

CO₂ Research Overview



July 2022

Confidential

To decarbonise the light vehicle sector in the most efficient and effective way in the Australian context

Overview – S&P Global Research

To assist in building FCAI's evidence-based policy development we commissioned research from S&P Global (previously IHS Markit)

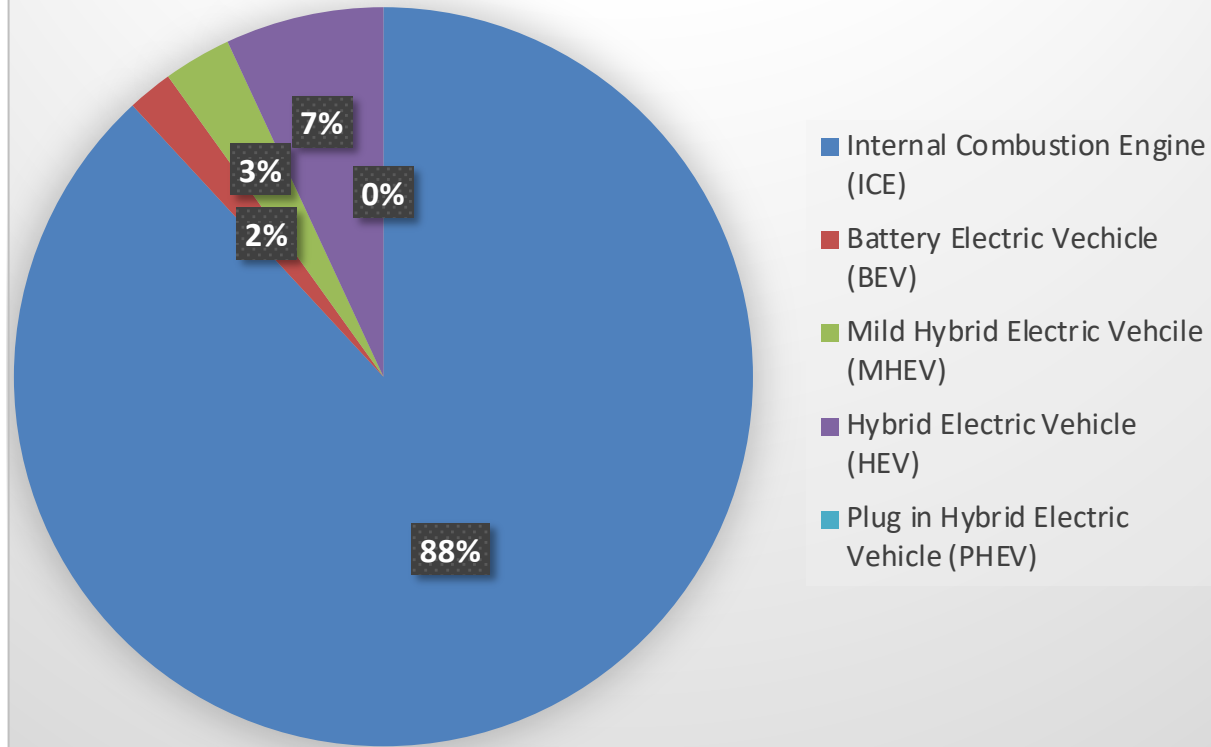
1. Global Regulation Library
2. Overview of Global OEM Strategies
3. Price Volume Analysis 2021 vs 2030
4. Sales based Powertrain Forecast to 2033
5. Charging infrastructure requirement 2025 & 2030

Goal

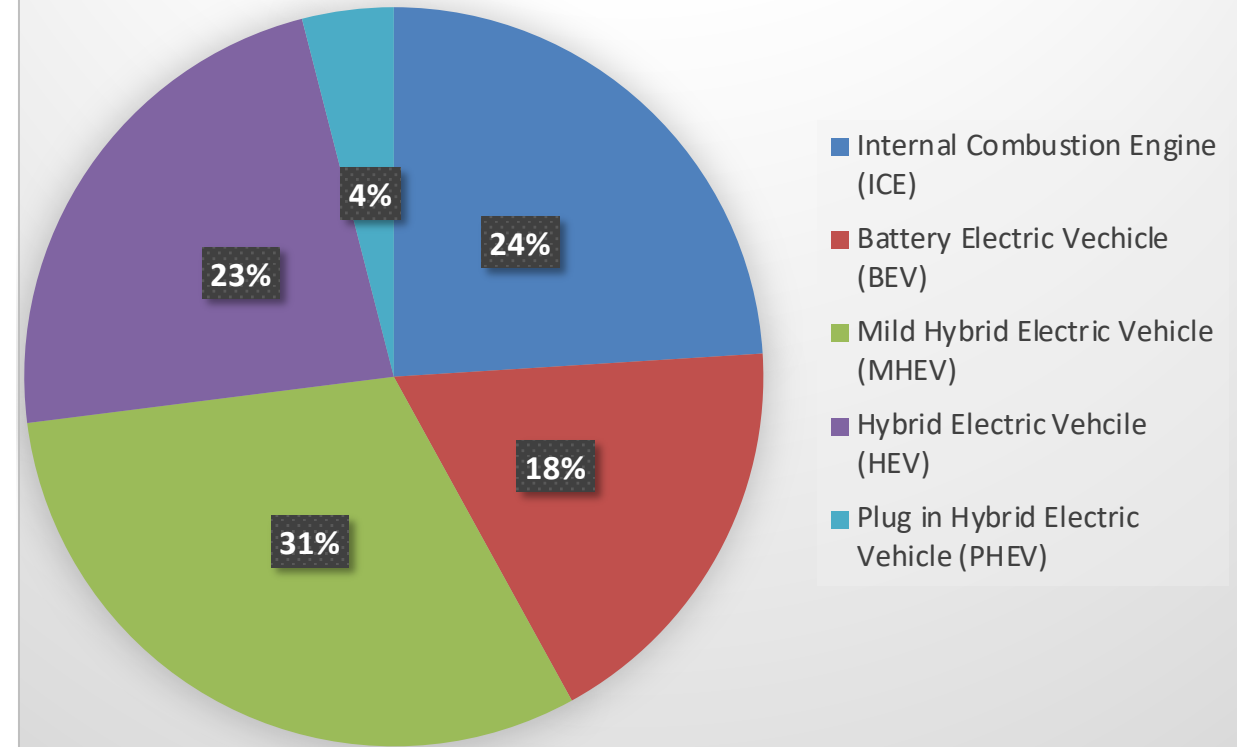
- Inform on how and when products are expected to be developed and sold in Australia with no change in policy.
- Provide insight into the impact of various policy options in Australia.
- Assist with the negotiation of a legislated mandatory CO₂ standard appropriate for Australia.

