Electrifying Australia's Fleets:

Closing the Say-Do Gap

fifth quadrant

carloop

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Executive Summary

The commercial fleet sector is pivotal to achieving Australia's net-zero emissions targets, yet the transition to electrified fleets remains slow.

Commercial fleets account for c.48% of sales and contribute approximately 15-20% of Australia's total net emissions. Today, EVs make up less than 5% of fleet purchases and <1% of the fleet carparc, despite the c.20% of ASX200 companies that have set specific EV transition plans. **There is evidence that a "say-do" gap is emerging**.

Three industries - mining, logistics, and manufacturing - offer the greatest potential to close this gap. Given c.70% of total fleet emissions are generated by these sectors and c.50-65% of vehicles in these fleets are 'light and medium' commercial vehicles that may be addressable with the emerging pipeline of EVs.

Whilst these three industries are in pole position, five key barriers to adoption remain. Overcoming these barriers will require integrated and system wide solutions, with joint effort from OEMs, fleet managers, financiers, insurers, and other vale chain stakeholders.

We believe there are low cost and low risk strategic actions available to these stakeholders to close the gap. The road ahead is winding, and there will be speedbumps. But the destination is worth working for.

Australian EV Fleet Transition in Numbers

Corporate fleets produced approx.

70-80Mt

CO2-e in 2023…

…Accounting for

17-19%

of net Australian emissions

Despite

59%

of the ASX200 targeting Net Zero…

…Only

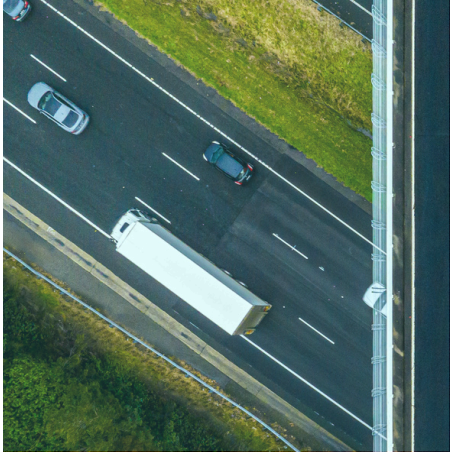
19%

have a clear EV transition plan…

…And EVs only represent

<1%

of corporate fleets today



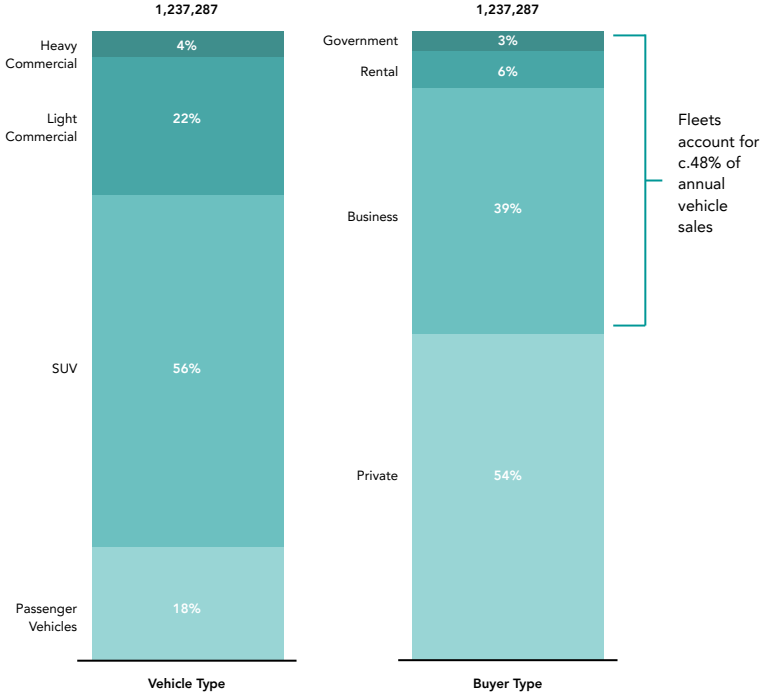
Commercial Fleets have a major role in the *Drive to Net Zero*

The commercial fleet sector has a significant role to play in achieving emissions reduction targets, on both 2030 and 2050 timescales. Commercial fleets account for c.2/3 of ground vehicle emissions, or c.15-20% of total (net) Australian emissions.

However, the transition to zero emission vehicles (ZEV) - including electric vehicles - (EV) has been limited to date. Further strategic action is needed to accelerate EV adoption, or net-zero targets will not be met.

