



## India's Transition to Green Transport

This editorial is based on [“Green Transport: Keep all options on the table”](#) which was published in The Hindu Business Line on 18/09/2022. It talks about the need to harness the potential of Green Transportation in India.

**For Prelims:** Climate Change, Green Transport, Electricity, Biomass, Intelligent transport system, Biofuels, Electric Vehicles, Gati Shakti Mission, Atal Mission for Rejuvenation and Urban Transformation

**For Mains:** Current State of Transport Infrastructure in India, Key Issues Related to Transportation in India, National Urban Transport Policy

An efficient [Transport Sector](#) is important for economic development of the country and for the well-being of its people. The transport sector makes up **30% of the [global energy consumption](#)**. Its energy use is expected to grow 1% every year till 2030.

In India, the transport sector has grown extensively, both in terms of physical spread as well as capacity to meet the mobility demands for both **passengers** as well as **freight**. Despite its impressive growth, it is seen that the existing transport infrastructure in India is **far from meeting the growing mobility needs** in terms of **coverage, capacity as well as service quality**.

**Unsustainable transport** activities can produce widespread negative impacts like [degradation of air quality](#), [greenhouse gas emissions](#), increased threat of global [climate change](#) and habitat loss of animals and fragmentation.

Therefore, there is a need to pay greater attention to [sustainable \(green\) transport](#) at city, state and national level as the way forward for **India's mobility sector**.

### What is Green Transport?

- **Green transport (Sustainable transport)**, refers to modes of transportation that do not negatively impact the environment and [ecological balance](#) as well as human health.
- **Components** for evaluating sustainability include:
  - **Vehicles** (car, bus, aeroplane, ships etc.)
  - **Source of energy** ([wind and solar energy](#), [electricity](#), and [biomass](#) etc)
  - **Infrastructure** (roads, railways, airways, waterways)

### What is the Current State of Transport Infrastructure in India?

- **Roads: Roads** are the dominant mode of transportation in India today. They carry almost **85% of the country's passenger traffic**.

- Road transport also helps the **industrial sector** by moving raw materials to industries and finished goods to market.
- **Ports and Shipping:** India has **13 major ports** along its more than **7500 km** long coastline. Ports play a very significant role in improving **foreign trade** in a growing **Indian economy**, with its seaborne foreign trade being **95% by volume** and **67% by value**.
- **Railway:** **Indian Railways** is the main artery of the country, it is also called as lifeline of India which provides both freight and passenger mode of transportation.
  - India's railway network is the **4<sup>th</sup> largest railway network** in the world and **2<sup>nd</sup> largest in Asia**, under single management. It is also the single largest employer in India.
- **Civil Aviation:** The **civil aviation industry in India** has emerged as one of the fastest growing industries in the country. India has become the **3<sup>rd</sup> largest domestic aviation market** in the world and is expected to overtake the **United Kingdom** to become the **3<sup>rd</sup> largest air passenger market** by 2024.

## What are the Recent Government Initiatives Regarding Sustainable Transport Development?

- **[Onboard Driver Assistance and Warning System \(ODAWS\)](#)**
- **[Sagarmala](#) and [Parvatmala Project](#)**
- **[Gati Shakti Mission](#)**
- **[Atal Mission for Rejuvenation and Urban Transformation](#)**
- **[National Electric Mobility Mission Plan](#)**

## What are the Key Challenges Related to Transportation in India?

- **Challenges in Railways:**
  - **Slow Expansion of Rail network:** In view of the country's size and requirements of a growing economy, the **growth in railways has been extremely slow** and inadequate.
    - There is also **little presence of railways in hilly regions and North Eastern (NE) states** in India, making access to railways a major concern in these areas.
  - **Higher Freight Transportation Cost:** Freight transportation costs by Railways in India are much higher than in most countries as **freight tariffs** have been kept high **to subsidise passenger traffic**.
  - **Social v/s Commercial Objective:** Private contracts are driving Indian Railways towards **commercialization**. However, privatising railways will result in better infrastructure, which in turn will enhance travel facilities.
    - But, the private players would be more concerned with **making a profit** which will result in a **rise in prices**, resulting in **poor reach to all segments of society**. This will undermine the very social objective of railways.
- **Challenges in Road Transportation:**
  - **Catalyst in Water Stress:** Unsustainable road construction and maintenance, including the creation of impervious surfaces adversely affect **water quality due to faster rates of runoff, lower groundwater recharge rates, and increased erosion**.
  - **Poor Accessibility in Rural Areas:** Rural areas home to almost 70% of India's population. Still, **33% of India's villages do not have access to all-weather roads** and remain cut off during the monsoon season.
    - The problem is more acute in India's **northeastern states** which are **poorly linked to the country's major economic centres**.
  - **Rising Road Accident:** India has **1% of the world's vehicles but accounts for 11% of all road crash deaths**.
    - According to the **[Ministry of Road Transport and Highways' 2020](#)**
      - Speeding accounted for **69.3%** of deaths.
      - Non-wearing of helmets resulted in **30.1%** deaths.
      - Non-use of seatbelts caused **11.5%** of deaths.
  - **Inadequate Traffic Calming Infrastructure:** There is a lack of traffic calming measures and manpower in highly congested cities of India. Despite the fact that more than 60% of

road accidents result from over-speeding, **speed limit signs are rarely seen even on state highways and major roads.**