Starting Point - Australian Market 2021 vs 2030

Total Industry Volume (TIV) by Propulsion System Design in 2021

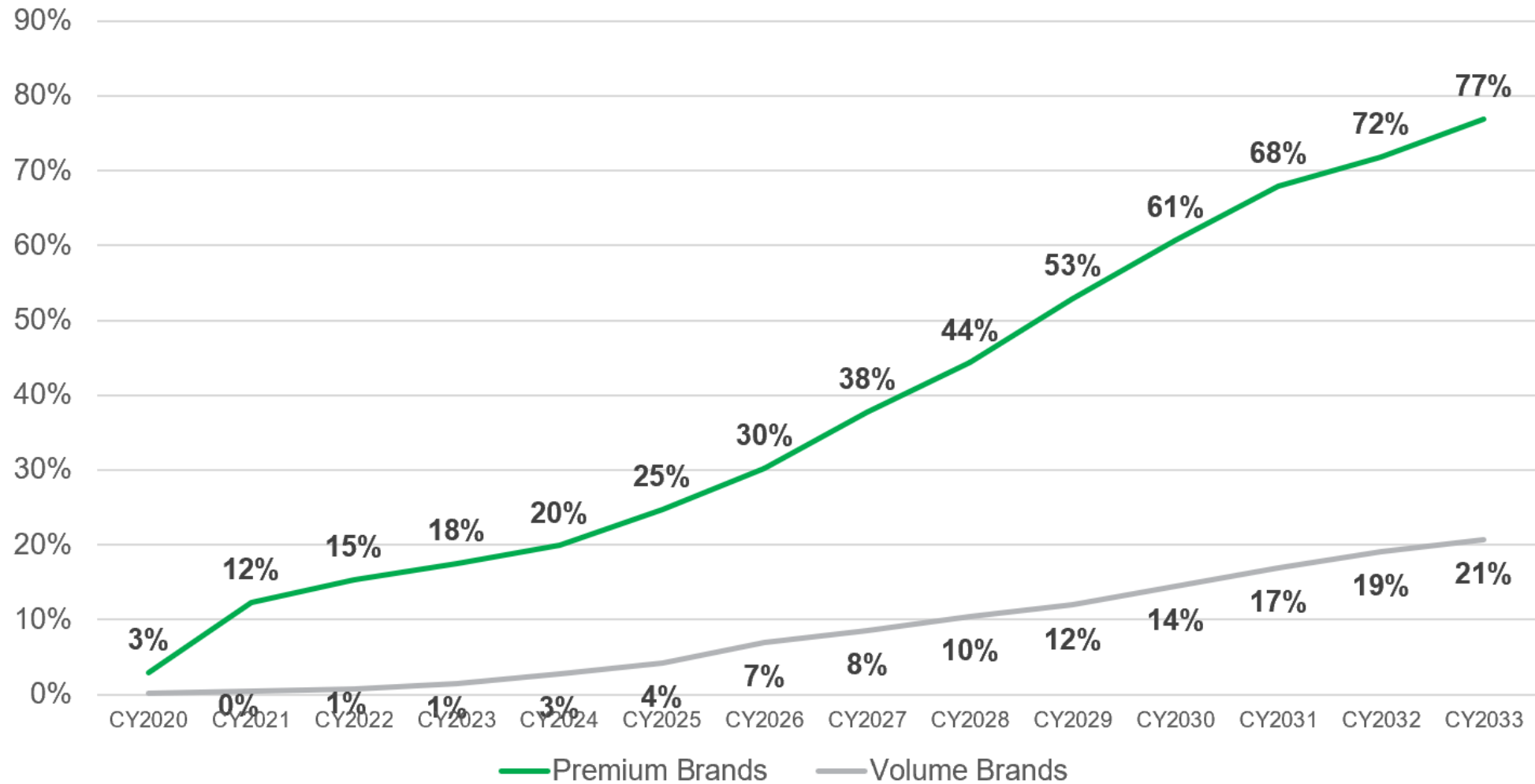


Total Industry Volume (TIV) by Propulsion System Design in 2030



Top line results – OEM Strategies – Premium vs Volume

BEV Sales Share by Brand Image

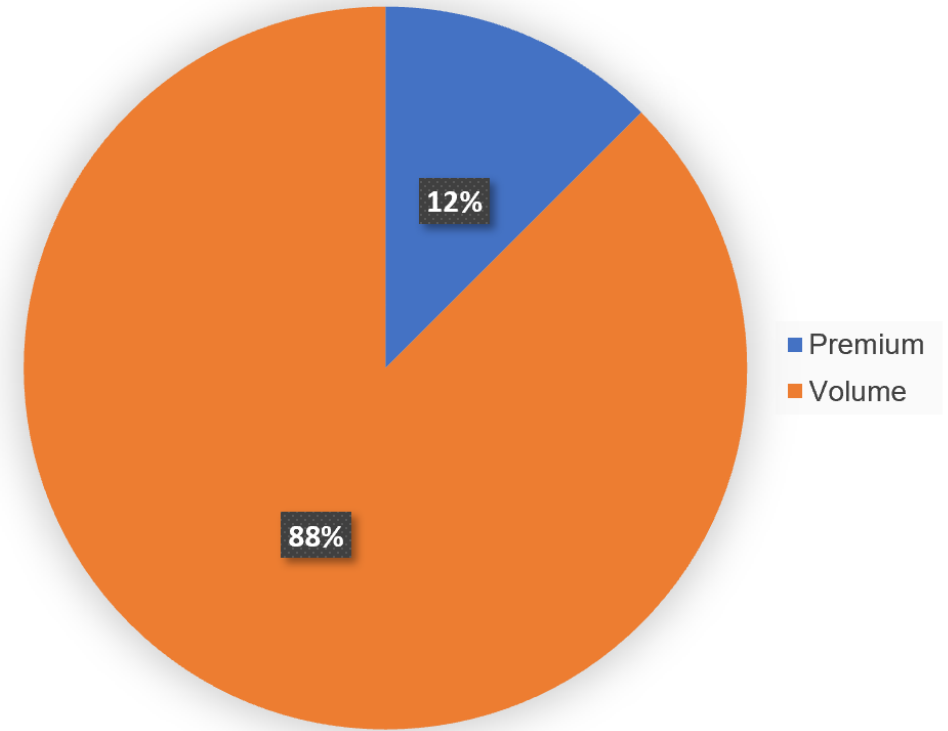




Top line results – BEV Growth Rate 2030 to 2033

BEV % share of Aust	2030	2033	% Growth in 3 years
Premium Market	61%	77%	26%
Volume Market	14%	21%	50%
