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EVs - Damned if you do, damned if you don't

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Agenda



- 1) EVs – Why are the degrees of commitment and success so different?**
- 2) Car Wars – A product pipeline review indicates extreme overshoot**
- 3) Who Makes the Car – EV vs ICE component cost delta is extreme**
- 4) Core to Future – Surviving the uncertainty**

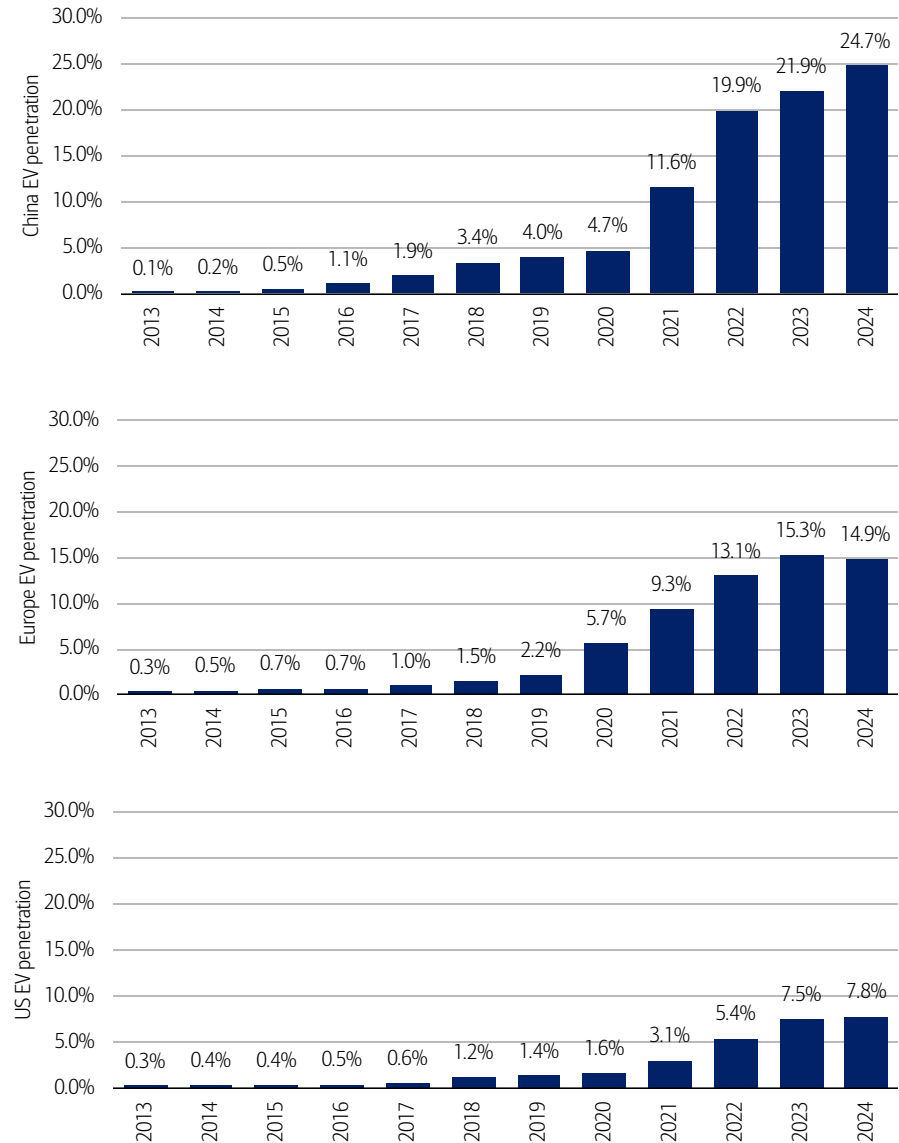
1) EVs - Why are the degrees of commitment & success different?