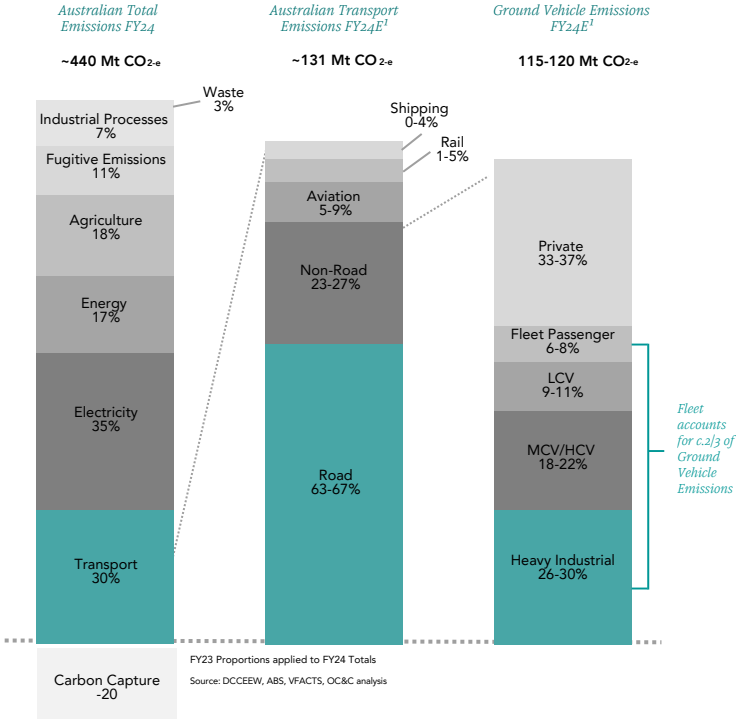
Figure 1: Vehicle Sales by Type and Buyer, 2024

Australia 2024 (#Total and % of Total)



Source: VFACTS, OC&C analysis

Figure 1: Greenhouse Gas Emissions by Sector
Australia FY24 (% Total)



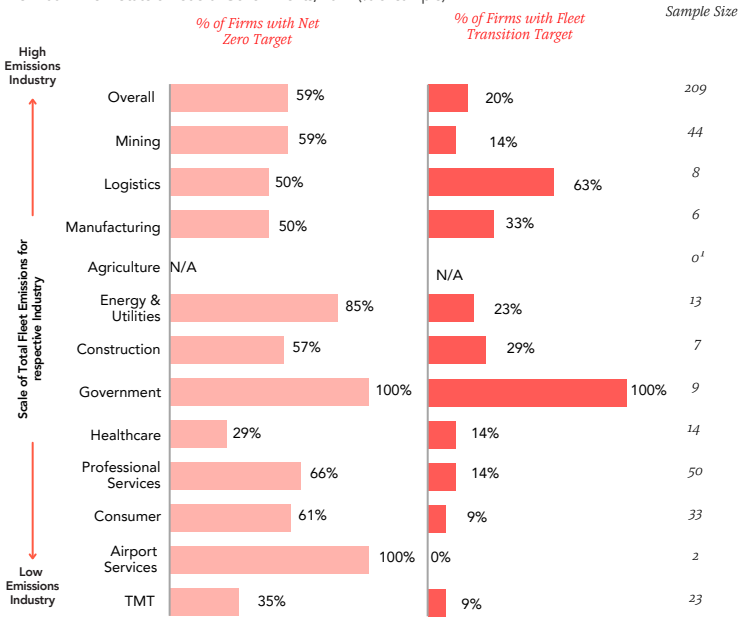
There is a 'Say-Do' Gap Emerging between *Corporate Ambition and Action*

Despite targets to reduce emissions by 2030, many of Australia's largest companies and fleet managers may be leaving it to the last minute.

A majority of fleet managers expect EVs to be mainstream by 2030, but adoption remains low by uptake and share of the fleet carparc.

Figure 2: Proportion of Firms with Net Zero and Fleet Transition Targets by Industry Sector

ASX200 Firms + State & Federal Governments, 2024 (% of sample)



No representation of the Agriculture 1 Industry in ASX200

Source: Company Annual Reports, ABS Data, Desk Research, OC&C analysis

Approximately **60% of ASX200** companies have set overall emissions reduction targets, however there is a lack of specific actions directed to the decarbonisation of fleets across most sectors. This is particularly pronounced in the mining industry, in which fleets are core to business operations and as an industry accounts for c.40-50% of all commercial fleet emissions.

However, not all sectors have the same disconnect. Logistics stands out for its proactive stance, being responsible for c.15-20% of total fleet emissions, and in turn contributing significantly to the Scope 3 emissions of other industries.

There is also strong intent across Federal and State government departments and agencies to transition their respective fleets, albeit the Federal government has not mandated a national target.