Total Market	18%	25%	39%

Market Split Premium Vs Volume 2021



Top line results – BEV by Market Segment 2030 and 2033

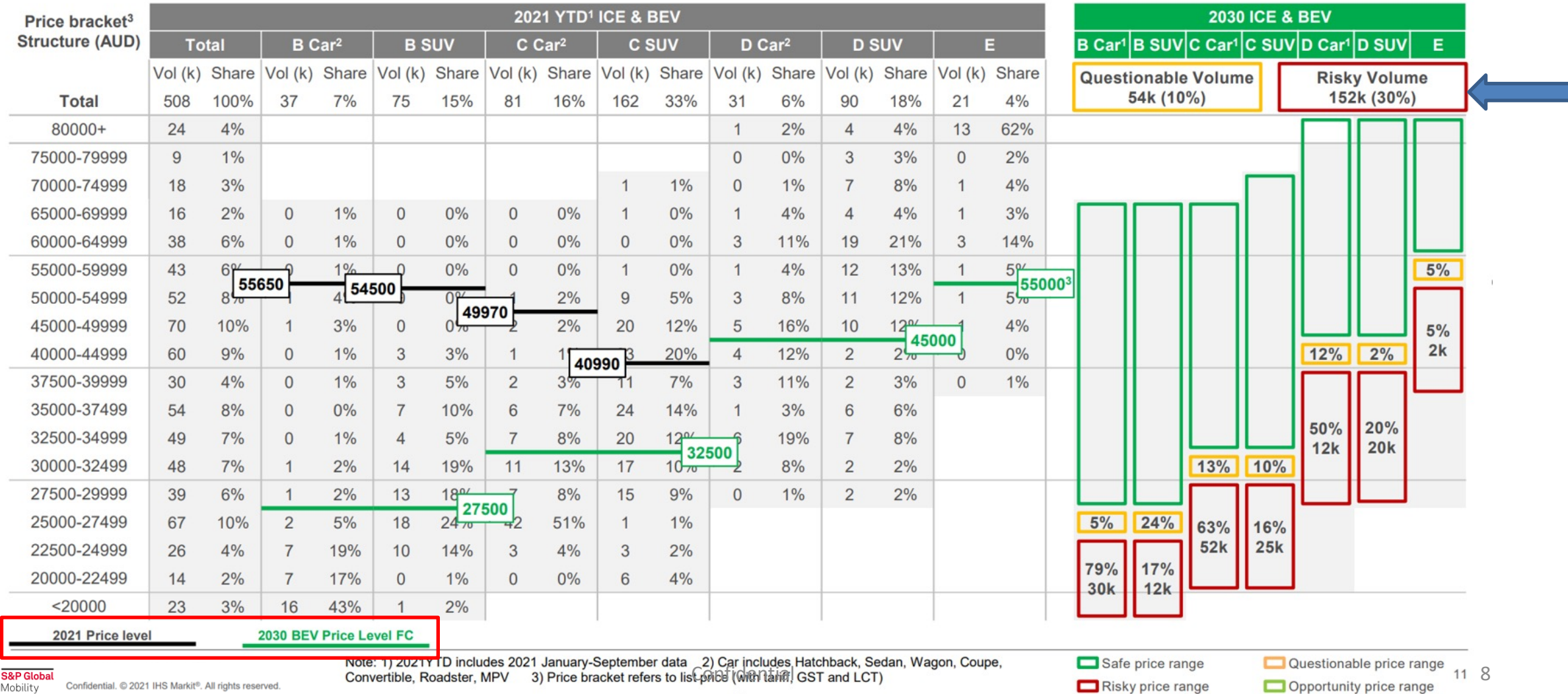


BEV % share of Segment	Premium		Volume	
	2030	2033	2030	2033
Passenger Motor Vehicles 22% of 2021 total market Split (Premium 21%MS) (Volume 79%MS)	63%	85%	14%	22%
SUV 53% of 2021 total market Split (Premium 15% MS) (Volume 85% MS)	59%	72%	15%	21%
Light Commercials 25% of 2021 total market Split (Premium 1%MS) (Volume 99% MS)	-	-	1%	2%