China: Policy is focused on the industrial logic of driving globally competitive Chinese automakers, and to a lesser extent the impact on the environment

Europe: Knee jerk response to the catastrophe of diesel-gate, which was driven by the informed regulatory regime as it was Volkswagen

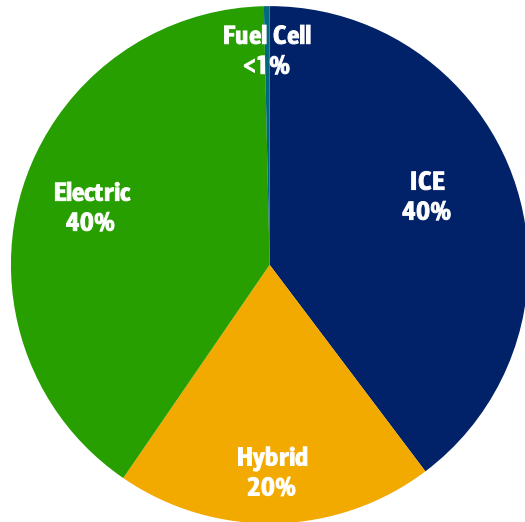
United States: Focused on the environment with a carrot and stick approach => IRA incentives, CAFE standards, CARB ACC II, but consumers still not biting much



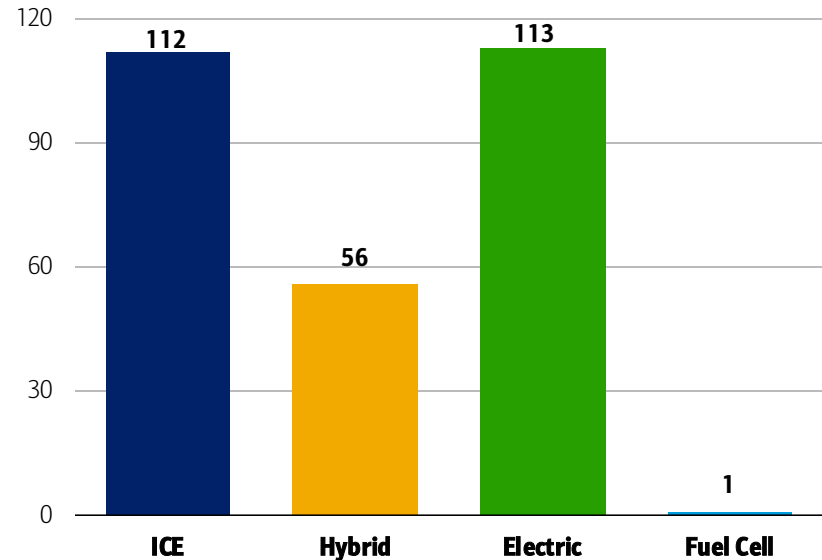
2) Car Wars – EV model launches get pushed out*



Nameplate offerings by powertrain type ^[1]



