Micro EVs, e-Bikes, e-Scooters, e-Motorbikes, Mobility for Disabled 2016-2026

Description: Small manned electric vehicles - e-bikes to car-like micro EVs - are closely related and often sell in the largest numbers. The rag bag of names obscures the fact that they are closely related and add up to a very large market. Although car-like micro EVs are usually lower in cost than regular cars, together with two wheel EVs, they will reach over $33 billion in 2026. Eight sub-categories are forecasted by numbers and value from 2016-2026. Golf cars are seen to be a static market, whereas e-motorcycles are at a very early stage and the others in different stages of maturity. Nearly all are pure electric using batteries as energy storage. Most are on-road vehicles so the commonality shines through.

These manned small vehicles below cars are uniquely significant in addressing megatrends and in pioneering energy independent, unlimited travel. Mobility vehicles for the disabled cope with the ageing of the population and the epidemic of obesity whereas car-like micro EVs help emerging nations be mobile and prevent air pollution. Many of these small electric vehicles act as the missing affordable transition product between an e-bike and an e-car. However, they also fill market gaps everywhere, including in developed countries where they help the small manufacturer and, often in customised form, they perform many tasks in airports, estates and elsewhere.

Micro EVs are not required to meet crash tests and other requirements of car homologation. In some countries, minors and those with no license or insurance can drive them. Embracing quad bikes, all-terrain vehicles, Neighborhood Electric Vehicles (NEVs), quadricycles in Europe, microcars and so on, they are much simpler than cars and often one tenth of the price. Micro EVs take the form of three wheelers in the main with many four wheelers. They include farmers' "cars" in China, e-tuktuks in the Philippines, where 3.2 million polluting tuktuk taxis need replacing, and e-rickshaws in India.

The extreme lightweighting possible with these micro EVs means they are among the first categories to spawn energy independent vehicles (EIVs) that never plug in or fill up. So far, that mostly involves solar cells that are a load-bearing part of the body. This is "structural electronics" replacing the old "components-in-a-box".

In 2026, e-scooters will dominate the small electric vehicle business followed by three-wheel micro EVs. Close behind, four wheel car-like versions and e-bikes are also set for robust sales. The basis of this unique report, putting the much vaunted e-bikes in the context of allied vehicles, is mainly research in 2015. Intensive global travel, interviews and analysis were carried out by PhD level experts. Latest conference material and presentations from across the world are shown.

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