Volume Brand BEV Vehicle Pricing 2021 vs 2030

- 100% BEV mandate 2030 – at least 30% of volume brand customers purchase price increases by ~\$8,500 to \$17,000 for entry model



Case Study – Midsize Car and SUV Volume Segment



PMV

2021	2030
ICE Entry Price <\$20,000	ICE Entry Price <\$20,000
BEV Entry Price \$49,900	BEV Entry Price \$32,500
97% of sales under BEV Price	76% of sales under BEV Price

- The price of an entry BEV midsize car will **decrease by \$17,400** between 2021 and 2030
- If 100% BEV mandate was put in place 76% of midsize car customers would need to increase budget by up to \$12.5k

SUV



2021	2030
ICE Entry Price \$20k to \$22.5k	ICE Entry Price \$20k to \$22.5k
BEV Entry Price \$40,900	BEV Entry Price \$32,500
59% of sales under BEV Price	26% of sales under BEV Price

- The price of an entry BEV midsize SUV will **decrease by \$8,490** between 2021 and 2030
- If 100% BEV mandate was put in place 26% of midsize SUVs customers would need to increase budget by up to \$10k



Premium Brand BEV Vehicle Pricing 2021 vs 2030

- The premium market may not face strong volume issue if introducing strict electrification strategy before 2030; with around 10% of the volume expected to be influenced

Price bracket ³ Structure (AUD)	2021 YTD ¹ ICE & BEV														2030 ICE & BEV										
	Total		B Car ²		B SUV		C Car ²		C SUV		D Car ²		D SUV		E		B Car ¹	B SUV	C Car ¹	C SUV	D Car ¹	D SUV	E		
	Vol (k)	Share	Vol (k)	Share	Vol (k)	Share	Vol (k)	Share	Vol (k)	Share	Vol (k)	Share	Vol (k)	Share	Vol (k)	Share	Vol (k)	Share	Vol (k)	Share	Vol (k)	Share	Vol (k)	Share	
Total	92	100%	1	1%	1	1%	9	10%	22	24%	22	24%	15	16%	21	23%	Questionable Volume 6k (6%)		Risky Volume 5k (5%)						
120000+	14	15%					0	1%	0	0%	1	6%	1	7%	1	5%									
115000-119999	2	2%							0	0%	0	1%	1	2%	1	6%									
110000-114999	3	4%					0	2%	0	0%	0	2%	1	8%	2	7%									
105000-119999	2	2%					0	2%	0	0%	0	1%	0	1%	1	5%									
100000-104999	2	3%					0	3%	0	0%	0	1%	0	2%	2	7%								14%	
95000-99999	2	3%					0	0%	0	1%	0	0%	0	3%	1	7%									
90000-94999	3	3%					0	5%	0	1%	0	1%	1	3%	1	6%									
85000-89999	4	4%					0	2%	1	4%	0	1%	2	15%	1	3%									
80000-84999	5	5%					0	1%	0	1%	3	15%	1	8%	0	2%									
75000-79999	5	6%					0	0%	0	0%	2	7%	2	12%	0	1%								15% 2k	
70000-74999	10	11%					1	10%	1	6%	5	21%	3	17%	0	1%									
65000-69999	8	8%					1	9%	3	14%	2	7%	2	14%	0	0%								14%	
60000-64999	7	7%			0	10%	0	5%	4	17%	1	5%	1	6%	0	1%								6%	
55000-59999	14	15%					2	20%	5	21%	5	21%	3	12%											
50000-54999	3	4%			1	48%	0	1%	3	12%															
45000-49999	5	6%	0	14%	0	15%	2	24%	3	12%															
40000-44999	2	3%			0	27%	1	15%	1	3%															
<40000	1	1%	0	86%																					