Number of nameplate offerings by powertrain type

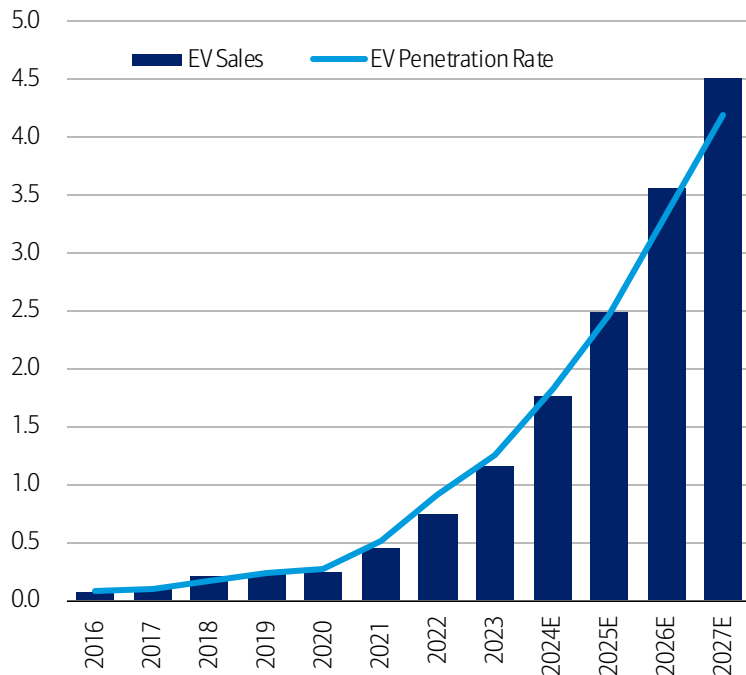


Tallying up the powertrain offerings across all the new model nameplates over MY2025-28, we estimate roughly 60% will be some alternative powertrain variant (hybrid, electric, fuel cell), down from 64% last year. Nevertheless, it is clear from our analysis that the advent of alternative powertrain vehicles is here, but at a slower pace than many have been anticipating.

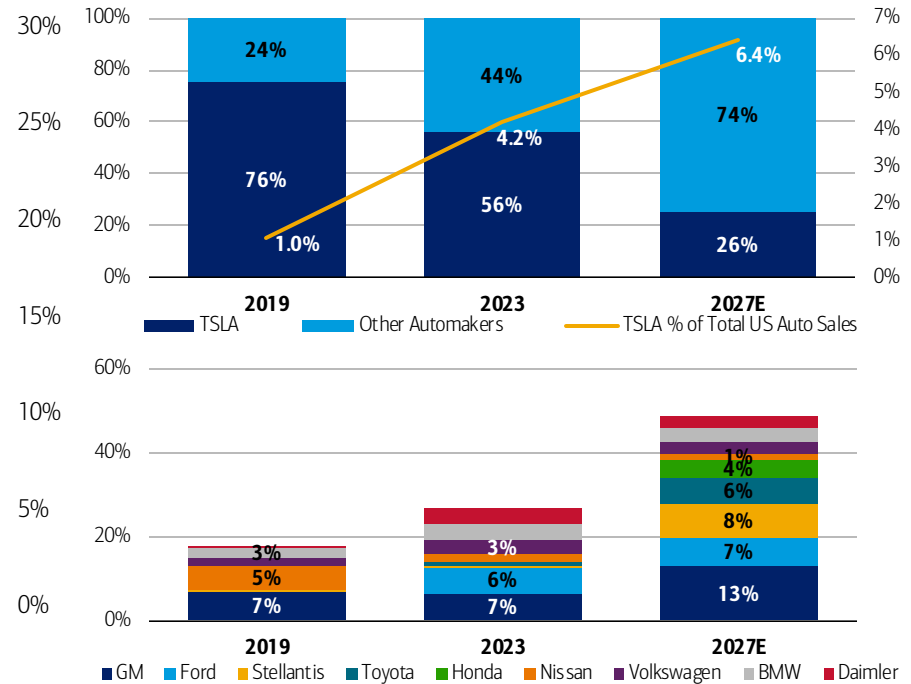
2) Car Wars – EV penetration plan was to ramp materially*



Bottoms up EV penetration estimates



EV market share implications



We use our Car Wars analysis and assumptions to derive a Bottoms up forecast around EV volumes and EV penetration, which points to potentially ~1.8mm EVs sold in CY2024 (MY2025), ~2.5mm in CY2025 (MY2026), ~3.6mm in CY2026 (MY2027), and ~4.5mm in CY2027 (MY2028), or EV penetration of ~11% in 2024, ~15% in 2025, ~20% in 2026, and ~25% in 2027. Our projections indicate that Tesla is set to cede share of the EV market, while GM, Stellantis and Honda are set to gain the most.

