



## Towards Net Zero

This editorial is based on [“The Road To Net Zero”](#) which was published in Indian Express on 05/01/2022. It talks about India's contribution in Net Zero Carbon Emissions and the role of the private sector in fulfilling its net-zero by 2070 target.

**For Prelims:** Net Zero Emissions, India's Net Zero by 2070 targets, CoP-26, Renewable Energy Targets, Electric Vehicles, Panchamrit advocacy of five elements for climate change at CoP-26.

**For Mains:** India's Contribution Towards Net Zero Carbon Emission, India's Target of Net Zero by 2070, India's Support to Electric Vehicles, India's Renewable Energy Targets.

Suffering from global warming, frequent floods and fires, Covid-19 pandemic and numerous other problems, the planet is going through an existential crisis, citing an **urgent need for scientific and innovative steps to secure humanity's future**.

In this context, India at [UNFCCC CoP-26](#) announced its enhanced climate commitments — the “Panchamrit”, including a commitment to reach [net-zero carbon emission by 2070](#).

India's announcement of its net-zero goal is a major step considering the fact that it is **not one of the major contributors to global warming**. Its historical cumulative emissions are a **mere 4.37% of the world's total**.

Now, to achieve its targets of 2070, India particularly needs to focus on a smoother renewable energy transition, greater [adoption of electric vehicles](#) and greater participation from the public as well as the private sector.

## India's Contribution Towards Net Zero

- **India's Renewable Energy Targets:** India's [renewable energy targets](#) have steadily become more ambitious, from the 175 GW by 2022 declared at Paris, to 450 GW by 2030 at the UN Climate Summit, and now **500 GW by 2030, announced at COP26**.
  - India has also announced the **target of 50% installed power generation capacity from non-fossil energy sources** by 2030, raising the existing target of 40%, which has already been almost achieved.
  - India has also announced a [Hydrogen Energy Mission](#) for grey and green hydrogen.
  - In energy efficiency, the market-based scheme of [Perform, Achieve and Trade \(PAT\)](#) has avoided 92 million tonnes of CO2 equivalent emissions during its first and second cycles.
- **Reforms in Transport Sector:** India is accelerating its e-mobility transition with the **Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles Scheme**.
  - India **leapfrogged from Bharat Stage-IV (BS-IV) to [Bharat Stage-VI \(BS-VI\)](#)**

[emission norms](#) by April 1, 2020, the latter being originally scheduled for adoption in 2024.

- A **voluntary [vehicle scrapping policy](#)** to phase out old and unfit vehicles complements the existing schemes.
- The **Indian Railways** is also charging ahead, targeting the [full electrification of all broad-gauge routes](#) by 2023.
- **India's Support to EVs:** India is among a handful of countries that **support the global [\[email protected\] campaign](#)**, which aims for at least 30% new vehicle sales to be electric by 2030.
  - India's **advocacy of five elements for climate change — “Panchamrit”** — at the [COP26 in Glasgow](#) is a commitment to the same.
  - India has taken various measures to develop and promote the EV ecosystem:
    - The remodeled [Faster Adoption and Manufacturing of Electric Vehicles \(FAME II\)](#) scheme
    - [Production-Linked Incentive \(PLI\) scheme for Advanced Chemistry Cell \(ACC\)](#) for the supplier side
    - The recently launched [PLI scheme for Auto and Automotive Components](#) for manufacturers of electric vehicles.
- **Role of Government Schemes:** The [Pradhan Mantri Ujjwala Yojana](#) has helped 88 million households to shift from coal based cooking fuels to LPG connections.
  - More than 367 million LED bulbs have been distributed under the [UJALA scheme](#), leading to a **reduction of 38.6 million tonnes of CO<sub>2</sub> per year**.
  - These two and other similar initiatives have helped India achieve a **reduction of 24% in the emission intensity of its GDP between 2005 and 2016**.
- **Role of Industries in Low-Carbon Transition:** The public and private sectors in India are already playing a key role in meeting the climate challenge, helped by growing customer and investor awareness, as well as increasing regulatory and disclosure requirements.
  - For instance, the **Indian cement industry has taken pioneering measures and achieved one of the biggest sectoral low carbon milestones worldwide**.
  - There is greater synergy of India's climate policy with the actions and commitments of its private sector.

## Associated Challenges

- **Issues in Smooth Transition to Renewables:** Identification of **land with Renewable Energy potential** and the **time consuming procedures of land clearance**.
  - **Integrating** a larger share of renewables with the grid is another roadblock.
  - Challenges are also expected in enabling penetration of renewables in the so called **hard to decarbonize sectors**.
- **Challenges for Coal-Powered Companies:** A transition from coal to non-fossil fuel based power generation/transportation is relatively easier for the companies operating in the services sector.
  - However, the **low-carbon transition challenge is bigger for companies that are largely coal-powered** and contribute more than half of our country's emissions.
- **Lack of Technology and Skilled Labour for EV Manufacturing:** India is **technologically deficient** in the production of electronics that form the backbone of the EV industry, such as batteries, semiconductors, controllers, etc.
  - EVs have higher servicing costs which require higher levels of skills. **India lacks dedicated training courses for such skill development**.
- **Consumer Related Issues for Shifting to EVs:** In 2018, **India was reported to have only 650 charging stations**, which is quite less than the neighboring counterparts who already had over 5 million charging stations.
  - **Lack of charging stations** makes it unsuitable for the consumers in covering long range.
  - Also, the **cost of a basic electric car is much higher** than the average price of a car running on conventional fuel.

## Way Forward

- **An Energy Mix of Renewables:** Round the clock supply of sources like wind and sunlight is not possible everywhere, therefore, it would be **wise to go for a diversified energy mix of solar, wind and hydrogen** based energy.

- India should work on areas like **investment in infrastructure, capacity building and better grid integration** in the near and immediate future.
- **Encouraging Private Sector Engagement:** Since industries also contribute to GHG emissions, any climate action will need to reduce or offset emissions that emerge from industrial and commercial activity.
  - Service companies can easily reduce their emissions by **expanding the use of renewable energy, and working with supply chain partners**. They can become carbon neutral by sourcing 50% of their electricity from renewable sources.
  - For coal-powered companies, this 'energy-transition movement' offers an **opportunity to invest in climate technologies** and expand the use of renewable energy sources.
- **Electric Vehicle as Way Forward:** EVs will **contribute to improving the overall energy security situation** as the country imports over 80% of its overall crude oil requirements, amounting to approximately \$100 billion.
  - To mitigate the charging issues of EVs, charging infrastructures that draw power from local electricity supply can be **set up at private residences, public utilities** such as petrol and CNG pumps, and **in the parking facilities of commercial establishments** like malls, railway stations, and bus depots.
- **Increasing R&D in EVs:** The Indian market needs **encouragement for indigenous technologies** that are suited for India from both strategic and economic standpoint.
  - Since investment in **local research and development is necessary to bring prices down**, it makes sense to leverage local universities and existing industrial hubs.
  - India can **pursue countries like the UK to synergise EV development**.

## Conclusion

There is a need to act decisively to reach global net-zero, restricting future cumulative emissions to the remaining carbon budget, if the rise in temperature is to remain within the limits of the Paris Agreement.

### ***Drishti Mains Question***

Discuss India's contribution towards net zero carbon emissions and what more India can do to achieve its goals of net-zero by 2070.