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# **ELECTRIC CARS AND FUTURE OUTLOOK**

**CASE STUDY/INSIGHT**

## ELECTRIC CARS AND FUTURE OUTLOOK

Sustainable living becomes the driving force of the planet. Thanks to the technological advancement that created awareness among people. Transportation is one of the significant contributors to air pollution, especially road transport which accounts for about 72% (by the end of 2019).

Now, we try utilizing the technology to bring down the pollution to possible extent by using electric vehicles. Although the first electric car was introduced around 1890, 21st century paved the way for sophisticated electric cars.

Elon Musk's electric vehicle Tesla in 2008 played a crucial role in bringing up the market of electric vehicles after the historical surge in gasoline combustion engines. Yes, the world Battery Electric Vehicles (BEV) stock was around 4.8 billion by the end of 2019. The top market share for electric car sales, was held by Norway which was approximately 46%, holding a huge margin against the second leading market shareholder, Iceland.



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But the electric car infrastructure development around the world still needs greater attention. Though the leading competitor in market sales is Norway, the charging station infrastructure is far better in China worldwide. China contributes around 52 % of the total installed charging stations.

One of the significant hurdles in EV is the charging speed and charge withstanding capacity. Slow charging stations and fast-charging stations are available today, but fast-charging stations are scarce. Precisely, China is the only country that provides abundant fast-charging stations, i.e., around 82 % of the world's fast charging stations.

Although slow charging is claimed better for the battery life, practically fast charging is more viable. Today, recent advancements are more focused on battery efficiency and technology. Recently battery production in the range of 3 to 8 Giga Watt-hours per year (GWh/year) is typical worldwide.

By 2025, it is anticipated that batteries will increasingly use cathode chemistries that are less dependent on cobalt and Lithium Nickel Manganese Cobalt Oxide (NMC) or advanced batteries like Lithium nickel cobalt aluminium oxide (NCA).

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The challenges faced by the Electric cars market are their high cost, lack of infrastructure development for charging stations, stagnation in battery technology and battery capacity. The critical aspect that makes the consumers think that the electric vehicles lag on is the duration of the charge in the car and the available driving range. But, the research and technological advancements make the EVs achieve a better range in their driving mileage that reach up to 400 by two pioneers Tesla and Chevrolet. Meanwhile, the fastest-growing Electric vehicle manufacturer is Volkswagen. Several EV manufacturers are coming up worldwide, which paves the way to a more sustainable future.

Source: IEA, IRENA, etc.