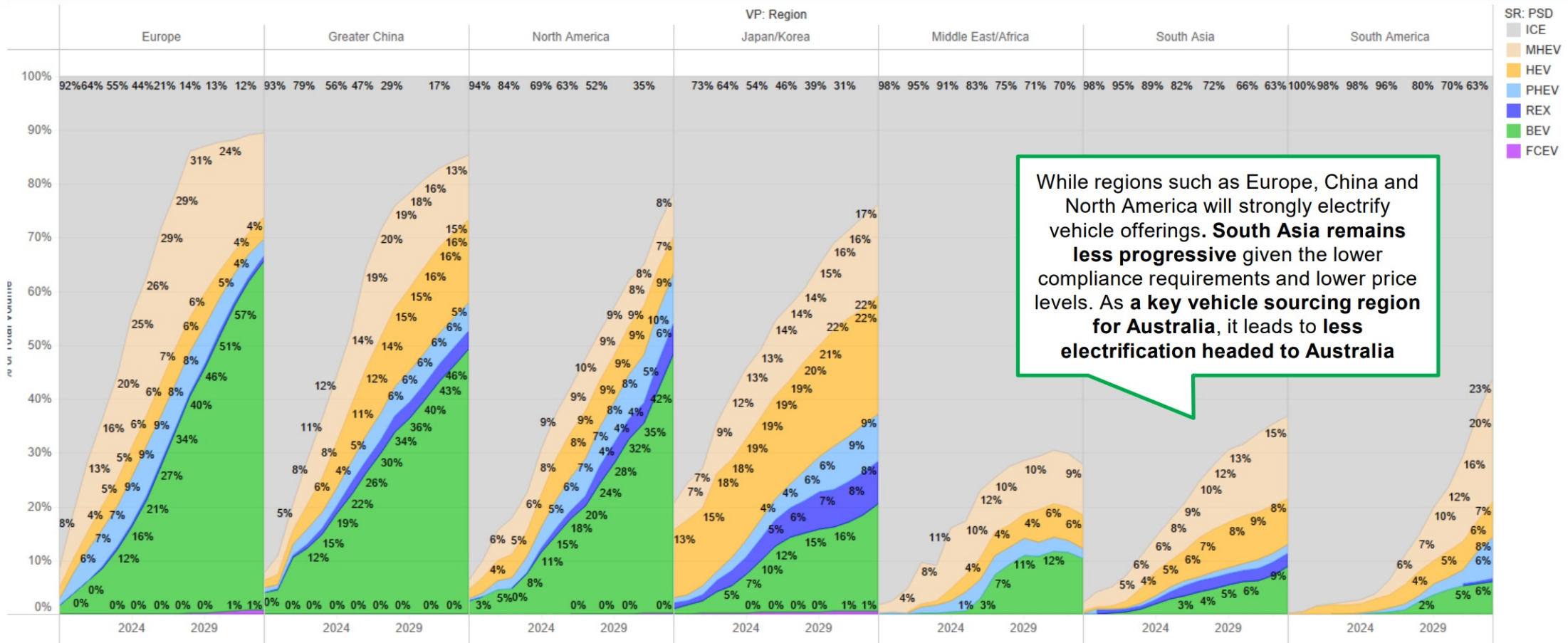
2021 Price level

2030 BEV Price Level FC

Regional Production – insights for Australia (RHD/LHD)

- The pace of electrification will differ by region

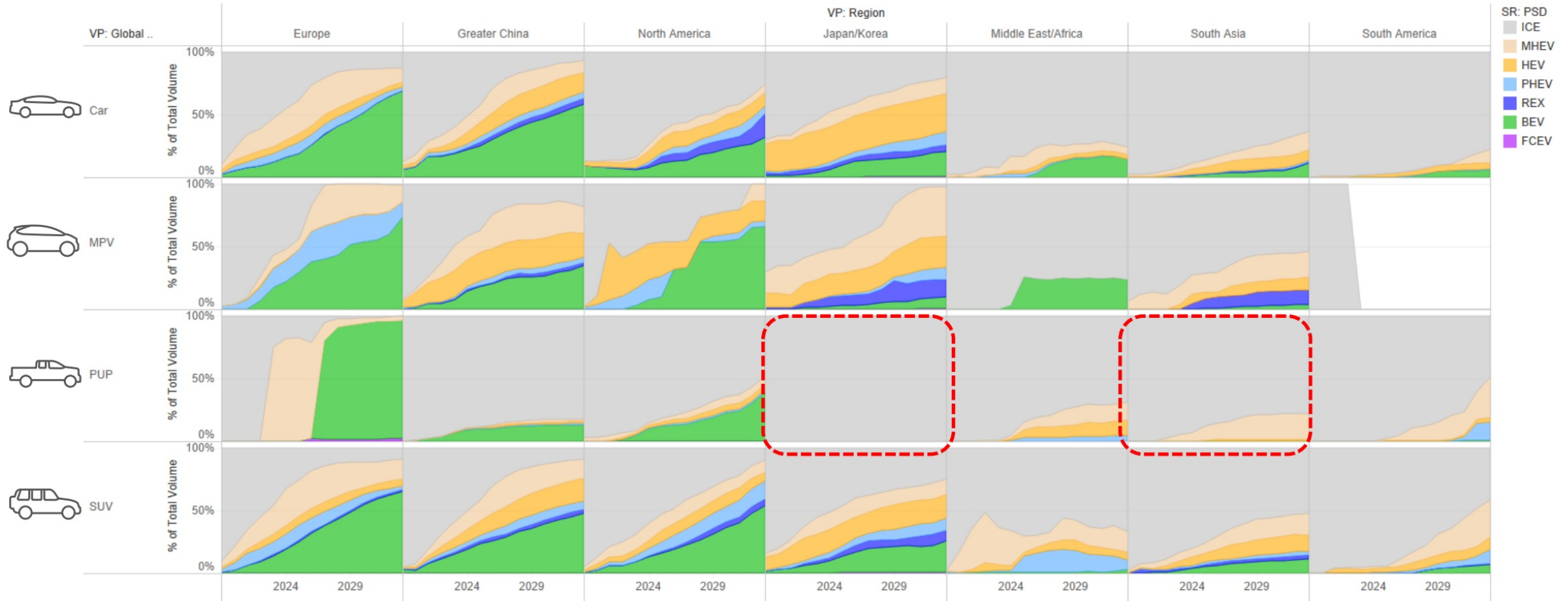
Global Powertrain Production Evolution by Propulsion System Design by Region (2019-2033)



Source: IHS Markit Powertrain Production Forecast October 2021 - (Passenger Car incl. LCV)

