



Mains Practice Question

Q. Discuss the environmental concerns associated with fossil fuel based vehicles and evaluate the effectiveness of policy initiatives in addressing these concerns. What further steps should be taken to mitigate the environmental impact of fossil fuel based vehicles in India? (250 Words)

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Approach:

- Start your answer with mentioning the environmental concerns raised by Fossil fuel based vehicles.
- Discuss some of the policy measures taken by the government and their effectiveness.
- Suggest some way forward measures to be taken to mitigate the environmental impact of fossil fuel based vehicles.
- Conclude the answer with a forward looking approach.

Introduction

Fossil fuel based vehicles are a major source of environmental problems such as air pollution, greenhouse gas emissions, and resource depletion. Air pollution from vehicle exhausts can cause respiratory diseases, cardiovascular problems, and premature deaths. Greenhouse gas emissions from fossil fuel combustion contribute to global warming and climate change, which can have severe impacts on ecosystems, biodiversity, and human well-being. Resource depletion from the extraction and use of fossil fuels can lead to energy insecurity, geopolitical conflicts, and environmental degradation.

Body

The government has taken several policy initiatives to address these environmental concerns and promote the adoption of EVs as a cleaner and more sustainable alternative to fossil fuel based vehicles. Some of these initiatives are:

- The **National Electric Mobility Mission Plan (NEMMP) 2020**, which aims to achieve 6-7 million sales of hybrid and electric vehicles by 2020 and reduce oil consumption by 2.5 million tonnes.
- The **Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME)** scheme, which provides demand incentives, supply incentives, and charging infrastructure support for EVs.
- The **National Policy on Biofuels**, which mandates blending of ethanol and biodiesel with petrol and diesel respectively to reduce fossil fuel dependence and emissions.
- The launch of a **Global Biofuels Alliance (GBA)** under India's G20 Presidency, which seeks to facilitate cooperation and intensify the use of sustainable biofuels among countries.

These policy initiatives have had some positive effects on the EV sector in India, such as increasing the sales of EVs, especially two-wheelers and three-wheelers; creating a network of public charging stations; encouraging research and development in EV technologies; and creating awareness among consumers and manufacturers.

However, there are still many challenges and gaps that need to be addressed to achieve a faster and wider transition to EVs in India. Some of these are:

- Lack of adequate and affordable financing options for EV buyers and producers.
- Lack of standardization and interoperability of charging infrastructure across states and regions.
- Lack of sufficient domestic production capacity and supply chain for EV components such as batteries, motors, and power electronics.
- Lack of consumer awareness and trust in the performance, reliability, and safety of EVs.
- Lack of coordination and integration among various stakeholders such as central and state governments, industry associations, civil society organisations, academia, and media.

To overcome these challenges and mitigate the environmental impact of fossil fuel based vehicles in India, the following steps are suggested:

- Enhance the availability and accessibility of low-cost loans, subsidies, tax benefits, and insurance schemes for EV buyers and producers.
- Harmonise the technical standards and regulations for charging infrastructure across states and regions; promote the use of renewable energy sources for charging; and incentivise the installation of private charging facilities.
- Increase the domestic production capacity and supply chain for EV components by supporting innovation, research, skill development, quality control, and technology transfer; reduce the dependence on imports of critical raw materials such as lithium, cobalt, and nickel; and promote the recycling and reuse of batteries.
- Increase consumer awareness and trust in EVs by conducting campaigns, demonstrations, workshops, exhibitions, etc.; provide accurate information on the benefits, costs, maintenance, safety, etc. of EVs; address the range anxiety and performance issues; and ensure adequate after-sales service and warranty.
- Strengthen the coordination and integration among various stakeholders by creating platforms for dialogue, consultation, collaboration, feedback, monitoring, evaluation, etc.; align the policies and incentives at different levels; involve the civil society organisations, academia, media, etc. in promoting EVs; and ensure transparency and accountability.

Conclusion

By taking these steps, India can accelerate its transition to EVs and reduce its environmental impact from fossil fuel based vehicles. This will not only help India achieve its national goals of energy security, economic growth, and social welfare but also contribute to its global commitments of climate action under the Paris Agreement.

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