3) Who Makes the Car – ICE vs EV component systems

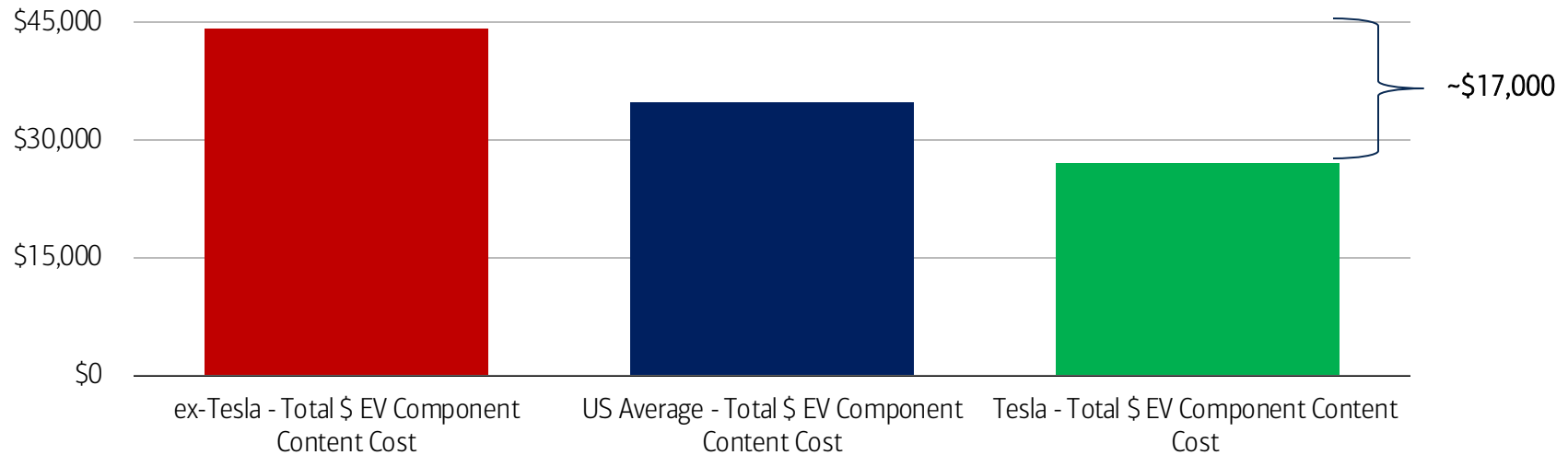


	<u>Global Traditional ICE Vehicle (A)</u>	<u>US ICE Vehicle - Increased in line with RPU (B)</u>	<u>Average \$ Revenue per Unit</u>	<u>US Battery Electric Vehicle (C)</u>
Average \$ Revenue per Unit	\$31,922	\$44,557	Average \$ Revenue per Unit	\$55,338
Component Content Cost			Component Content Cost	
Steering	\$420	\$590	Steering	\$590
Passenger Restraints	\$380	\$530	Passenger Restraints	\$530
Exhaust	\$335	\$470	Exhaust	\$0
Wheels & Tires	\$345	\$485	Wheels & Tires	\$485
Body Glass	\$155	\$215	Body Glass	\$215
Interior	\$1,480	\$2,070	Interior	\$2,070
Body & Structural	\$3,325	\$4,655	Body & Structural	\$5,585
Suspension	\$650	\$910	Suspension	\$910
Axles, Driveshafts & Components	\$1,060	\$1,485	Axles, Driveshafts & Components	\$1,115
Climate Control & Engine Cooling	\$850	\$1,190	Climate Control & Engine Cooling	\$1,670
Audio & Telematics	\$415	\$580	Audio & Telematics	\$815
Fuel System	\$415	\$580	Fuel System	\$0
Braking	\$515	\$720	Braking	\$1,120
Transmission	\$1,695	\$2,375	Transmission	\$0
Engine	\$3,350	\$4,690	Engine	\$0
Electronics & Electrical	\$2,385	\$3,340	Electronics & Electrical - Traditional	\$3,340
			+ EV Electrical Architecture	\$1,325
			Total Electronics & Electrical	\$4,665
			+ Electric Motor/Drive/Transmission	\$1,200
			+ Power Electronics/Other	\$1,520
			+ Battery Cell/Pack	\$12,235
Total \$ Component Content Cost	\$17,775	\$24,885	Total \$ Component Content Cost	\$34,725

