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CONSIDERATIONS FOR HYBRIDIZING INTERNAL COMBUSTION ENGINE SECONDARY VEHICLES

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ABSTRACT: As of 2021, most of the world's cars are still powered by internal combustion engines (ICE). However, the share of electric vehicles (EVs) is growing rapidly as governments and automakers around the world aim to reduce greenhouse gas emissions and dependence on fossil fuels.

KEYWORDS: International Energy Agency (IEA), electric vehicles, global vehicle fleet, China, the US.

INTRODUCTION

According to the International Energy Agency (IEA), electric vehicles accounted for about 4.6 percent of global vehicle sales in 2020, up from 2.5 percent in 2019. The IEA also estimated that there will be around 10 million electric cars on the world's roads in 2020, which at the time would represent less than 1% of the global vehicle fleet.

The EV share is expected to continue to grow rapidly in the coming years due to lower battery costs and increased government support for electric mobility. Some countries, such as Norway, have achieved relatively high EV adoption rates, with electric vehicles accounting for more than 50% of new car sales in Norway in 2020. Other countries such as China, the US and many European countries are also seeing rapid growth in the adoption of EVs.

By the end of 2022, there will be more than 1.45 billion cars in the world, of which about 1.1 billion will be passenger cars. This means that there is one car for every 7.18 people on the planet, and the world population is now over 8 billion. In 2021, just 80 million, or 7 percent, of the 1.45 billion vehicles on the world's roads were produced in the previous 12 months, up 3 percent from 78 million in 2020, but well below the pre-pandemic peak of 97 million in 2018 low.

THE MAIN FINDINGS AND RESULTS

Growing concerns about reducing CO_2 impacts and eliminating vehicle operating costs have prompted automakers to pave the way for the electric vehicle (EV). Currently, electric vehicles are widespread in the field of transportation. However, the development of EVs and related technologies is still ongoing, making it a great research area for many automakers and researchers in the field. As current trends show, many car manufacturers have set a plan that EVs could soon replace the internal combustion engine (ICE) in cars. For this reason, the automotive sector has recently witnessed a major shift towards electrification of vehicles. Since the beginning of EV development, the basic structure of the vehicle has gone through different stages of development compared to the basic conventional layout. Most automotive companies today are looking to

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develop EVs that consider efficiency, affordability, and size as design criteria. The most striking change in the structure of vehicles during electrification was the drive system. Thanks to the latest innovative technologies used in the automotive industry, several companies have managed to introduce a unique solution to the most difficult aspects of EV development.

Currently, more than 3 million vehicles are registered in Uzbekistan, 89% of which are passenger cars. The domestic car market is estimated at 2.6 billion US dollars, which is about 5% of Uzbekistan's GDP.

In the last 5-10 years, the number of cars is growing significantly. For example, the number of cars per capita is 90 cars per 1000 people. For comparison, in Kazakhstan this indicator is 202 units, in Russia - 300 units, in Germany - 567 units, in the USA - 800 units. and so on. Uzbekistan has a great potential for the growth of the automobile market. The increase in the purchasing power of the population should take into account the costs of using a car.

CONCLUSION

The changing times and increased confidence in electric cars have resulted in more people buying electric cars. Five years ago, in 2018, the population of Uzbekistan bought a total of 13 electric cars, and by 2022, the figure will reach 2180 (Figure 1). Of course, this is due to the improvement of the standard of living of the population, and secondly, it is directly related to the increase of electric cars in the world car market, increased competition, and after that, the prices of electric cars have dropped significantly.

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