

HEVs Already an International Trend, With China's Electric Cars Moving Towards Diversification, Says TrendForce

2019-08-01 [Duff Lu](#).

Thanks to China's new point-based quota system for new energy vehicles and the enlarging scale of European, American and Japanese markets, opportunities in the HEV market have attracted much interest. [EnergyTrend](#), a division of [TrendForce](#), predicts that global HEV market share will reach 5% in 2019, whereas that for pure electric vehicles will stand at only 2%.

“The Chinese government announced a new point-based quota system in June that ascribes a far greater significance to HEVs.” says TrendForce Senior Research Manager Duff Lu. “HEVs were originally just seen as traditional vehicles in China and were not eligible items for credit accumulation. But under the new system, HEVs now possess market value in the form of points. On the other hand, Volkswagen has also declared that it will be introducing HEVs among its mainstream models in 2020, allowing the cell industry to extend its grasp beyond mid-high end cars and towards a wider public audience. While electric vehicles still have to overcome the infrastructure hurdle of populating an environment with charging stations, an affordable array of HEVs have already been introduced in the traditional vehicle sector.”

HEVs can currently be divided into two major categories: Mild/micro hybrid vehicles, mainly European; and strong hybrid vehicles, mainly led by Japanese car manufacturers. An examination of developments in various countries reveals that the HEV market is mainly driven by the fact that emission laws are growing stricter by the year. For 48V mild hybrid vehicles, we see Europe en route to impose full-scale a strict limit of 95g/km for carbon dioxide emissions from 2020 to 2021, especially on the widely sold, mainstream intermediates.

Due to Europe being rather late in adopting HEVs and being at a disadvantage in terms of patents and costs, they've turned to micro/mild hybrid designs, which are predominantly gasoline cars with fewer modifications, in order to meet the most basic demands of emission standards while keeping the cost of power system modification under control. HEV power systems are already entering mainstream models.

Meanwhile, Japan focuses on full hybrid vehicles. Japan will be forming a market mainly consisting of products from strong hybrid vehicles to plug-in HEVs (PHEVs), thanks to having begun development early and allowing total car cost to remain in the middle ranges. Furthermore, Japanese car manufacturers have slowly turned from NiMH batteries to Lithium batteries amid falling battery prices. The improvement in whole system of charging stations also incentivized the partial introduction of strong hybrid systems into PHEVs.

Fuel-saving rates have also attracted the interest of China in recent years, with the Chinese government planning to reduce average fuel consumption from 6.9 to 5 L/100km in 2015-2020, and new energy vehicles will become a key to satisfying these demands on fuel consumption and emissions. China has long been developing new energy vehicles, their interest guided by subsidies and mainly centered on pure electric vehicles. TrendForce thinks that HEVs will become the main car model in European, American and Japanese markets, with growth speed surpassing that of pure electric cars. Whether China may be able to catch the HEV trend with its new social credit system will also be worth observing in 2019-2020.

HEVs Cell Usage Grown by Nearly 50%, with Car Manufacturers Prioritizing Lithium Batteries

Looking at battery systems, although some car manufacturers have already developed 12V or 48V micro hybrid systems, the 48V design is further able to support mild hybrid systems. Battery designs reserve the 12V battery for use and switch to 48V batteries when loads increase, due to AC compressors, for instance. HEVs may use lead-acid batteries and lithium batteries for voltage systems over 12V, with lead-acid batteries being the cheaper but more space-consuming option. TrendForce observes that most car manufacturers will prioritize the usage of Lithium batteries for voltage systems over 12V to accomplish light-weight designs. As HEVs continue to grow,

total HEV battery usage (Lithium and NiMH batteries; 12V SLA batteries are not included) will grow to 10.68GWh, a growth of 49% YoY.

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