Whilst 60% of ASX200 companies have set emissions reduction targets, the state of emissions targets across the rest of corporate Australia are likely lower - particularly for companies with lesser shareholder, stakeholder and customer pressure to decarbonise, which suggests that more must be done to set an ambitious path to transition fleets to zero emissions over the coming decade and beyond.

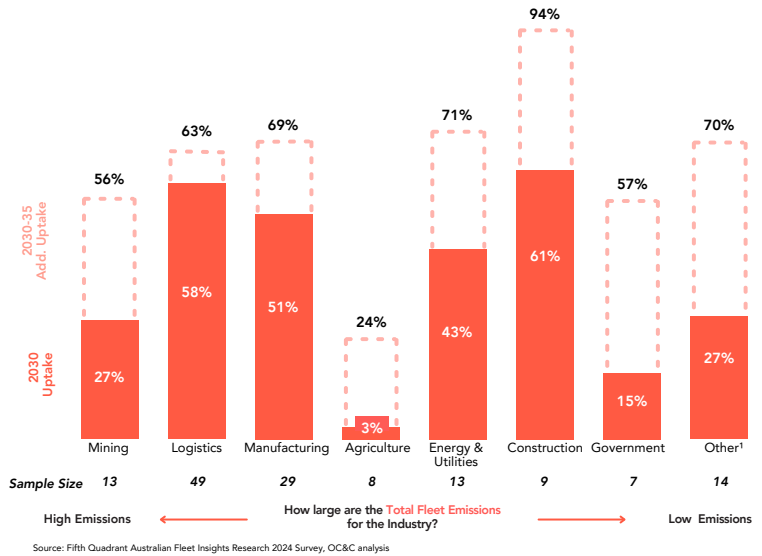
Based on the current adoption rate of ZEV fleet, Australia will not come close to meeting its decarbonisation targets.

Whilst Fleet Managers (FM) are optimistic that EVs will form a material proportion of their fleets by 2030, per Figure 3 below, the lack of specific targets is translating to limited uptake. With EV share of vehicles procured and share of the commercial fleet carparc, estimated to be less than <5% and 1%, respectively (per Figure 4 overpage). **As such, it seems highly unlikely that Corporate Fleets will make a material reduction to overall transport emissions by 2030**.

This emerging gap between what corporates "say" versus "do" may expand further, as it appears some corporates are slowing or unwinding ESG initiatives – including adoption of EVs. Large conglomerates ranging from consumer goods (Unilever), to Oil and Gas (Shell), to mining (Glencore) have all dropped or missed previously stated emissions targets. As a result, major auto OEMS are responding in kind and delaying their own EV production targets – for example, Volvo reduced its target for electrified vehicle sales from 100% by 2030, to c.90% over a similar timeframe, stating softening market demand.

Figure 3: Fleet Manager Expectations for EV Adoption

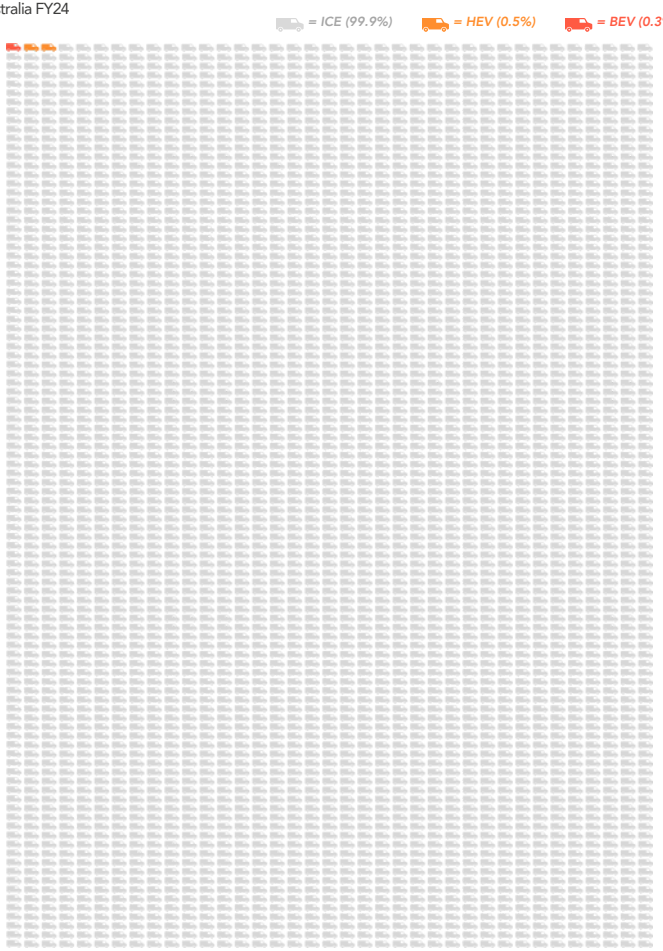
When do you expect the following vehicle technologies to become mainstream in business fleets? (%)