3) Who Makes the Car - Tesla's component cost significantly lower



2023e Material cost per electric vehicle: Tesla vs average EV vs average EV ex-Tesla

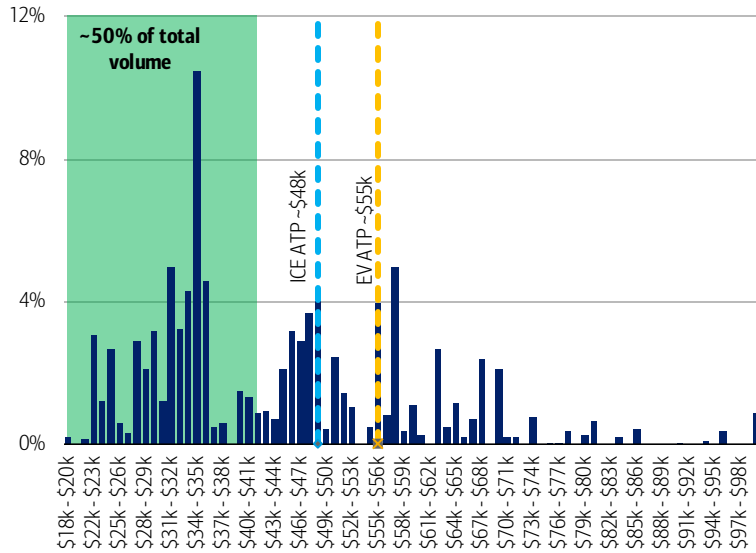


From our analysis, Tesla's component cost appears to be significantly lower than the average US EV component cost. Other EV manufacturers (ex-TSLA), on average, show significantly higher material costs for their vehicles.

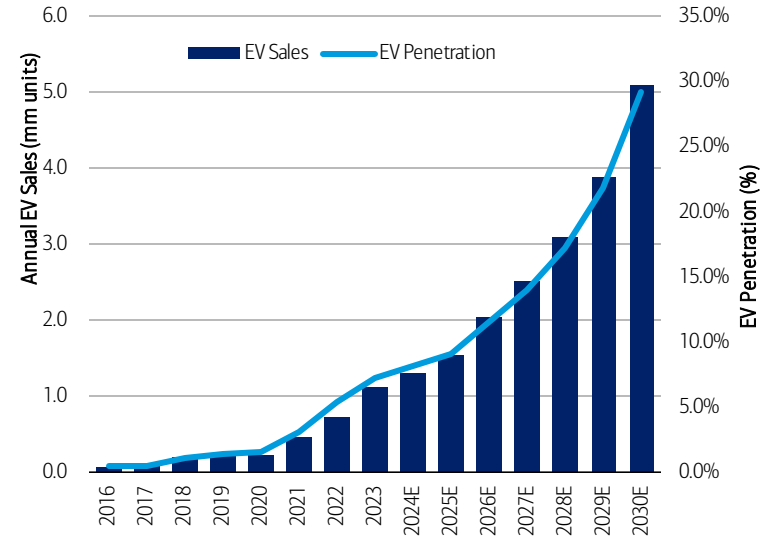
3) Who Makes the Car – US EV penetration forecast



US vehicle sales (% of total units) by ATP - \$000s



US EV penetration & volume forecasts 2024-2030E



Accounting for our assumptions that in the short-term OEMs have few economic incentives to ramp EV production despite a potential demand driven by lower prices, we estimate that EV penetration will inch higher from 2024 (~8%) to 2027 (~14%) without major breakthroughs. However, after 2027 we see EV penetration to accelerate and end our projection in 2030 at 29% of the market.

