vehicle composition has changed since 2016, and of current pricing differentials between EVs and ICE vehicles. We then explore key claims impacts of EVs, along with current EV product, underwriting and pricing approaches in the market. Given the immature state of the Australian EV insurance market we also highlight some key lessons from overseas markets, to help inform what might lie ahead for Australian insurers.

<sup>1</sup> Electric Vehicles (EVs) includes both plug in hybrid vehicles (PHEVs) and battery electric vehicles (BEVs).

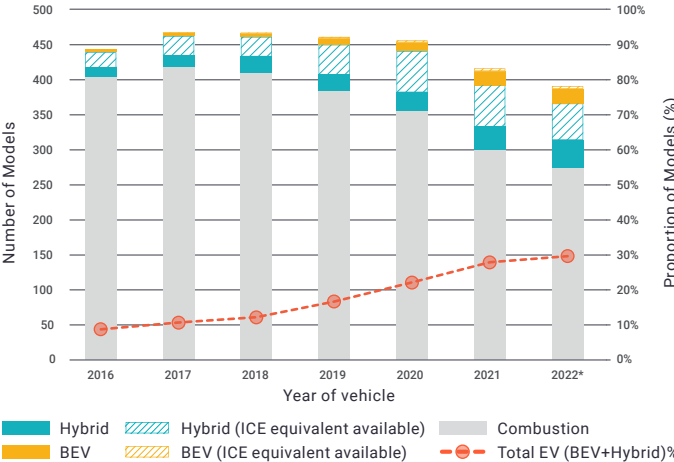




Market Composition

Based on Glass’s Guide (July 2022)<sup>2</sup>, the number of available EV models and the proportion of all models that EVs represent have both grown over time. Conversely, the number of unique ICE vehicles has been decreasing, reflecting both increasing consumer EV demand as well as a broader manufacturer push for range simplification.

Composition of Unique Vehicle Models in the Australian Market

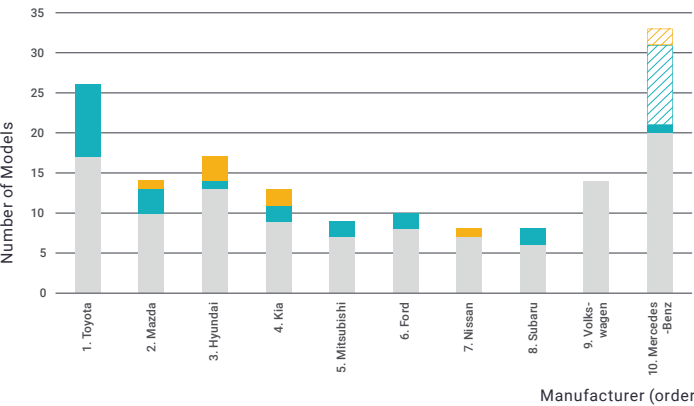


Source Glass’s Guide (July 2022), Finity analysis Note Year to date

2 Note ‘Hybrids’ for this analysis incorporates PHEVs as well as regular hybrids (i.e. including regenerative braking batteries).

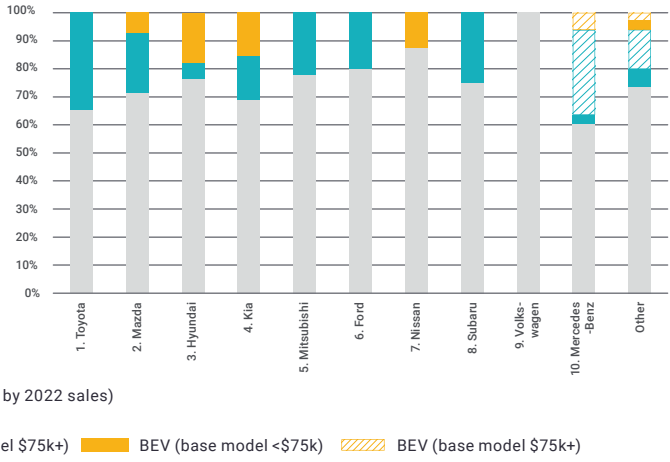
Across the largest manufacturers, Hybrids currently have a greater presence than BEVs. Some high-end manufacturers, including BMW and Porsche, are also releasing many Hybrid options.

