



7.93% Drop in GHG Emissions

India's Progress Towards Climate Resilience

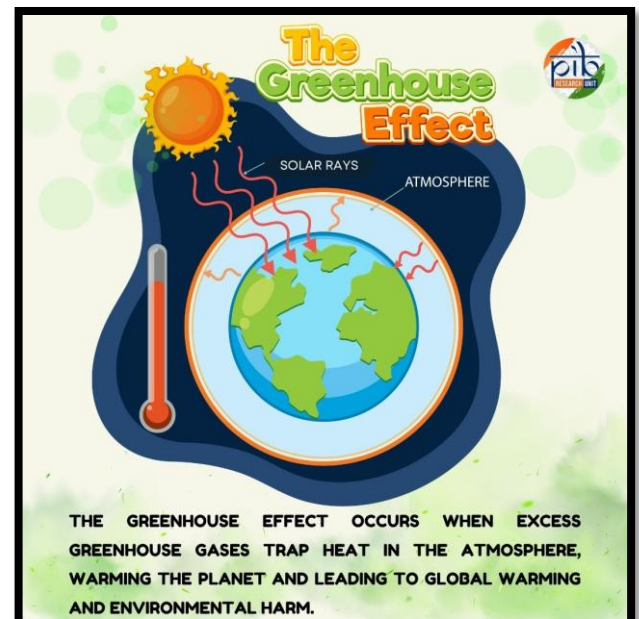
(Ministry of Environment, Forest and Climate Change)

12th January, 2025

"India is the land of Mahatma Gandhi, whose vision for sustainable development inspires us greatly. We have shown what it is to realise key principles like Green Future and Net Zero."

~ Prime Minister Shri Narendra Modi¹

Climate change and rising temperatures pose serious threats to life on Earth, prompting the United Nations Framework Convention on Climate Change (UNFCCC) to require countries to submit Nationally Determined Contributions (NDCs) under the Paris Agreement to reduce greenhouse gas (GHG) emissions. In response, India pledged to achieve net-zero emissions by 2070 at the 26th Conference of the Parties (COP 26) in 2021. India's 4th Biennial Update Report (BUR-4) highlighted a **7.93% reduction in GHG emissions** in 2020 compared to 2019. This demonstrates India's commitment to a sustainable, climate-resilient future.



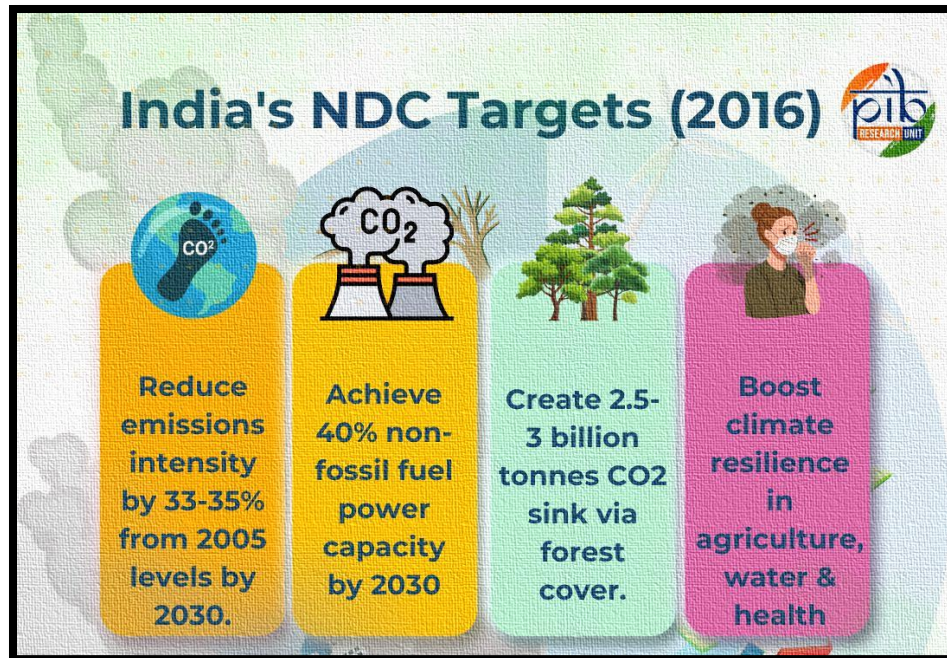
India's Climate Action under the UNFCCC²

