








































# Auto OEM EV Battery Strategy (JV & Partnerships)

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Major Auto OEM		EV Battery providers/partners	EV Battery JV
 Toyota	<b>CATL</b> 	<b>Panasonic</b> 	
 Volkswagen	<b>CATL</b>  LG Chem  <b>SAMSUNG SDI</b>	 国轩高科 <b>northvolt</b>	
 Tesla	<b>CATL</b>  LG Chem	<b>Panasonic</b>	
 GM	<b>CATL</b>	 LG Chem	
 Ford	<b>CATL</b>  LG Chem  <b>SAMSUNG SDI</b>  <b>SAFT</b>		
 Mazda	 ELIY Power <b>UBE</b>		
 Hyundai	<b>CATL</b>  <b>LISHEN</b>	 LG Chem	
 Honda	<b>Panasonic</b>	<b>CATL</b> 	
 Nissan	<b>CATL</b> <b>SUNWODA</b> 欣旺达  EDF	<b>NEC</b>	
 BMW	<b>CATL</b>  LG Chem <b>northvolt</b> <b>SAMSUNG SDI</b> <b>EVE</b> 亿纬锂能		
 Daimler	<b>CATL</b>  LG Chem  <b>SAMSUNG SDI</b>	 FARASIS 孚能科技 Farasis Energy	
 Fiat Chrysler FIAT CHRYSLER AUTOMOBILES	 LG Chem <b>SAMSUNG SDI</b>		
 PSA GROUPE	<b>CATL</b>  LG Chem 	<b>SAFT</b>	
 Renault	<b>CATL</b>  LG Chem <b>SUNWODA</b> 欣旺达 <b>LISHEN</b>		

# Nuances of EV Battery Strategy of Auto OEMs



- **Multivendor approach:** Auto OEMs are following multi-vendor approach for EV battery management. As this field is still evolving in terms of technology development, so OEMs are keeping their options open. Also, in many cases OEMs have their own R&D units in battery management, so they are also collaborating with the EV battery manufacturers to explore different paths. For example, Volkswagen previously faced supply bottlenecks that slowed its electric vehicle production plans and now it wants to secure future supply and bring down the overall costs of Lithium-Ion batteries.
- **Aligned to future goal:** In many cases, EV partnership for the OEMs is not only securing battery supply. This is associated with the long-term goals of overall EV strategy and sustainability goal. For example, Tesla is collaborating with CATL to make a battery that can last more than a million miles.
- **Localization strategy:** As a part of close partnership, in some cases EV battery manufacturers are establishing manufacturing facilities in the same/nearby geography of the OEMs, which is quite beneficial for the OEMs as the length of the supply chain is minimized. For example, LG Chem opened manufacturing facility in Poland to cater to European and international OEMs including Volkswagen.
- **Vehicle model specific procurement:** OEMs are also collaborating with the EV battery manufacturers for vehicle-specific battery development. For example, Ford collaborated with LG Chem for dimension-specific battery development
- **Focus on specific KPIs:** The overall objectives of battery development are range, charging speed, battery life etc.
- **Partnership with educational institution:** Educational institutions are also accelerating the EV journey of the OEMs. For example, Kyoto University and Toyota test 1,000 km per-charge EV battery. University breakthrough in second-life use for Nissan EV batteries.
- **Geography specific partnership strategy:** We have also observed geography-specific partnership particularly in China. For example, BYD will supply batteries to support Ford's electric vehicle production in China.
- **Focusing on raw materials:** Some large OEMs are even focusing on mining to secure the constant flow of the raw materials of the battery. For example, Volkswagen and Daimler are pushing for more 'sustainable' Chile lithium.
- **Partnership among OEMs:** Auto OEMs are also collaborating to accelerate EV development. For example, General Motors and Honda announced an agreement for new advanced chemistry battery components, including the cell and module to accelerate both companies' plans for all-electric vehicles.

# Thank you



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