Number of Unique ICE, Hybrid and BEV Options by Manufacturer in 2022



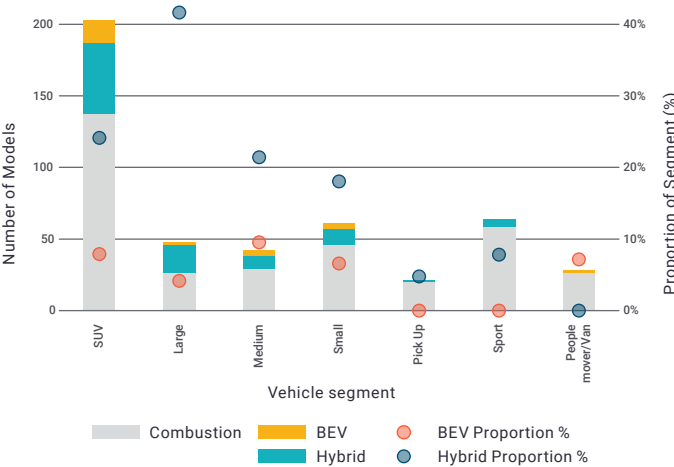
Source Glass’s Guide (July 2022), Finity analysis

Proportion of Unique ICE, Hybrid and BEV Options by Manufacturer in 2022



Overall, EVs are being produced across the full range of consumer segments, although to a lesser extent for utes/pick-ups, which is a significant segment in the Australian market.

2022 Vehicle Segment Composition (excluding Separate Variants)



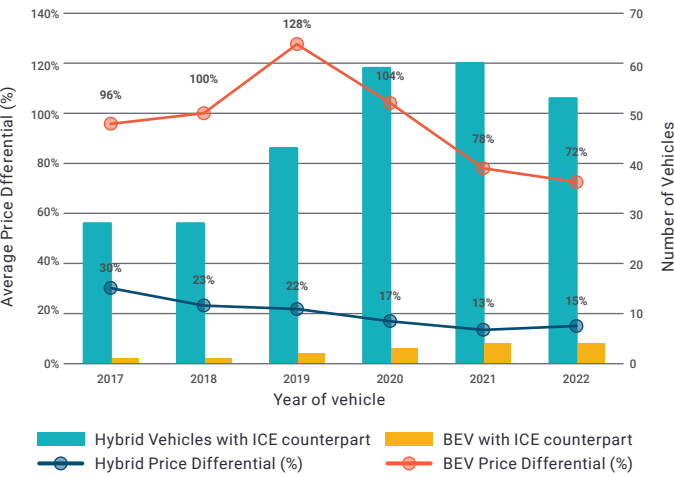
Source Glass's Guide (July 2022), Finity analysis

The snapshots above provide some leading indicators of how the market composition of vehicles may evolve in the coming years as these models filter through to the pool of total registered vehicles. An increasing proportion of EVs appears inevitable, with both BEVs and Hybrids constituting a larger proportion of manufactured models year on year. However, the full transition to EVs is likely to take many years (possibly decades), and the rate of adoption is likely to be two-tiered, with a faster transition in metro versus rural or regional areas. The speed of regional or rural EV adoption will be inhibited by a number of factors including the limited number of ute options currently available, the need to drive larger distances, towing capacity requirements, and a likely lesser availability of operating infrastructure including charging networks and authorised repairers.

EV adoption is of course heavily influenced by price, with the average price of new EVs still much higher than ICE vehicles. This can be observed regardless of whether we look at the market as a whole, or just like-for-like models which have ICE and Hybrid/BEV equivalents.

Price differentials on like-for-like vehicles vary widely (hybrids can cost anywhere from around 5% to 50%+ more than their ICE equivalents) but overall, they appear to be diminishing, as shown in the graph below. While the small numbers at play will limit the reliability of any conclusion, BEVs in particular are still significantly more expensive than their ICE counterparts.

Median Price Differential Between ICE Base Models and their Hybrid/BEV Counterpart



Source Glass's Guide (July 2022), Finity analysis    **Note** Year to date

Moving forward, we expect BEV numbers to overtake Hybrids as both infrastructure growth and rapidly improving battery technology continue to overcome BEV range limitations. We also expect the EV/ICE price differential to continue to reduce as an ever-growing range of EVs within each category enter the market and as EV technology continues to mature and achieve economies of scale.





## Claims considerations

A wide and complex range of forces needs to be considered when assessing what the ultimate claims impacts of EVs might be. Overlaid with this are existing challenges in vehicle repair parts and labour, placing additional constraints on the EV transition, and further complicating the question of when and where claims dynamics will ultimately settle.