Source: Fifth Quadrant Australian Fleet Insights Research 2024 Survey, OC&C analysis

Figure 4: BEV / HEV Share of LCV & MCV/HCV Fleet

Australia FY24



Source: Carloop, OC&C analysis

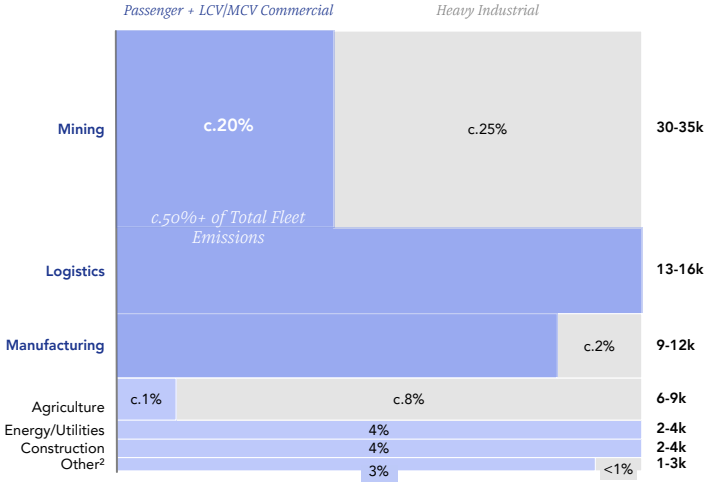
Three Industries with the Greatest Opportunity to *Shift the Needle on Transport Emissions*

Three industries – mining, logistics, and manufacturing - stand out as prime candidates for EV fleet transition, given a combination of high emissions and share of vehicles viable for transition in the near term.

These three industries account for c.70% of total fleet emissions. Transitioning a material share of corporate fleets in these industries could really shift the needle.

Logistics is the unlock for a number of related industries – their Scope 1 emissions are in everyone else's Scope 3.

Figure 5: Total Annual Corporate Fleet Emissions by Industry and Vehicle Category
Australia FY22[1] (Mt CO_{2-e})



1. Estimated using latest available industry level scope 1 emissions data and est. fleet share of emissions
2. Other includes: Government, Healthcare, Professional Services, Consumer, Airport Services & TMT

Source: Company Annual Reports, DCCEEW, ABS Data, Desk Research, OC&C analysis

In the medium term, three industries – mining, logistics, and manufacturing – stand out as prime candidates for materially reducing fleet emissions. These industries are responsible for c.70% of total fleet emissions, of which c.70% (c.50% of total fleet emissions) is directly addressable in the near-medium term, as passenger and commercial vehicle categories become viable for transition.

Transitioning the passenger and light commercial fleets in these three industries alone could reduce overall fleet emissions by up to one third - and in addition to the direct emissions reductions from these three industries, decarbonising the logistics sector unlocks reductions for a number of related industries – i.e. their Scope 1 emissions are in everyone else's Scope 3.

While government entities are not major direct emitters, they will also play a crucial leadership role in the medium term by setting policy, mandating targets, and testing the real-world use cases for EVs through their own fleets.

The 3 Segments of *Commercial Fleets*

1. Passenger

Ranging from Small to Large SUVs

- Est. Global TCO Parity by **2024-2027**
- Greatest available supply today
- Primarily reliant upon home and depot charging, backed up by public networks
- Generally non-productive assets

2. Light and Medium Commercial

Ranging from Light (LCV) to Medium (MCV) Commercial - e.g. utility vehicles, vans, mid-size trucks

- Est. Global TCO Parity by 2026-2030
- Supply emerging, nearing equality of productive capability
- Require high speed en-route charging or depot solutions
- Primarily productive assets

3. Heavy Industrial

Industry and use case specific vehicles – e.g. haulage trucks, bulldozers, cranes, etc.

- Est. Global TCO Parity expected beyond 2030
- Limited supply beyond pilot projects
- No commercial options with equal productive capability
- Complex on-site/off-road depot style charging solutions needed
- All **productive** assets

"Light Commercial" and "Heavy Industrial" vehicles represent the majority share of fleet vehicles across high emitting industries (see Figure 6), and are typically procured in accordance with stringent commercial criteria, both in terms of economics and operations.

Thus, the EV transition will require not only TCO parity, but also fit-for-purpose functionality, and scale solutions for charging infrastructure, parts and inventory, skilled labour and technicians, and specialist finance. Passenger vehicles on the other hand are typically non-productive assets or employee benefits and often face less stringent adoption criteria.