The UNFCCC effective from March 21, 1994, aims to stabilize greenhouse gas concentrations and promote global cooperation on climate change and long-term climate finance. The 21st session of the UNFCCC's Conference of the Parties (COP21) took place in Paris in 2015, where 195 countries adopted the Paris Agreement. The agreement aims to limit the global average temperature increase above pre-industrial levels to well below 2°C, and to pursue efforts to limit the increase to 1.5°C and peak greenhouse gas emissions as soon as possible. It

¹ <https://x.com/narendramodi/status/1835585027922632713>

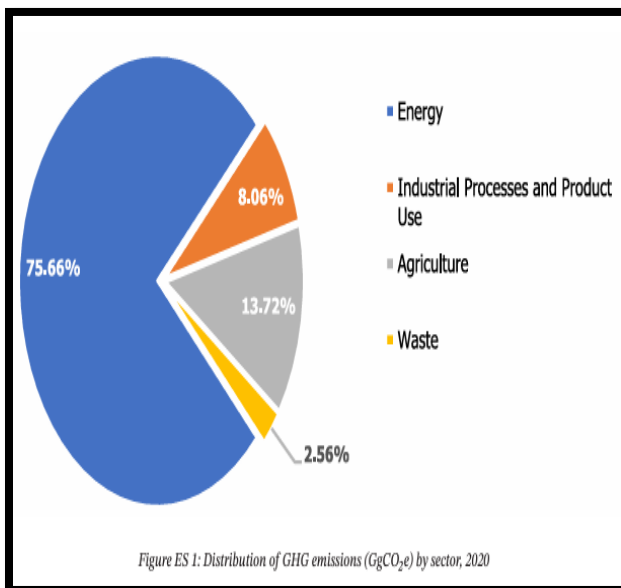
² <https://www.iea.org/policies/6025-nationally-determined-contribution-ndc-to-the-paris-agreement-india>

entered into force on November 4, 2016, requiring countries to submit Nationally Determined Contributions (NDCs) outlining their climate targets.



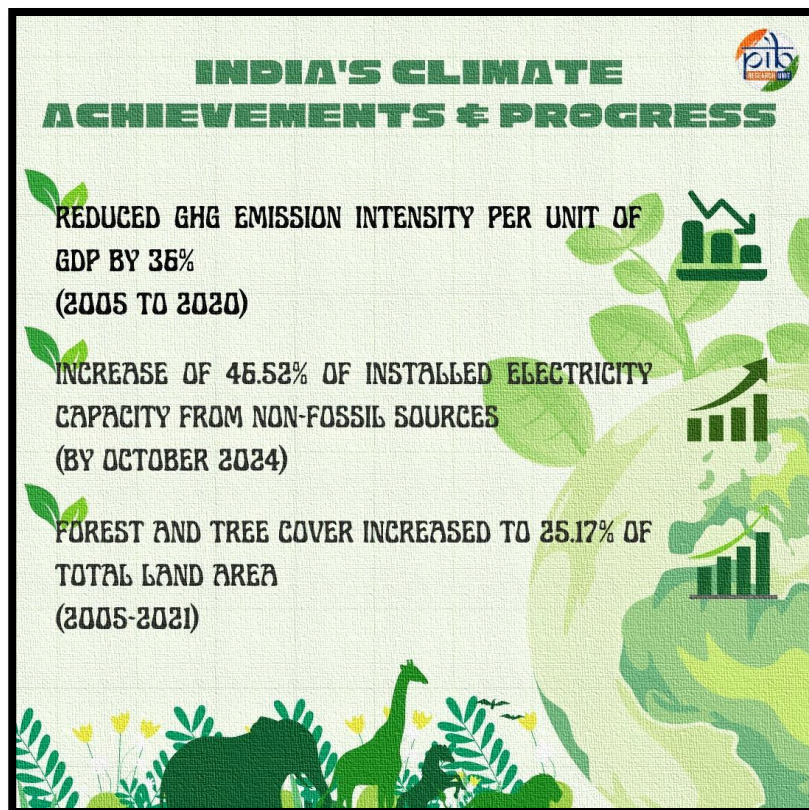
India submits Biennial Update Reports (BURs) to the UNFCCC every two years to track progress. These reports update the national GHG inventories, detail mitigation actions, and highlight the support received, including efforts to reduce emissions.