The prima facie expectation is that EVs are safer, with fewer collision claims expected as EV share grows. This is due to the more advanced driver-assist technology embedded within EVs, as well as their ability to incorporate further technology advances. However, the risk dynamics at play go beyond safety features to numerous other factors including driver behaviour and vehicle range, as highlighted by a recent Cambridge Mobile Telematics (CMT) report analysing the differences between BEV, PHEV and ICE vehicle driver risk<sup>3</sup>. The CMT analysis demonstrated that EVs display unique risk factors distinct from ICE vehicles (such as faster acceleration), and that a driver's risk profile can differ depending on what kind of vehicle they are driving.

Another risk consideration is vehicle weight, with EVs being heavier due to the battery and associated componentry. For a given speed of impact, the stopping distance and any damage are generally greater to both vehicles and pedestrians for EVs compared to ICE vehicle collisions. EVs also have a high power to weight / acceleration ratio relative to comparable ICE vehicles – opening up more powerful vehicles to a broader, younger (and higher risk) audience. EVs are also quieter – leading to an increase in the rates of incidents involving pedestrians.

## Repairer networks

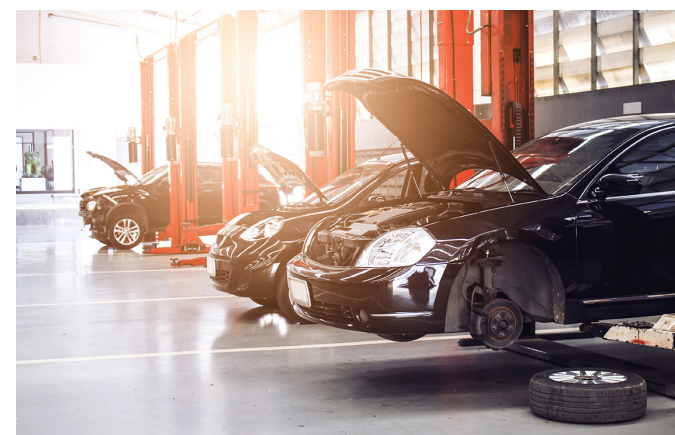
EVs will change repairer network dynamics in Australia. We expect large repairer networks to be propagated by all EV makes, while independent repairers will likely specialise in a more limited range. Since Original Equipment Manufacturers (OEMs) control the distribution of parts, the independents will require substantial investment if they wish to compete with large OEM-authorised repairer networks.

EV repairers require specialised workshop equipment, diagnostic tools, personnel training, technical data and repair methods. This is likely to require significant capital investment as well as ongoing expenditure to ensure compliance with OEM standards and technology developments. We foresee a likely increase in labour costs, and a likely reduction in competitive repair choices – placing upwards pressure on repair costs for insurers.

From a parts perspective, parts for newer models are generally more expensive and have longer lead times. Higher OEM parts prices are also possible, due to complex component technology and the potential for captive monopoly pricing. On the flipside, smaller inventories of replacement parts will likely be required, which could lead to an improvement in parts availability and repair cycle times in the long-run.

Parts to labour ratios differ significantly between ICE vehicles and EVs. This is highlighted by a recent UK study from Activate Group<sup>4</sup> which found that EVs have a substantially increased parts to labour ratio (29% higher for BEVs, and 66% higher for PHEVs) compared to ICE vehicles. The same study found the average repair time for EVs was 1.5 days longer than for ICE vehicles.

Overall, there are a number of often opposing forces at play. However, we expect that in the short-term the net result will be higher claims cost pressures. This is supported by industry experience to date, with Suncorp motor expert Steve Cratchley noting that “there is absolutely no question that EVs are costlier at this point [for claims] – every insurer's data would show this”. However, Cratchley believes the difference between EV and ICE repairs will reduce over time, as parts supply issues are addressed and repairer capacity and capability increase. The million-dollar question is where the differential will ultimately settle, and how long this transition will take. How insurers choose to respond to this uncertainty in the short and longer term from a product, underwriting and pricing perspective is one to watch closely.