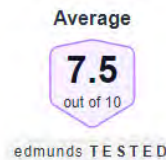
4) Core to Future – Consumers generally satisfied with vehicles



#1: Ford F-150



#2: Chevy Silverado



#3: RAM 1500



#4: Toyota RAV4



#5: Tesla Model Y



#6: Honda CR-V



#7: Toyota Camry



#8: GMC Sierra



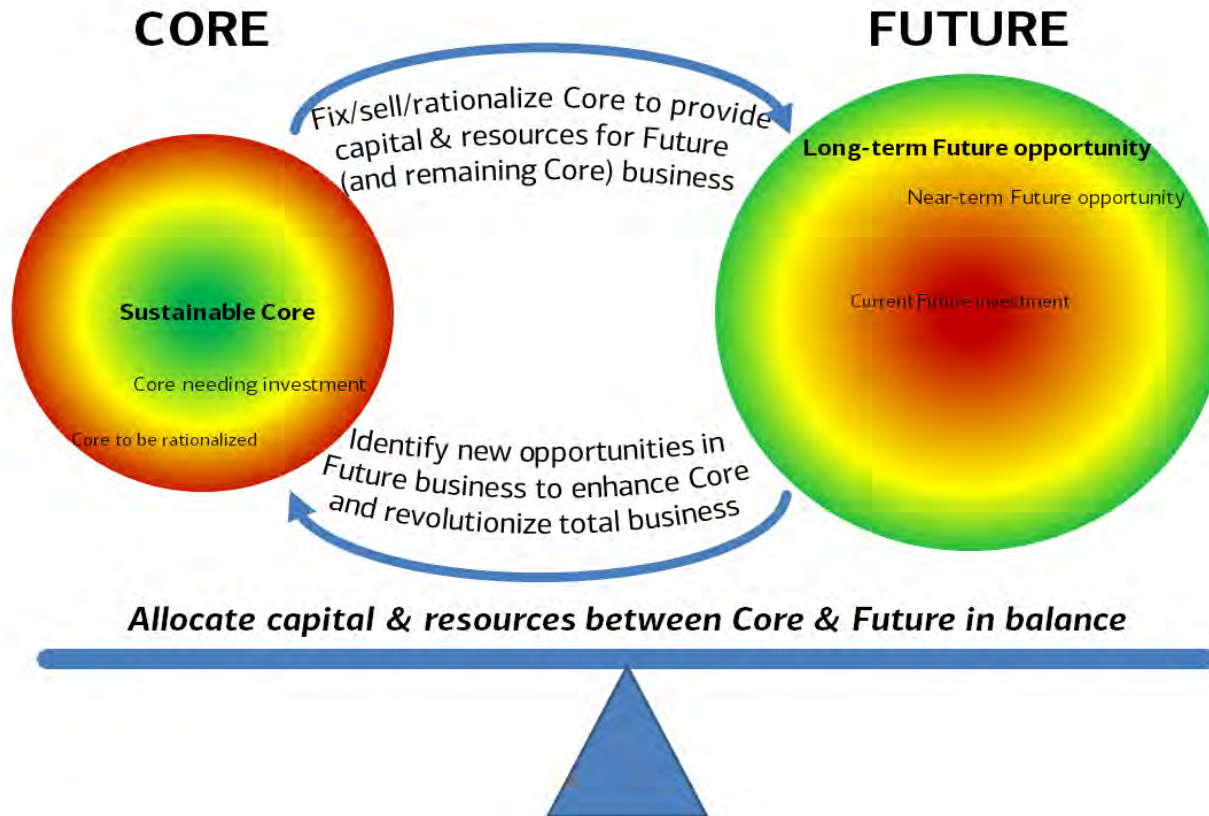
#9: Nissan Rogue



#10: Jeep Grand Cherokee



4) Core to Future – Managing the transition is critical



Ongoing industry mega-trends, namely the evolution towards vehicle electrification, autonomy, and connectivity, are substantially increasing investment burdens for the automotive value chain. In our view, the three main sources of capital to fund the industry evolution will be: i) internally sourced capital (via Core to Future transactions), ii) externally raised capital, and iii) government sourced capital.

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