Regional Production by Segment relevant to Australia

Global Powertrain Production Evolution by Propulsion System Design by Region and Sub-Segment (2019-2033)

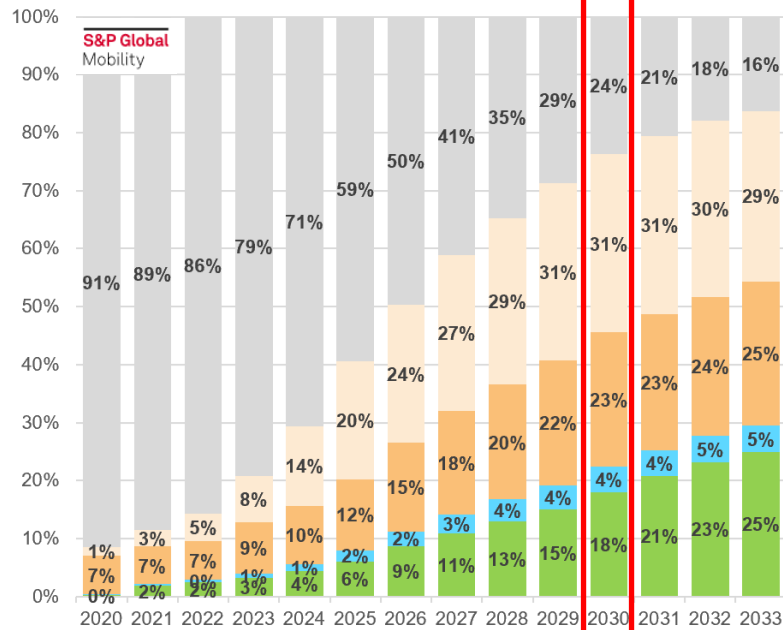


Source: IHS Markit Powertrain Production Forecast October 2021 - (Passenger Car incl. LCV)

Top line results – Total Industry Volume by Powertrain share

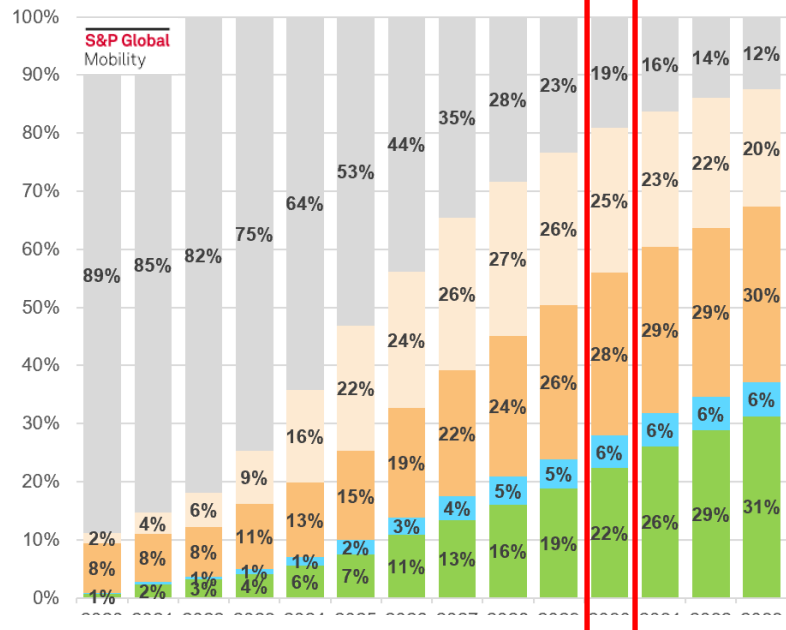
- **Total Car & Ute** - Independent from regulations, global electrification strategies will push down the pure ICE share to 59% in 2025 and 24% in 2030. At the same time, the BEV sales share will have the potential to grow to 18%.
- **Passenger cars** - Attractive BEV offers among are expected to drive the BEV sales share to 22% in 2030, along with additional 6% PHEVs for specific use cases. However, the leading PSD in 2030 will be HEV.
- **Utes** – Given the low regulatory pressure the RHD C-segment utes are expected to remain an ICE market with MHEV & HEV emerging over the forecast timeframe

TIV Sales by PSD, Sales Share



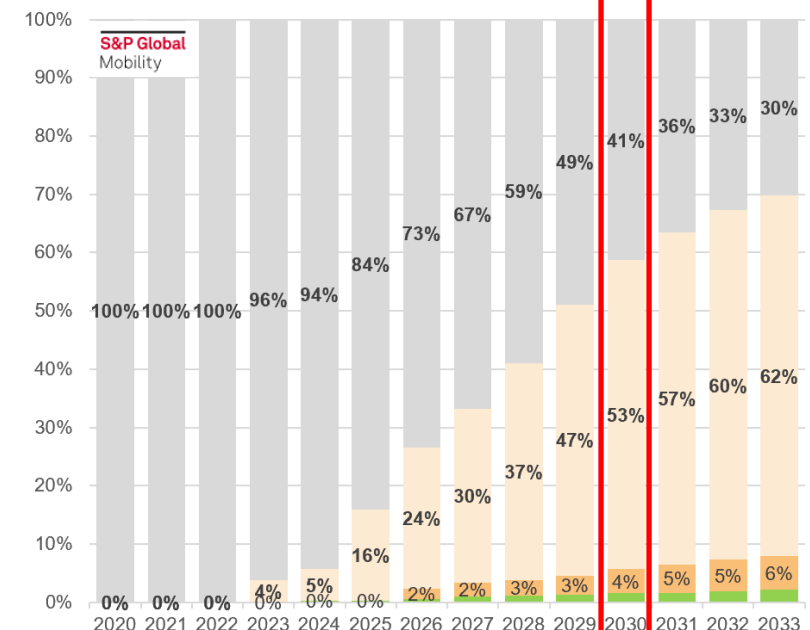
2030 Total Industry Volume 1.06m
BEV 191k (18%)