<sup>3</sup> <https://www.cmt telematics.com/news/cambridge-mobile-telematics-research-into-electric-vehicle-risk-unveils-key-insights-into-changes-in-road-safety-in-an-ev-future/>

<sup>4</sup> <https://www.bodyshopmag.com/2022/news/ev-repairs-slower-and-more-costly/>

Product, Underwriting and Pricing observations

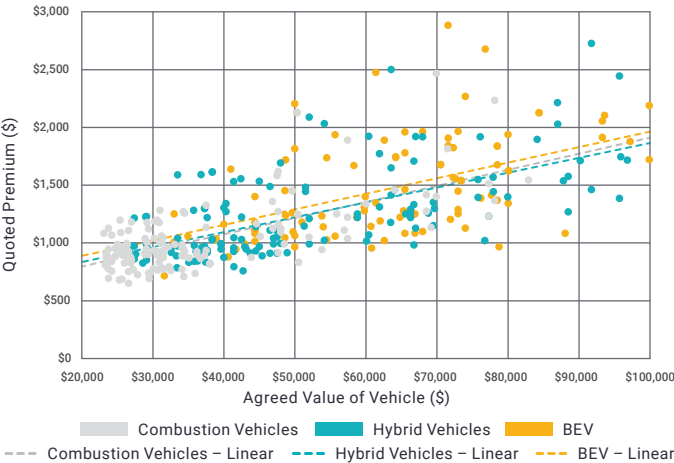
To explore how Australian insurers are currently approaching EVs on a product, underwriting and pricing basis, we used [Market Finesse](#) to identify and analyse EV vs ICE vehicle differentials in relation to product offerings, the availability of insurance and pricing.

For each of these aspects, our key conclusion is that, at an overall market level, EVs and ICE vehicles are currently treated similarly.

Product differences are negligible and across the market and there is generally good availability of insurance for EVs. There are some minor exceptions – for example, one insurer currently excludes Teslas, and another does not write high sums insured, which will reduce underwriting of EVs due to their higher price point.

On average, a consumer does currently pay more for EV insurance. However, this is essentially a reflection of higher sums insured, rather than insurers pricing for the higher claims costs discussed above. To explore this in more detail we mapped agreed values against quoted premiums for a number of one-way quotes across a range of vehicles, insurers and states using Market Finesse data. The outputs were broadly consistent across states, with Victoria used below to illustrate.

Agreed Value vs. Quote Premium Comparison



Source Glass's Guide (July 2022), Finitly analysis

The key conclusion from this analysis is that there is little evidence of a price differential – all else equal – between ICE vehicles, PHEVs and BEVs. The chart above shows a similar relationship between agreed values and premiums across all vehicle types. Taking the Victorian example above, there is no statistically significant difference between the gradient or absolute positioning of the lines of best fit. That is, there does not appear to be any fundamental difference overall in the pricing for each vehicle type.

However, when we look at the data at an individual insurer level, we can see some signs of differing risk appetites for EVs generally as well as for specific EV manufacturers. In particular, the limited appetite that certain insurers have for certain manufacturers is reflected in higher price points – perhaps an indication that differing EV strategies across insurers are beginning to emerge.

The current Australian market shows limited development in the product and pricing space to date for EVs. However, existing pressures on claim costs due to supply chain disruptions and resource scarcity, alongside an increasing EV proportion of the market leading to greater volumes of EV data and experience, will inevitably increase product and pricing sophistication in the future.

Challengers may look to move early with the hope of attracting customers from incumbents and exploiting any behavioural or demographic skew in these segments of the market. Incumbents may look closely at the market for signs of a shift in the EV product and pricing environment to ensure they are a close follower and do not expose themselves to retention or anti-selection issues.





## What can we learn from elsewhere?

With Australia still in its early days of EVs, it will take some time before a large enough volume of claims experience is available to accurately price car insurance. In the meantime, experience from overseas can provide some instructive lessons for Australian insurers as to what lies ahead. Norway is the market leader for EV penetration, with EVs growing from 3% of total sales in 2012 to 83% in 2021 – and heading towards the 90% level, driven by a compelling range of tax and other incentives.

The experience for Norwegian insurers highlights some of the claims challenges outlined earlier, with repairs in the early years challenged as a result of difficulty in accessing parts and a shortage of skilled repairers – leading to longer repair times and higher costs. Higher claims frequencies were also experienced as drivers adjusted to the faster acceleration for EVs. It is important to note that Teslas were essentially the only EVs on the market during the period over which the Norwegian EV fleet grew (2012 to 2022). This is a different starting point for Australia's transition.