Emission Reductions and Climate Commitments³



India submitted its 4th Biennial Update Report (BUR-4) to the UNFCCC on 30th December 2024. The report shows a 7.93% reduction in total GHG emissions in 2020 with respect to 2019. Excluding Land Use, Land-Use Change, and Forestry (LULUCF), India's emissions were 2,959 million tonnes of CO₂e (carbon dioxide equivalent, way to measure the impact of GHG). Including LULUCF, net emissions were 2,437 million tonnes of CO₂e. The energy sector was the largest contributor accounting for 75.66% of emissions, along with other land use, sequestered approximately 522 million tonnes of CO₂, equivalent to reducing 22% of the country's total emissions.

³ <https://pib.gov.in/PressReleasePage.aspx?PRID=2089589>



These efforts reflect India's commitment to combating climate change while addressing its national circumstances, based on equity and the principles of the Paris Agreement.

India's Path to Sustainable and Low-Carbon Growth⁴

India, despite contributing minimally to global warming, faces significant challenges due to its large population and developmental needs. The country is committed to low-carbon development and building climate resilience while addressing its unique circumstances.

- ❖ India's historical share of cumulative global **GHG emissions is annual 4%**, despite having around 17% of the world's population between 1850 and 2019.
- ❖ **India's annual primary energy consumption per capita in 2019 was 28.7 gigajoules (GJ)**, considerably lower than both developed and developing countries.
- ❖ India is committed to pursuing low-carbon pathways, while ensuring adequate access to household energy, energy security, and energy for the development of all sectors of the economy.
- ❖ With its diverse geography, India is highly vulnerable to climate change impacts. Adaptation strategies are crucial for safeguarding development gains and ensuring future growth.

⁴ [Press Release: Press Information Bureau](#)

India Achieving Goal

India has devised a Long-Term Low Greenhouse Gas Emission Development Strategies (LT-LEDS) to chart a sustainable path forward in addressing climate change. India's LT-LEDS involves seven key strategic transitions, namely:

- (i) Low carbon development of electricity systems consistent with development
- (ii) Developing an integrated, efficient, inclusive low-carbon transport system
- (iii) Promoting adaptation in urban design, energy & material-efficiency in buildings & sustainable urbanization
- (iv) Promoting economy-wide decoupling of growth from emissions and development of an efficient, innovative low-emission industrial system
- (v) CO₂ removal and related engineering solutions
- (vi) Enhancing Forest and Vegetation cover consistent with socio-economic and ecological considerations
- (vii) Economic and financial aspects of low-carbon development and Long-Term Transition to Net-Zero by 2070.