Tackling the LCV category will become more economically viable as we enter the second half of this decade as the pipeline of vehicle options expands, with a greater number of LCVs entering the Australian market in 2025/26 at lower cost and improved performance specifications.

Heavy Industrial vehicles on the other hand remain further down the road, with very few models available and most a long way from TCO parity.

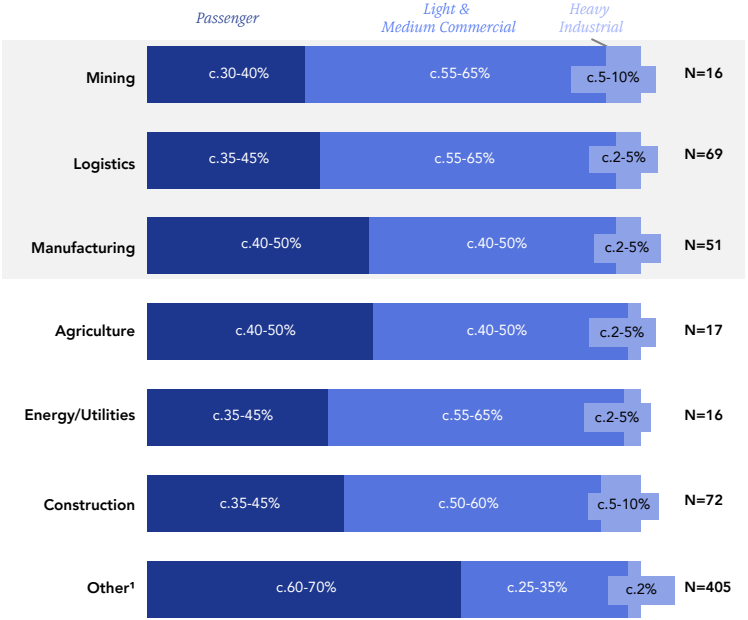
The pipeline of LCV options is being accelerated forward by technology innovation, particularly in vehicle batteries. Where advanced battery chemistries (solid state, LFP, Sodium Ion, etc.) are significantly increasing energy density and reducing cost, translating to increased vehicle payload capacity, reduced charge times, and accelerated timelines to TCO parity.

Infrastructure and aftermarket solutions are also advancing rapidly, with Ultra-Fast (350kW+) and MegaWatt charging systems, and battery swapping stations being developed for medium-heavy commercial vehicles that have the potential to reduce charge times to below 15 minutes. Further, bi-directional charging (vehicle to grid) systems and smart charging software will enable fleet wide charging optimisation and new revenue creation.

Together, share of transport emissions, share of fleet vehicles, and emerging LCV and MCV vehicle options point to three candidate industries as primed for transition – mining, logistics, and manufacturing.

Figure 6: Fleet Manager Est. of Fleet Makeup by Industry

How many of the following types of vehicles do you have? (%)



[1] Includes: Healthcare, Professional Services, Consumer, Airport Services, TMT

Source: Fifth Quadrant Australian Fleet Insights Research 2024 Survey, OC&C analysis

Overcoming Five Barriers to Adoption will be key to unlocking *the Fleet ZEV Transition*

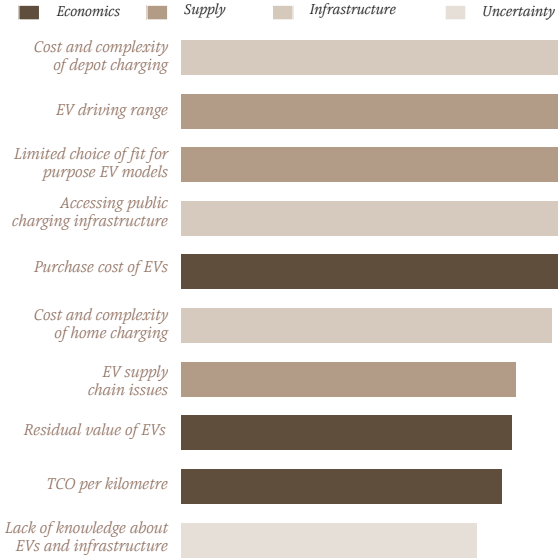
Whilst supply options are increasing, there are remaining barriers to adoption that hamper the transition to ZEV fleets.

Of the many concerns shared by fleet managers, five key barriers will need to be overcome to take the next steps.

Of the top 10 EV transition concerns shared by fleet managers, five key themes emerge; stakeholder collaboration, 'fitness for purpose' of the emerging vehicle pipeline, enabling infrastructure, vehicle finance and total cost of ownership, and the after-market network of parts, service, and repair providers.