Norwegian insurers initially struggled with the limited data available and how to respond. Some insurers deliberately priced lower to gain data, insight and market growth. Some priced technically, resulting in lower market shares for the EV segment. Some key learnings shared with us by one insurer were the importance of securing partnerships given most EV sales are new vehicles and of considering broader customer value implications when implementing EV pricing strategies. This led to them needing to more competitively price EV insurance for their high value customers in order to mitigate the risk of losing them.

Insurers in Norway absorbed these extra costs for around 3-4 years, with repair problems continuing to resolve as parts became more accessible and as repair capacity and capability in the market caught up. Market shares also normalised over time; however, some differences from the early pricing strategies appear to still linger.

Even today, technical pricing models are continuing to evolve, and only recently are they including specific rating factors for EVs. Poor quality technical data remains an issue in some areas, such as horsepower or kilowatts. It is also interesting to note that Norway is at the early stages of a second transition, with many new EV brands and models coming onto the market more recently, especially from China. For these new models, insurers are going through a similar experience to the initial transition with Teslas, including challenges accessing parts and long waiting times for repairs.

## Lessons from history – airbags and ADAS

In 1995, a time where airbags were rapidly becoming a standard safety feature, it was estimated that airbags added approximately \$1000 to the price of cars.<sup>5</sup> As research and understanding regarding the effectiveness of airbags grew, so did their social acceptance and consumer willingness to pay. After a long period of opposing safety standards, auto manufacturers eventually adopted them as standard.

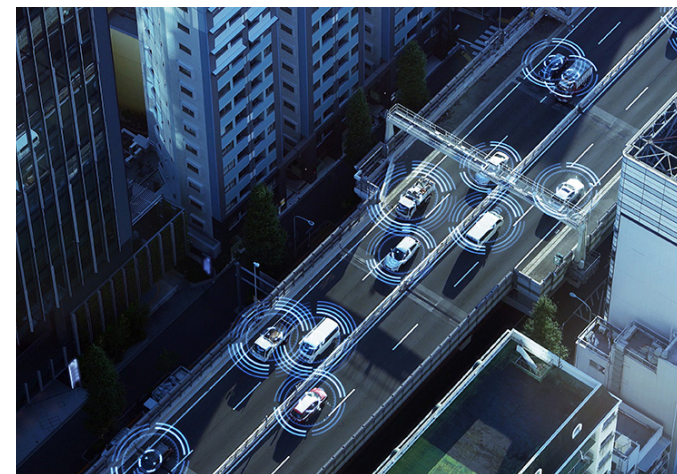
Insurers faced a dilemma during the early years of airbag adoption in that average collision costs increased significantly for vehicles equipped with airbags. However, as adoption became widespread, safety benefits were realised resulting in a more positive cost curve for insurers as time went on.<sup>6</sup> This was due to both a decrease in the price of airbags due to their widespread acceptance and mass production, and from the eventual decrease in the frequency and severity of bodily injury claims.

A similar scenario is observable in modern advanced driver assistance systems (ADAS), with a combination of cameras, lasers, and radars that help warn drivers and reduce road accidents. It is estimated ADAS equipped cars can reduce the frequency of car accidents by up to 25%;<sup>7</sup> however, the trade-off is that these hi-tech systems are more expensive to replace or repair. These repairs were even more costly in the early days of ADAS, with OEM dealers not seeing the benefit of training their staff for calibration – which meant that vehicles had to be transported further for calibration, and were off the road for longer. As ADAS penetration has increased, these transitory factors have resolved, and insurers now readily offer premium discounts for ADAS features<sup>8</sup>.

## Conclusion

The arrival of the EV era raises a wide and complex range of considerations for insurers. Claims forces at play are many and varied – the net result in the short-term likely being higher claims cost pressures for EVs vs ICE vehicles. This gap will close as parts availability improves and as repairer capability and capacity challenges are resolved. In addition, EVs should experience lower frequency in line with their more advanced technology.

On the whole insurers are currently adopting a 'wait and see' approach in relation to EV product, underwriting and pricing, developing an EV strategy, including due consideration of the transition phase. However, these are becoming looming imperatives for insurers.