Passenger Car Sales Shares by PSD



2030 PMV and SUV 835k
BEV 184k (22%)

Pick-up Sales Shares by PSD



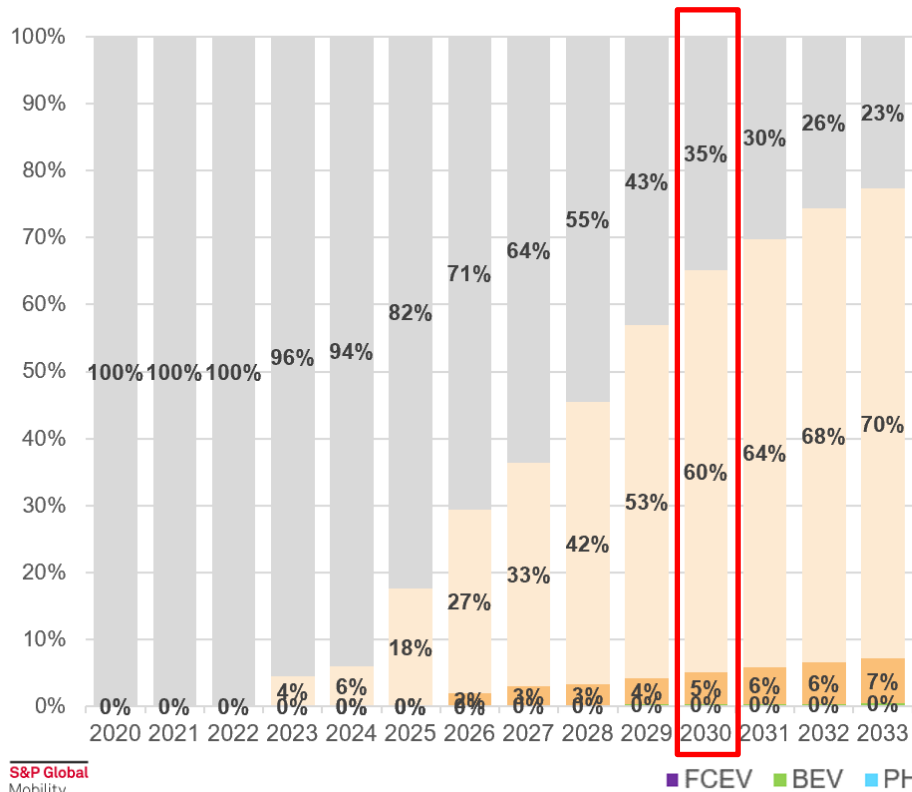
2030 Ute 220k
BEV 2.6k (1.18%)



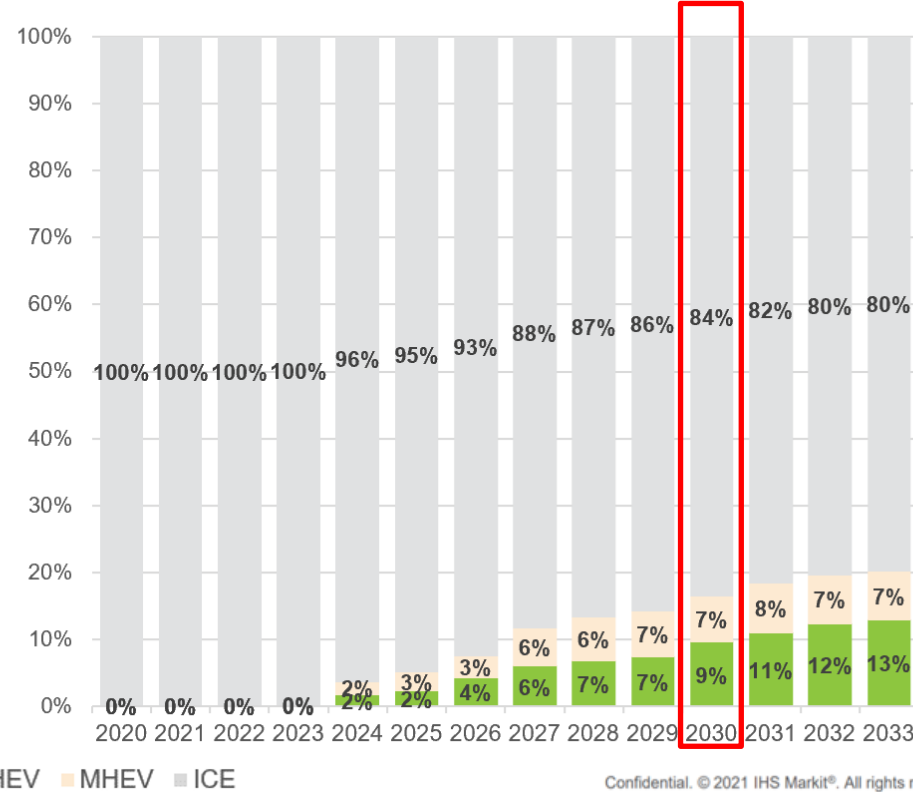
Top line results – Mid Size Utes vs Large US Utes

- **Utes** – USA D segment utes expected to get BEV versions with low volume high price RHD conversions likely to be offered in Australia. C segment midsize utes likely to get hybrid versions but BEV very unlikely by 2033.