Figure 7: Top Ten Barriers to EV Adoption

How concerned is your organisation about the following when it comes to adding EVs to its fleet? (% Somewhat Concerned OR Very Concerned, N=135)

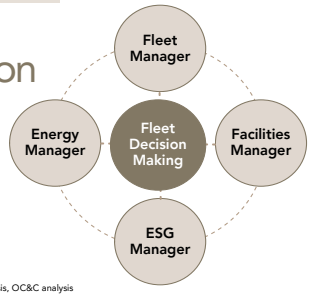


Source: Fifth Quadrant Australian Fleet Insights Research 2024 Survey, OC&C analysis

1. Stakeholder Collaboration

The "Four Body Problem" represents an emergent disconnect between corporate sustainability stakeholders

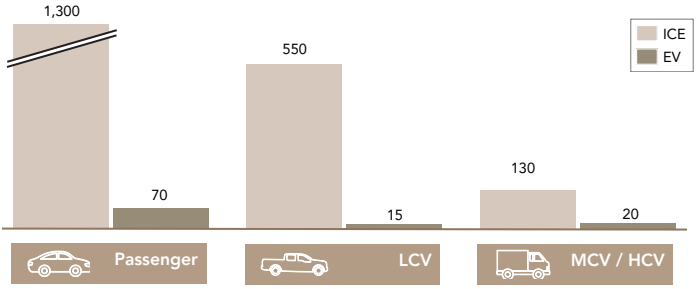
Where fleet managers are no longer the sole or primary decision makers of vehicle strategy and procurement - rather one of many stakeholders required to collaborate on scale, pace, procurement, and management of the EV transition.



Source: Fifth Quadrant AfMA 2023 EVs in Business Fleets Survey, CarLoop Market Experience & Analysis, OC&C analysis

2. Fit For Purpose Supply

Despite increasing model availability, few are truly 'fit-for-purpose'. With many new LCVs, MCVs, and HCV options under-specified relative to ICE payload and towing, for example.



Increasing spectrum of passenger options at different price points. With equal specs, in many cases...

...whereas the increasing pipeline of EV LCVs have sufficient range in many cases, but few with sufficient payload.

Source: Carloop, OC&C analysis 2024

3. Infrastructure

While 'at home' and simple depot charge solutions are being rolled out, significant growth is still required in high-capacity depot or high speed en-route charging

Lack of Power Capacity

Fewer than 20% of installed charging stations are **fast- or ultrafast-technology** (250-350kW+ HVDC), that can deliver benchmark charge times of c.15-20mins

Lack of En-Route Options

Public access networks are primarily urban and slow-fast charging technologies. Limiting both **regional and high milage,** and **time constrained (e.g. logistics)** end-user application

Remote and regional power networks

Remote and regional locations face additional challenges with **energy access and security.** Industries that depend on public networks may be required to co-invest in network infrastructure upgrades or wait until regulated network owners act

4. Finance and TCO

Further to the challenges and costs of "fit for purpose" fleet and infrastructure, finance costs and residual value are proving especially difficult for TCO economics. Given turnover of first-gen EVs, uncertain battery life and recycling, and declining price curves

Financing a Hybrid / Electric Vehicle vs Equivalent ICE…

…Will be charged a higher interest rate…	+c.4-6%[1] *Interest Rate Premium*	Increasing both upfront and TCO, relative to ICE
…requiring a larger initial down payment…	+c.20%[1] *Down Payment Delta*	Increased hurdle rate for investment
…with less time to amortise payments	-c.5%[1] *Shorter Borrowing Period*	

1. Based on c.130k loans to EVs (EV, HEVs & PHEVs) and c. 7.8m loans to ICEs issued from 2010-21 to US/EU consumers – comparison between same make/model and adjusted for borrower, lender & market-specific characteristics

