

LOW EMISSION MOBILITY: THE FUTURE OF TRANSPORTATION

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Transportation is a major contributor to air pollution and greenhouse gas emissions, both of which have negative effects on the environment and human health. As a result, there is an increasing demand for low-emission mobility options to reduce the environmental impact of transportation. In this article, we will look at the concept of low-emission mobility and its potential as the future of transportation. As climate change and air pollution remain major concerns for our planet, low-emission mobility is more important than ever. Low-emission mobility is a critical solution for reducing the environmental impact of transportation and ensuring our planet's long-term viability.

What exactly is Low Emission Mobility?

Low emission mobility refers to modes of transportation that emit fewer pollutants and greenhouse gases than traditional fossil-fuel-powered vehicles. Electric vehicles (EVs), hybrid vehicles, hydrogen fuel cell vehicles, and biofuel vehicles are among the options. Active transportation options for low-emission mobility include walking, cycling, and public transportation.

What Is the Importance of Low-Emission Mobility?

Low-emission mobility is critical for a variety of reasons. For starters, it aids in the reduction of air pollution and greenhouse gas emissions, both of which are harmful to the environment and human health. Second, it contributes to lessening our reliance on fossil fuels, which are a finite resource that contribute to climate change.

Finally, low-emission mobility can help to make cities more livable by reducing traffic congestion, noise pollution, and parking requirements.

Electric vehicles are a critical component of low-emission mobility. They use battery power to power an electric motor, resulting in zero tailpipe emissions. Electric vehicles are becoming more affordable and widely available, and many countries are providing incentives to encourage their use. However, the production of batteries for electric vehicles has its own environmental consequences, and the infrastructure for charging electric vehicles needs to be expanded.

Hybrid vehicles use an internal combustion engine in conjunction with an electric motor and battery, resulting in lower emissions than traditional gasoline-powered vehicles. Hybrid vehicles are becoming more popular and come in a wide range of models and sizes. They may be more expensive than standard vehicles, but their fuel efficiency can result in lower operating costs over time.

Hydrogen fuel cell vehicles generate electricity using hydrogen as the fuel, emitting only water vapour as emissions. While hydrogen fuel has the potential to be a zero-emission option, the infrastructure for producing and distributing it is currently limited.

Biofuels, which can be used to power vehicles, are derived from renewable sources such as plant materials. They emit fewer pollutants than traditional gasoline and diesel fuels and can be produced in the United States. Concerns have been raised about the sustainability of some biofuels, as well as their impact on food prices and land use.



Image source: evvehicleinfo.com

Walking, cycling, and public transportation are all examples of active transportation options that contribute to low-emission mobility. They emit no emissions and are frequently healthier and less expensive than driving a car. Many cities are investing in active transportation infrastructure, such as bike lanes and pedestrian walkways.

However, there are barriers to widespread adoption of zero-emission mobility. The high cost of these vehicles is one challenge that may deter consumers from purchasing them. More charging or refuelling infrastructure is also required to support these vehicles. However, it is expected that with continued innovation and investment in these technologies, the cost of low-emission vehicles will fall and charging or refuelling infrastructure will become more widely available. Governments and businesses all over the world recognise the value of low-emission mobility and are investing in the development and implementation of low-emission vehicles and transportation systems. India has implemented a number of initiatives and incentives to promote low-emission mobility,

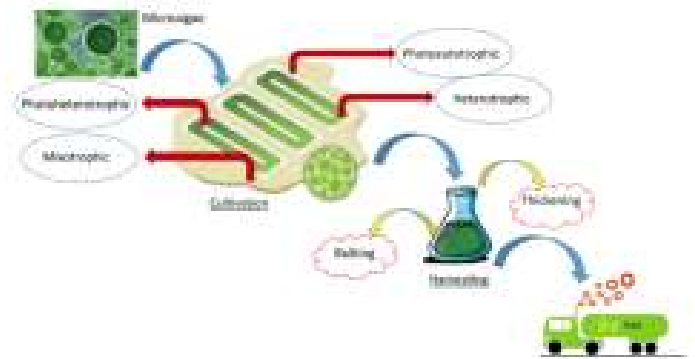


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with a particular emphasis on electric and hybrid vehicles. These initiatives aim to reduce the environmental impact of transportation, promote sustainable development, and improve the quality of life for its citizens. Among these initiatives are the following:

1. FAME (Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles): In 2015, the FAME scheme was launched to promote the adoption and manufacturing of electric and hybrid vehicles in India. Under this scheme, the government provides incentives to buyers of electric and hybrid vehicles, as well as manufacturers of these vehicles.

1. The National Electric Mobility Mission Plan (NEMMP) was launched in 2013 to encourage the use of electric vehicles in India. The plan is to sell 10-11 million hybrid and electric vehicles by 2025.

2. Public Transportation: To reduce reliance on private vehicles, several Indian cities are investing in public transportation options such as metro systems, buses, and cycle sharing schemes.

3. Emission Norms for Bharat Stage VI Vehicles: India has implemented Bharat Stage VI emission norms for vehicles, which are equivalent to Euro VI norms. These standards require strict limits on pollutant emissions such as carbon monoxide, nitrogen oxides, and particulate matter.

4. Infrastructure: The Indian government is also investing in electric vehicle charging infrastructure, with plans to build charging stations across the country. Incentives are also being offered for the development of battery manufacturing plants in India.

5. GST Reduction: The Goods and Services Tax (GST) for electric vehicles was reduced from 12% to 5% in 2019 to make them more affordable for buyers.

Low-emission mobility is an important component of the transportation future. It can help to mitigate the effects of transportation on the environment and human health by reducing emissions and our reliance on fossil fuels. While there are obstacles to overcome, such as expanding electric vehicle charging infrastructure and developing sustainable biofuels, the benefits of low-emission mobility make it a worthwhile investment for the future.

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Mobility's net-zero transition: A look at opportunities and risks

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By [Eric Hannon](#), [Mekala Krishnan](#), [Jwalit Patel](#), and [Shivika Sahde](#)

A transition to net-zero emissions would entail much greater demand for electric vehicles. McKinsey analysis shows how the shift could create opportunities and risks for automakers around the world.

Mobility industries are the engines of the global economy, enabling trillions of dollars of trade every year. Transportation is also among the most significant sources of greenhouse-gas (GHG) emissions, accounting for 19 percent of them. The good news is that with climate technologies such as batteries, fuel cells, and biofuels, vehicles could emit little or no GHGs. That would help businesses and governments alike to meet their net-zero targets.

[McKinsey's research on the economic implications of a net-zero transition](#) suggests that decarbonizing mobility would involve major changes, including a shift in the mix of vehicles being manufactured and an increase in upfront capital costs for consumers and organizations as they switch to electric vehicles (EVs) and other low-emission transport alternatives. Because of these changes, companies throughout the mobility system—including OEMs and their suppliers, plus manufacturers and operators of infrastructure—will have opportunities to tap the growing demand for vehicles that produce minimal or no GHGs. They will also want to manage their legacy businesses carefully. By assessing these dynamics and adjusting strategies appropriately, mobility companies can transform themselves to thrive as the net-zero transition progresses.

A net-zero outlook for mobility

Across the mobility system, by far the biggest GHG producer is road transportation. Tailpipe emissions from cars, trucks, and other vehicles make up 75 percent of all emissions from transportation