

India's Updated Nationally Determined Contribution (NDC)

Mains: GS III - Energy|Environment

Why in News?

Recently, India's updated Nationally Determined Contribution (NDC), approved by the Union Cabinet on March 25, 2026, marks a significant step in its climate policy framework under the United Nations Framework Convention on Climate Change.

What are Nationally Determined Contributions (NDCs)?

- **NDCs** - Under the Paris Agreement, all signatory countries are required to periodically submit NDCs.
- These are *voluntary pledges* outlining how each country plans to reduce greenhouse gas emissions and adapt to climate change.
- While submission is mandatory, targets themselves are *not legally binding*, relying instead on transparency, peer pressure, and global cooperation.
- This voluntary nature has led to mixed outcomes globally, raising concerns about their adequacy in limiting global warming to 1.5°C.
- **India's New NDC & Key Targets** - India's updated NDC sets the following goals:
 - 60% of installed electric capacity from non-fossil sources by 2035
 - 47% reduction in emissions intensity of GDP (from 2005 levels)
 - Carbon sink of 3.5-4 billion tonnes of CO₂ equivalent
- These targets will be formally communicated to the UNFCCC and represent an upward revision of India's earlier commitments.
- **Comparison with Previous Commitments (2022 NDC)** - India's earlier NDC, submitted in August 2022, included:
 - 50% non-fossil installed capacity by 2030
 - 45% reduction in emissions intensity
 - Carbon sink of 2.5-3 billion tonnes CO₂ equivalent

What are the key differences?

- **Higher ambition** - Each target has been increased, reflecting greater confidence in India's clean energy trajectory.
- **Extended timeline** - The shift to 2035 aligns India with global timelines, as most major economies have set 2035 targets.
- **Early achievement** - India has already reached about 52% non-fossil installed capacity by early 2026, surpassing its 2030 target ahead of schedule.
- This demonstrates that India's renewable energy expansion has outpaced policy

expectations.

Do NDCs actually drive climate action?

- **Report** - The United Nations Environment Programme Emissions Gap Report 2025 (“Off Target”) found that:
 - Current NDCs are insufficient to meet the 1.5°C goal
 - They close less than 14% of the emissions gap
 - Projected warming still ranges between 2.3°C and 2.5°C
- Similarly, assessments by organizations such as World Resources Institute and E3G highlight that:
 - Most countries include partial energy transition goals
 - None provide comprehensive fossil fuel phase-out plans
 - Fossil fuel subsidy reforms are largely absent
- Even the UAE Consensus (2023), which called for tripling renewable capacity and transitioning away from fossil fuels, has not been fully integrated into national commitments.
- The effectiveness of NDCs globally remains contested.
- **Key Insight** - NDCs often document ongoing progress rather than drive it.
- The rapid global growth in renewables—driven by falling costs and industrial competition (especially from China)—has occurred largely independent of NDC mandates.

What the data shows about India’s emissions trends?

- **Data** - Recent emissions data provides encouraging signals.
- A 2025 analysis by the Centre for Research on Energy and Clean Air (published by Carbon Brief) found:
 - India’s CO₂ emissions grew by just 0.7% in 2025
 - This is the slowest growth rate since 2001 (excluding 2020 pandemic year)
 - Growth had previously ranged between 4% and 11% during 2021–24
- **Power Sector (Key Driver of Deceleration)**
 - Emissions declined by 3.8%
 - Coal-fired generation fell for the first time outside a crisis year since 1973
- Clean energy additions in 2025 included:
 - 47 GW solar
 - 6.3 GW wind
 - 4 GW hydro
 - 0.6 GW nuclear
- These additions were sufficient to meet most of the increase in electricity demand.
- **Heavy Industry (Rising Emissions)**
 - Steel emissions increased by **8%**
 - Cement emissions rose by **10%**
 - These sectors remain difficult to decarbonize and continue to drive emissions growth.
- **Inflection Point for India** - There is growing evidence that India’s power sector may soon reach a structural turning point.

- The Central Electricity Authority projects:
 - 786 GW of non-fossil capacity by 2035–36
 - Around 70% of total installed capacity
 - Solar alone exceeding 500 GW
- If clean energy additions consistently match or exceed demand growth, India could enter a phase where power sector emissions plateau or decline structurally.
- **Warranted caution** - 2025 experienced mild weather and weak industrial demand.
- Sustained trends need confirmation over multiple years.

What are the Key Contradictions in India's Climate Strategy?

- **Continued Expansion of Fossil Fuels**
 - Plans for 100 GW of new coal-fired capacity.
 - \$1 trillion investment in petrochemicals by 2040.
 - 50% increase in coal-based steel capacity by 2031.
 - These investments risk locking in carbon-intensive infrastructure.
- **Emissions Intensity vs Absolute Emissions** - India's NDC focuses on emissions intensity (emissions per unit of GDP) rather than absolute emissions.
 - This allows total emissions to continue rising.
 - Justified on equity grounds, given India's low per-capita emissions.
 - However, this approach complicates alignment with global carbon budgets.
- **Renewable Energy vs Grid Constraints** - Over 37 GW of renewable capacity remains stranded.
 - Due to transmission and grid integration challenges.
 - This highlights the gap between capacity creation and actual utilization.
- **Carbon Sink Commitments** - India aims to create a carbon sink of 3.5–4 billion tonnes CO₂ equivalent, primarily through forest cover.
 - Challenges include:
 - Forest cover remains around 24%, below the 33% target.
 - Reliance on "trees outside forests," which may be less reliable.
 - Competing land-use pressures from urbanization and industry.
- **Broader Implications for Climate Policy** - India's updated NDC reflects both progress and pragmatism:
 - **Positives**
 - Demonstrates rising ambition.
 - Aligns with global timelines.
 - Builds on strong renewable energy momentum.
 - Signals leadership among developing countries.
 - **Limitations**
 - Does not commit to fossil fuel phase-out.
 - Relies heavily on intensity-based metrics.
 - Faces implementation bottlenecks (grid, finance, land use).

What lies ahead?

- India's updated NDC represents a significant escalation in climate ambition, particularly in renewable energy and emissions intensity reduction.

- The country's recent emissions data—especially the slowdown in 2025—suggests that structural changes may already be underway, driven largely by the rapid expansion of clean energy.
- However, the effectiveness of NDCs as policy instruments remains limited. Globally and domestically, they tend to reflect existing trends rather than initiate transformative change.
- India's continued investments in coal, industrial expansion, and infrastructure gaps underscore the tension between development imperatives and climate goals.
- The coming decade will be Whether India can reconcile these contradictions—by accelerating grid reforms, curbing fossil expansion, and strengthening institutional capacity—will determine if its NDC becomes a driver of deep decarbonization or merely a record of incremental progress.

Reference

[The Hindu| India's New NDC](#)