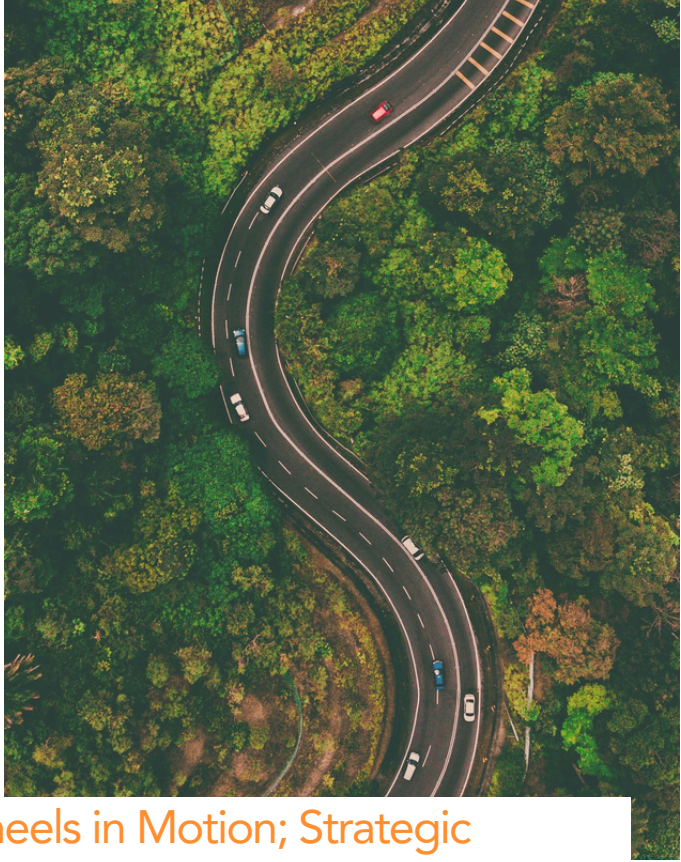
Source: Financing the Global Shift to Electric Mobility (Bena, Bian & Tang 2023), OC&C analysis

5. Aftermarket Services

Increasing availability and reliability of service, maintenance and repair for new technologies are critical to minimising productivity loss, thus reducing EV TCO.

Lack of EV Technicians	c.60% *of EV Technicians roles are unfilled*	Inability to repair driving, leading to **premature EV write-offs**
Limited Upskilling of ICE Technicians	c.10% *of ICE technicians have been certified for EVs*	Long repair **times increasing productivity opportunity cost** of transitioning to EV

Source: Australian Automotive Service and Repair Authority, Motor Trades Association of Australia



Wheels in Motion; Strategic Initiatives to *Close the Gap*

The five barriers to adoption are significant and require integrated system wide solutions. We see a range of low capital and low risk initiatives that fleet managers and other stakeholders can action to begin the journey.

Innovation from across the Globe

Hop On-Board - leveraging on-board telematics and data to measure EV readiness

- Geotab has partnered with SBB.AG to integrate its fleet telematics solutions into c.100 vans and SUVs operating across Switzerland
- GeoTab's advanced tracking technology and EV Suitability Assessment tool enables SBB.AG to strategise, prioritise, and business case its vehicle fleet transition
- The EV Assessment tool leverages GeoTab's on-board telemetry to measure vehicle dynamics and performance, driver behaviour, towing and load, power output and range, and other environmental conditions to identify the vehicles primed for EV substitution or adaptions required to make EVs viable (scheduling, load and towing distribution, re-routing and map optimisation, smart charging, maintenance planning, etc.)

Swap and Go – battery swapping technology for light commercial, last mile fleet

- Mitsubishi Fuso, Yamamoto Transport, and Ample have partnered on a battery swapping trial of the Fuso eCanter light truck, in Kyoto, Japan
- Yamamoto - having committed to operate 20k light commercial EVs by 2030 – will operate the eCanter as part of its last mile delivery fleet and swap batteries en-route at Ample stations, with a swap time of 5 minutes. This replicates the refuelling time of traditional ICE vehicles, and will help to overcome key EV adoption challenges - fleet uptime and productivity, battery lifecycle and financing, and TCO economics
- Mitsubishi aims to commercialise the battery swap variant of the eCanter in time, which would significantly improve the charge time over the current plug-in eCanter available today, including in the Australian market

Share the Load – smart charging solutions to mitigate grid limitations

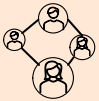
- Global logistics company UPS has partnered with Moixa and UK Power Networks Services to electrify 170 delivery vans at its Camden depot
- The Cross River Partnership project requires EV conversion of the bespoke UPS delivery van, Moixa battery hardware, 'GridShare' smart charging software, and grid connection and management via UKPN Services
- UPS' unique operating model sees all vehicles depart and return to base concurrently. Moixa's GridShare technology leverages fleet data (for example, vehicles, parcel load, driver dynamics) in combination with external sources (energy prices, grid demand, weather) to optimise EV charging, and mitigate slow and costly upgrades to the London grid.

Initiatives for Fleets and FMOs...

1. Leverage data to evaluate and scope the transition

The emerging "say-do gap" highlights the urgency of the EV transition. ~70% of surveyed fleet managers expect EVs to become mainstream (in fleets) by 2030-35. Yet, c.60% state they are "not at all" or "moderately" prepared.

The first step is getting to grips with the problem. c.40-45% of the 400+ fleet managers are using integrated FM and business analytics tools for performance analysis, utilisation and route optimisation, predictive maintenance, inventory management - all of which can help to inform the scope and challenges of the EV transition. Yet this leaves more than 50% of the market are in the dark.