Climate Action Initiatives for Carbon Neutrality⁵

The government has proactively undertaken various initiatives to address environmental challenges in the country. **Some of the significant measures are listed below:**

1. Forest Land Diversion & Mitigation Measures

- **Forest Fragmentation Consideration:** Forest fragmentation is addressed during forest land diversion approvals for non-forestry purposes under the Van Adhiniyam, 1980.
- **Compensatory Afforestation:** Mandatory afforestation for non-forestry land diversion, including soil and moisture conservation, and eco-restoration.
- **“Ek Ped Maa Ke Naam” tree plantation Campaign:** Nationwide tree plantation campaign launched on World Environment Day 2024.
- **Green Credit Program:** Launched in 2023, the program focuses on tree plantation on identified degraded forest land parcels to generate green credits.
- **National Afforestation Programme (NAP):** Pan-India afforestation in identified degraded forest areas with people's participation and decentralized forest governance.

2. Urban Climate Adaptation & Low-Carbon Development

- **Mainstreaming Adaptation in Urban Planning:** India's LT-LEDS emphasizes integrating adaptation measures and enhancing energy and resource efficiency within urban planning policies and guidelines as key components of a low-carbon development pathway.
- **Sustainable Urban Planning Policies:** The relevant policies and initiatives include Urban and Regional Development Plans Formulation and Implementation (URDPFI) guidelines, Town and Country Planning

⁵ <https://pib.gov.in/PressReleaselframePage.aspx?PRID=2040031>

Act, Smart Cities Mission, Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Pradhan Mantri Awaas Yojana (PMAY) and Swachh Bharat Mission (SBM).

3. Air Pollution Control & Clean Air Initiatives

- **National Clean Air Programme (NCAP):** Aimed at improving air quality with city-specific action plans for 131 cities.
- **Funding & Implementation:** Mobilized through various schemes such as SBM (Urban), AMRUT, Sustainable Alternative towards Affordable Transportation (SATAT), Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME-II) and Nagar Van Yojna.
- **Air Pollution Abatement Measures:** Initiatives include cleaner fuels (CNG/LPG), ethanol blending, BS VI fuel norms, and air quality management.

4. Coastal Ecosystem Conservation & Resilience

- **Mangrove & Coral Reef Conservation:** Financial assistance provided to coastal states/UTs for enhancing climate resilience, including mangrove conservation.
- **Integrated Coastal Zone Management Plans (ICZMP) Plans for Coastal States:** Prepared for Gujarat, Odisha, and West Bengal for coastal ecosystem protection.
- **Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI) Program:** Mangrove restoration/reforestation program launched in 2023, covering approximately 540 km² across 9 coastal states and 4 UTs. ₹ 12.55 crores has been released to the states of Gujarat, West Bengal, Kerala and UT of Puducherry for the restoration of 3,046 ha. of mangroves in FY 2024-25.

5. Regulatory Measures for Climate Resilience

- The Coastal Regulation Zone (CRZ) Notifications (2011 & 2019), issued under the Environment Protection Act, 1986, Wildlife Protection Act, 1972, Indian Forest Act, 1927, and Biological Diversity Act, 2002 for enhancing the climate resilience. The 2019 CRZ notification specifically targets the management of mangroves, coral reefs, and other critical ecosystems.



Alongside these initiatives, India is adopting innovative methods to enhance green cover and reduce carbon emissions. As part of this, the Miyawaki technique have been used for tree planting at the Mahakumbh 2025, highlighting the fusion of spiritual practices with environmental responsibility. In preparation for the event, dense forests have been created at various sites across Prayagraj to ensure clean air and a healthy environment for the millions of devotees expected to attend.

Conclusion

India is advancing towards a carbon-neutral future with a focus on sustainable development and innovative solutions. Committed to reducing greenhouse gas emissions, India is implementing key initiatives like its Long-Term Low Emission Development Strategy and the Miyawaki tree planting at Mahakumbh 2025. These efforts ensure balanced growth and environmental responsibility, paving the way for a climate-resilient future.

Reference

- <https://unfccc.int/sites/default/files/resource/India%20BUR-4.pdf>
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Santosh Kumar/ Binoykumar C V/ Kamna Lakaria