▪ **Challenges in Airways Transportation:**

◦ **Accessibility and Affordability Constraints:** Poor regional connectivity, inadequate hangar space, and **lack of land for airport expansions** are some of the key constraints of India's aviation sector.

• Also, because of **high central and state taxes**, aviation fuel in India is approximately **60% more expensive** than it is in [ASEAN](#) and the [Middle East countries](#).

• This makes the **profitability of the civil aviation industry vulnerable to volatility in [global oil prices](#).**

▪ **Challenges in Ports and Shipping:**

◦ **Inefficiency and High Turnaround Time: In India**, Inefficiencies in port operations have resulted in **high dwell times and high turnaround times**, due to a wide range of issues, including insufficient port infrastructure and **lengthy custom clearance procedures**.

• Also, poor hinterland connectivity and inefficient modal transfers lead to problems of **slow evacuation of cargo**.

▪ **Other Challenges:**

◦ **Gaps in Urban Transport Management:**

• There is a **gap between the demand and supply of public transportation primarily due to rapid [urbanisation](#).**

• The growing number of vehicles in Indian cities is **viewed as the essential driver of climate change** due to high dependence on combustible fuel.

• **Urban transportation is the second leading source of [carbon dioxide \(CO<sub>2</sub>\) emissions](#) due to its dependency on fossil fuels.**

◦ **Threat to Biodiversity:**

• Transport sector has been recognized as a primary cause of habitat loss and a subsequent decline in [biodiversity](#).

• Expansion of road, railways, airways network creates **fragmentation and degradation of habitat**.

## What Should be the Way Forward?

▪ **Intelligent Transportation System (ITS):**

◦ There is a need to shift towards an **intelligent transport system** to enable users to be better informed and make safer, more coordinated, and '**smarter**' **use of transport networks**.

◦ **Example:** Intelligent traffic management, V2X communication, [Electronic toll collection](#).

▪ **Awareness Towards Green Travel Habits:**

◦ It is necessary to launch intensive awareness campaigns that **educate people on the ill effects of the growing transport problems**. Promoting greater use of [non-motorized vehicles](#), proper maintenance of their vehicles, **safer driving practices**, etc.

◦ Such campaigns will encourage individuals, families and communities to adopt "**Green Travel Habits**" that would make travel less polluting and damaging.

▪ **Resilience, Equity, and Sustainability in Transport (REST):**

◦ **Resilience:** There is a need to **rethink and restore confidence in public transport**, including the procurement of more buses, the adoption of [e-buses](#), **bus corridors and bus rapid transit systems** with [digitization of public transport](#).

◦ **Equity:** Last mile **road and railway connectivity** should be at priority with **special attention to the north east region**.

◦ **Sustainability:** Emission norms should be tightened and [electric vehicles](#) should be promoted, as well as biofuels should replace fossil fuels.

• The development of several **electric freight corridors** to promote electrification is also crucial to reaping the benefits of electric vehicles.

▪ **Manufacturing Hub in Green Mobility:**

◦ With **proper policy support, industry action, market generation, increased investor interest and acceptance**, India can position itself as a **low-cost, zero-carbon manufacturing hub in [green mobility](#)**, at the same time fulfilling its goal of **economic**

**development, job creation, and improved public health.**

***Drishti Mains Question***

Despite India's significant infrastructural growth, the mobility sector in India is still far from meeting the growing demands. Explain.

**UPSC Civil Services Examination, Previous Year Question (PYQ)**

***Prelims***

**Q. In the context of proposals to the use of hydrogen enriched CNG (H-CNG) as fuel for buses in public transport, consider the following statements: (2019)**

1. The main advantage of the use of H-CNG is the elimination of carbon monoxide emissions.
2. H-CNG as fuel reduces carbon dioxide and hydrocarbon emissions.
3. Hydrogen up to one-fifth by volume can be blended with CNG as fuel for buses.
4. H-CNG makes the fuel less expensive than CNG.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 and 3 only
- (c) 4 only
- (d) 1, 2, 3 and 4

**Ans: (b)**

***Mains***

**Q. National urban transport policy emphasises on moving people instead of moving vehicles. Discuss critically the success of various strategies of the government in this regard. (2014)**

PDF Reference URL: <https://www.drishtiias.com/printpdf/india-s-transition-to-green-transport>