2. The "Four Body Problem" - collaboration beyond FM

Across the 300+ fleet managers surveyed, c.50% are prioritising fleet emissions as a sustainability initiative and c.25% are planning to act in the next 12 months. However, our experience with FM organisations indicates that 'human factors' are acting as near-term barriers, even more so than technology and economics.

The "Four Body Problem" describes the disconnect that has emerged between existing and new stakeholders in the fleet transition (refer to page 15). Overcoming these disconnects can begin with the creation of EV transition policy and strategy, guiding principles and governance structures, cross-functional teams, project/pilot working groups. Fleet managers remain crucial in the setting of these new rules of engagement and decision making.

3. De-risk the transition with partners and pilots

More than 70% of fleet managers are concerned about the EV transition. With most still unsure of 'fit for purpose', range, cost and complexity of charging.

This correlates directly with the c.70% of fleet managers that remain in the early exploratory phase (analysing, business casing, piloting, or not acting at all. C.30% are beyond the pilot phase and have begun planning.

For those that remain at the starting blocks, there are a range of actions that will get the ball rolling in a low capital and low risk way - engaging dealers, OEMS and FMOs, develop a limited EV pilot, leveraging public charging infrastructure, evaluating grant funding options, revising lease terms and tenure, for example.

4. Leverage infra expense into new revenue generation

Cost and complexity of depot charging is the number one concern amongst fleet managers in the transition to EV, which will become more and more acute as the transition evolves from passenger vehicles to LCV, MCV, and heavy vehicles.

But what if a high-complexity, high-cost challenge could be turned into a revenue generation opportunity? Integrated energy solutions that combine grid power with on-site generation, battery storage, and smart charging can significantly reduce cost, time, and dependence on local utilities. Whilst opening the door to new revenue streams including feed-in-tariffs for returning energy to the grid, ancillary energy market revenues, and innovation and/or grant funding.

... and other Stakeholder Opportunities

Auto OEMs

Early engagement and localised learnings

OEMs are key to catalysing adoption, not only through supply, but also via transfer of global experience into local markets.

Including proactive engagement with customers to co-design pilot programs, short-term lease agreements to trial limited stock models, increased transparency on model development and specifications to enable pipeline planning, fast-tracking of proven platforms from advanced EV economies, and supporting driver education & familiarisation via training days and demo events.

Finance and Insurance

Advanced analytics and customised policies

FMs, financiers, and insurers will need to find favourable risk sharing arrangements to address high upfront costs, immature used markets, uncertain residual values, and higher write-off rates.

Agreeing the balance of risk between these three key players is no easy feat, but global innovations point to potential solutions. Including telematics and mileage-based insurance for more accurate risk assessment and policy personalisation, ADAS and advanced battery analytics for in-life maintenance and post-crash diagnosis, policy carve-outs for battery and charger replacements/repairs, and OEM collaboration on parts and spares supply chains.

Charging Providers

Service models over hardware sales

Integrated charging hardware, software, and services will enable accelerate adoption of commercial EVs, beyond pilot scale adoption.

Charging infrastructure providers can support FMs and collaborate with energy companies to map energy demand, optimise charging load profiles, and integrate smart charging software to reduce upfront capital cost and mitigate power grid constraints. Providers can also boost confidence by offering bundled and financed packages that include design, installation, maintenance, software and uptime SLAs to amortise costs, simplify operations, and transfer risk.

Utilities and Retailers

Accelerated access and tariff innovation

Network operators and retailers will be central to enabling access and unlocking capacity, and creating tariff certainty whilst allowing vehicle-to-grid innovation.

Power utilities can support the transition through network planning aligned to adoption forecasts and capitalising depot upgrades as augmentation. Retailers can innovate tariff structures to reward off-peak and flexible charging, collaborate with charging providers on bundled 'charging-as-a-service' solutions, and leverage global lessons on vehicle-to-grid innovations.

OC&C Strategy Consultants

OC&C Strategy Consultants is an international consulting firm, with more than 35 years experience of unpicking the most complex business challenges with simple, uncommon sense™.

Our specialists work with some of the biggest global players and national names across a broad range of automotive sub-sectors and are highly regarded for developing strategies that are creative, sometimes provocative, always practical and, above all, actionable.

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Fifth Quadrant

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Carloop

Carloop is Australia's #1 data platform, providing essential data and analysis to support professionals across the entire EV ecosystem, driving informed decision-making and fostering a sustainable future. This includes industry-leading EV forecasting, charging infrastructure rollout datasets, EV OEM insights, EV market growth trends, light and heavy vehicle transition planning and more.

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