

Partial Zero Emission Vehicles (PZEVs) over Conventional Vehicle

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ABOUT THE STUDY

Transportation has been a major source of greenhouse gas emissions, which is contributing to global climate change. In response to this, the automotive industry has been developing various forms of alternative propulsion technologies, including Hybrid Electric Vehicles (HEVs), Battery Electric Vehicles (BEVs), and Fuel Cell Electric Vehicles (FCEVs), to reduce emissions from vehicles. Partial Zero Emission Vehicles (PZEVs) are another type of advanced technology that is gaining popularity in the market. This article aims to explore the current state of PZEV technology, its advantages, and future prospects. Partial Zero Emission Vehicles (PZEVs) are vehicles that meet strict emission standards set by the California Air Resources Board (CARB). PZEVs are required to have 90% cleaner emissions than the average new vehicle, and they must emit almost zero evaporative emissions. PZEVs achieve these standards through the use of advanced emission control technologies, such as improved catalytic converters, advanced fuel systems, and enhanced engine management systems. PZEVs offer several advantages over conventional gasoline vehicles. Firstly, they emit significantly fewer pollutants, such as Nitrogen Oxides (NO_x), Hydrocarbons (HCs), and Carbon Monoxide (CO), which are harmful to human health and the environment. Secondly, PZEVs offer improved fuel economy, which results in lower fuel costs for the driver. Thirdly, PZEVs offer improved performance and driving experience due to their advanced technologies, such as direct fuel injection, variable valve timing, and turbocharging. PZEVs are currently available in the market, with several automakers offering PZEV versions of their conventional gasoline vehicles. However, the market penetration of PZEVs is still relatively low compared to other advanced technologies, such as BEVs and FCEVs. One of the reasons for this is the relatively small market demand for PZEVs, which is partially due to the lack

of awareness of the technology among consumers. The purchasing of Multifuel Vehicles (MFVs) has been encouraged by regulations in many different countries. Because these vehicles may run on several energy sources, they provide a new decision-making factor for consumers the choice of fuel (or energy). As fuels differ in terms of carbon emissions, this option has environmental repercussions. Taxes on fossil fuels can lead to economic inefficiencies and have no effect on getting drivers to switch to alternative fuels. The results raise concerns about the cost-effectiveness of incentive program for MFV purchases that disregard the fuel choice dimension and emphasize the significance of taking fuel choice into account when analyzing public policy and developing technologies. However, PZEVs are expected to become more popular in the future, as emission standards become stricter, and more countries and regions adopt California's emission standards. In addition, as the technology improves, PZEVs are expected to become more affordable and offer even better performance and fuel economy. This is likely to increase demand for PZEVs, as more consumers become aware of the benefits of the technology.

CONCLUSION

PZEVs, a cutting-edge technology, provide various benefits over traditional gasoline vehicles, including notably reduced pollution, better fuel efficiency, lower carbon emissions, and better performance. PZEVs now have a small market share, but with the right technology advancements, they could eventually replace our reliance on non-conventional fuel sources and give us a more sustainable option. As pollution limits tighten and more nations and areas are going to adopt, PZEVs are anticipated to gain in popularity in the future. Moreover, PZEVs are anticipated to be cheaper and provide greater services as technology advances.

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