



## Mains Practice Question

**Q.** The adoption of electric vehicles is rapidly growing worldwide. How do electric vehicles contribute to reducing carbon emissions and what are the key benefits they offer compared to traditional combustion engine vehicles? (Answer in 250 words, UPSC Mains 2023)

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### Approach

- Briefly introduce the topic by acknowledging the growing global adoption of electric vehicles.
- Mention the role of EVs in reducing carbon emission and key benefits of EVs over traditional vehicles.
- Conclude by highlighting the advantages of EVs.

### Introduction

The adoption of electric vehicles has been on the rise globally due to increased environmental awareness and increasing government incentives for ensuring more sustainable transport options and controlling rising temperatures.

### Body

#### Role of electric vehicles in reducing carbon emissions

- EVs being more energy efficient consume less energy than traditional vehicles and emit less GHG emissions.
- They reduce dependency on fossil fuels, particularly gasoline products and hence, diversify energy baskets.
- EVs run on electricity which can be generated from cleaner sources like renewables. It reduces direct emissions of GHGs like carbon monoxide, CO<sub>2</sub>, etc.
- The transition from internal combustion engines to electric motors reduces carbon dioxide (CO<sub>2</sub>) emissions and other pollutants, contributing to improved air quality and a greener future.

#### Key benefits of EVs compared to traditional combustion engine vehicles

- Having lower fueling and maintenance costs, EVs offer cheaper alternatives than gasoline products.
- They can reduce a significant amount of greenhouse gas emissions, especially when charged from renewable sources.
- EVs deliver instant torque, providing quick acceleration and a responsive driving experience.
- They are quieter than traditional vehicles, which can lead to lower noise pollution promoting a more pleasant environment.
- EVs generally have a lower center of gravity which offers better handling and comfort.

### Conclusion

EVs offer numerous advantages over traditional vehicles but sustainable generation of electricity is still a

cause for concern. However, with technological advancements, and government incentives, EVs can offer a potential solution for emission less future.

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