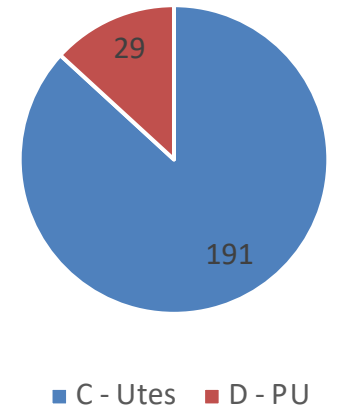
C-Segment Pick-up Sales by PSD



D-Segment Pick-up Sales by PSD



Ute MS 2030



S&P Global
Mobility

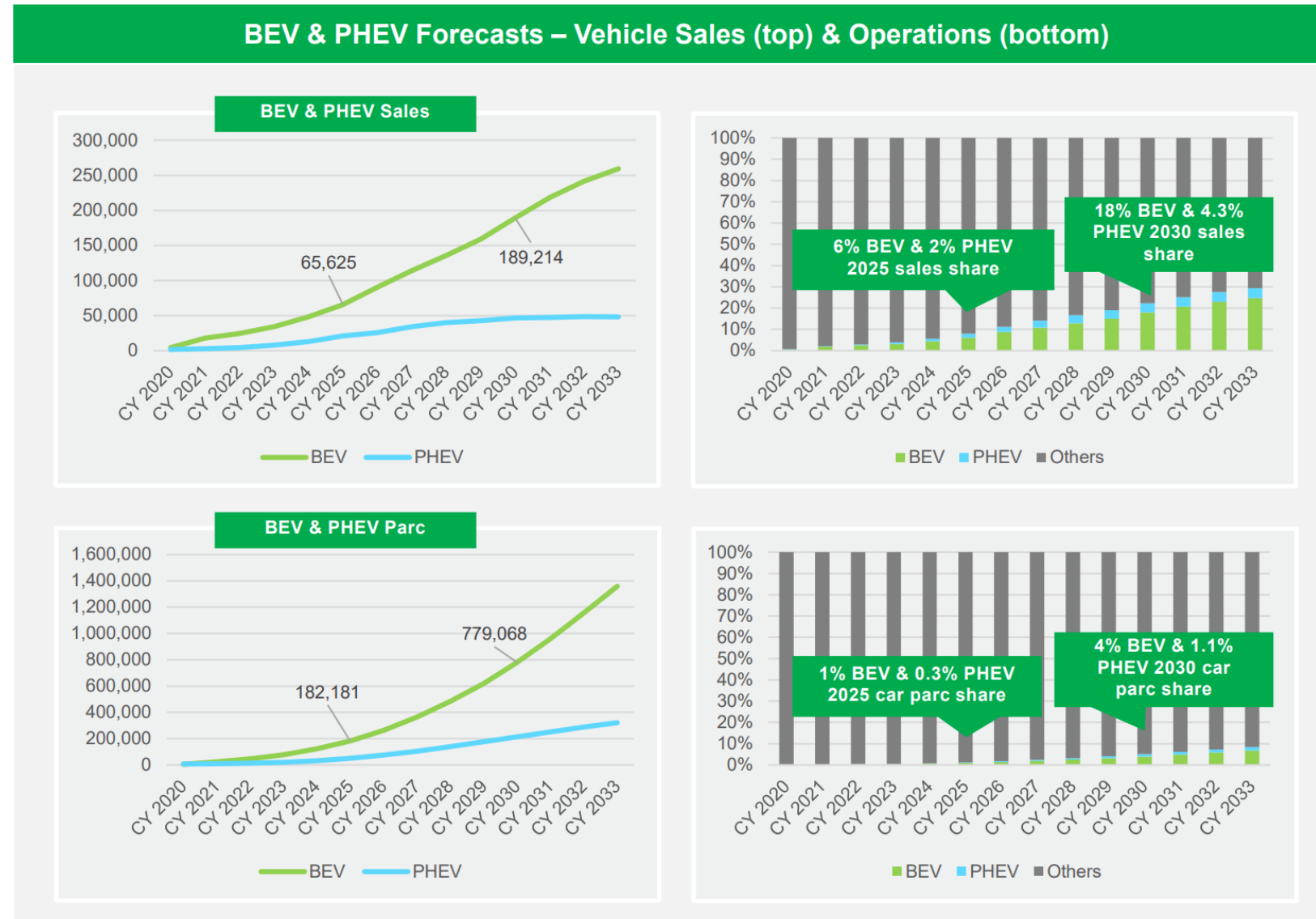
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2030 total Mid Size Utes 191k
0 BEV

2030 total Large US Utes 29k
2,610 BEV

Top line results – Charging Infrastructure

- S&P Global found, based on the powertrain forecast, that
 - In 2025, 177k home chargers and 6.8k public / semi-public chargers are needed.
 - In 2030, 724k home chargers and 25.8k public / semi-public chargers are needed.



FCAI Policy Objectives

- Nationally consistent/Federally led vehicle CO₂ policy
- Implement a **mandatory new car CO₂ regulation** inline with the FCAI voluntary standard.
- Seek ZLEV policy including **obtaining incentives** in the following order:
 1. Public charging and hydrogen refuelling
 2. Fleet and Private charging and hydrogen refuelling
 3. Non-financial ZLEV incentives (access to transit lanes, free parking, free charging)
 4. Mandated government fleet ZLEV procurement targets
 5. Purchase Incentives
- Accelerate the adoption of world class, international **fuel quality** standards