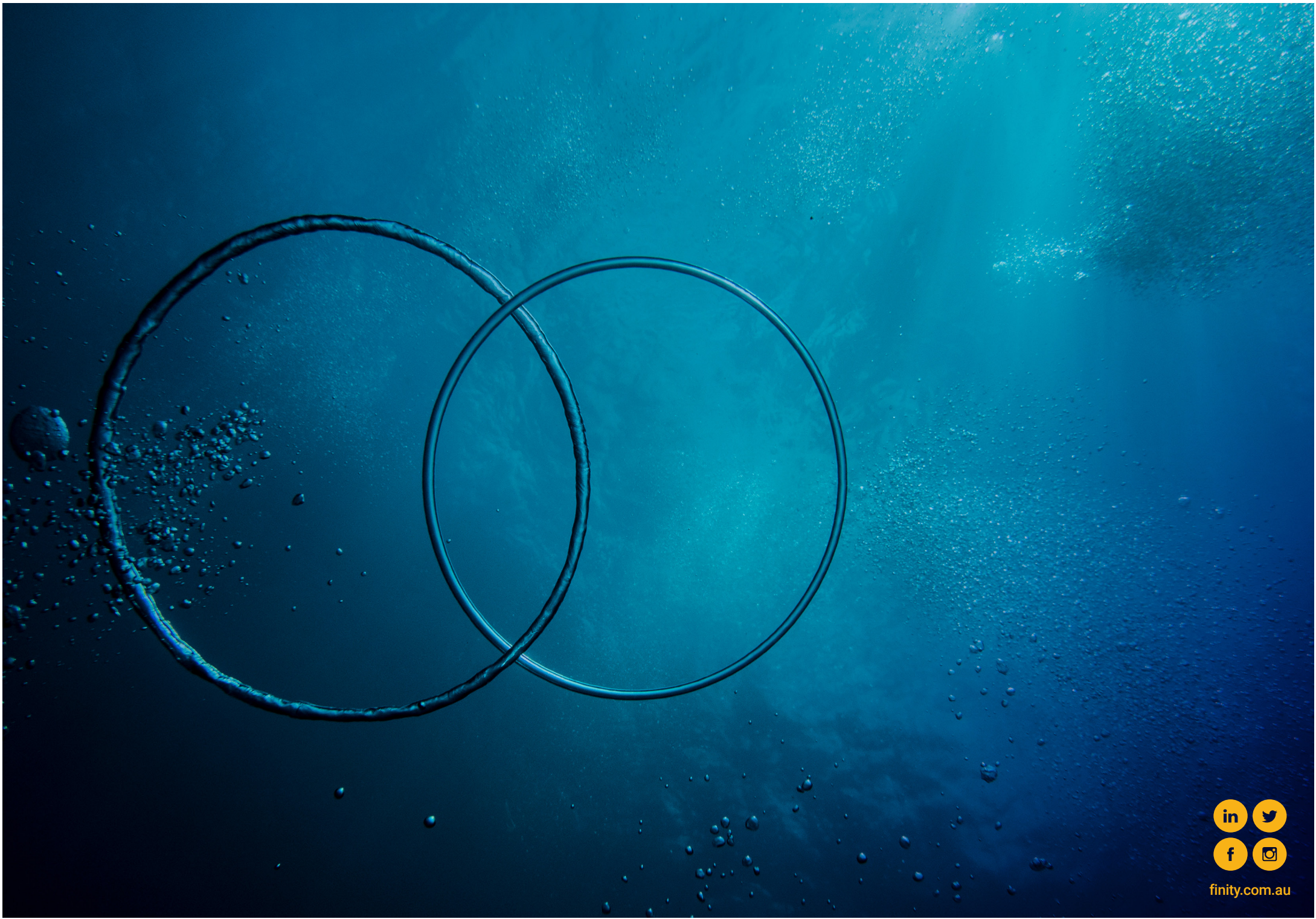
<sup>5</sup> Auto Insurers and the Airbag-Steven Peterson and George E. Hoffer - The Journal of Risk and Insurance Vol. 63, No. 3 (Sep., 1996)

<sup>6</sup> Automobile Air Bags in the 1990s: Market Failure or Market Efficiency? Fred Mannering and Clifford Winston, The Journal of Law & Economics Vol. 38, No. 2 (Oct., 1995)

<sup>7</sup> <https://www.reuters.com/subjects/autos/article/us-auto-selfdriving-insurance-focus/new-auto-safety-technology-leaves-insurers-in-the-dark-idUSKCN1UL165#:~:text=According%20to%20Swiss%20Re%20AG,by%20%2420%20billion%20by%202020.>

<sup>8</sup> <https://www.businessinsider.com/car-insurance-rate-decrease-10-thanks-to-advanced-safety-tech-2020-10>





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