

1. Decarbonisation Challenge – Environment

India needs a massive \$467 billion investment by 2030 to decarbonise heavy industries like steel and cement. Although the nation has impressively met its 50% non-fossil electricity capacity target early, significant financial and technological hurdles remain for its long-term net-zero goals.

The Decarbonisation Challenge – A News Snapshot

The Core Issue – A new study by the Centre for Social and Economic Progress highlights a significant financial challenge for India's climate goals.

The Financial Need – The study estimates that India will require an additional \$467 billion by the year 2030 to successfully decarbonise its four most emission-heavy sectors – steel, cement, power, and road transport.

Understanding Decarbonisation

Definition – Decarbonisation is the process of fundamentally restructuring an economy to reduce its carbon dioxide (CO₂) emissions. The ultimate goal is to achieve a lower output of greenhouse gasses.

Global Context – Under the Paris Agreement, reducing the amount of CO₂ released from activities like transport and power generation is essential to meet the agreed-upon global temperature standards and combat climate change.

The Method – This transition primarily involves shifting away from fossil fuels and adopting renewable energy sources such as wind, solar, and biomass.

Why Decarbonisation is Crucial for India

High-Emission Sectors – The steel, cement, power, and road transport sectors are collectively responsible for the majority of India's CO₂ emissions. Tackling their carbon footprint is therefore a top priority.

National Climate Commitments – To meet its Nationally Determined Contributions (NDCs) under the Paris Agreement, India must undertake deep and transformative sectoral reforms.

Public Health & Air Quality – These emission-heavy industries are significant contributors to air pollution, particularly PM2.5 and NOx levels. Decarbonisation will directly improve air quality and public health in urban centers.

Energy Security – Reducing dependence on imported fossil fuels enhances India's strategic autonomy and leads to a significant reduction in its import bills.

Economic Competitiveness – Global markets and supply chains are increasingly shifting towards low-carbon products. For India to maintain its trade advantages and competitiveness, it must embrace a green transition.

Challenges on the Path to Decarbonisation

Environmental & Energy Transition

Coal Dependence – Over 70% of India's electricity is still generated from coal. Phasing out this dependence requires a massive and rapid scale-up of renewable energy capacity.

Technology Gaps –

Cost and Development – Key technologies required for deep decarbonisation, such as Green Hydrogen, Carbon Capture and Storage (CCS), and large-scale battery storage, remain very expensive and are not yet fully developed for mass deployment.

Regulatory Hurdles –

Fragmented Governance – Overlapping mandates and a lack of clear coordination between central and state government agencies can often slow down the implementation of decarbonisation policies and projects.

Massive Financing Needs –

Total Investment – An estimated \$467 billion is needed by 2030 for just the four key sectors.

Sector-Specific Breakdown –

1. Steel Sector – Requires \$251 billion.
2. Cement Sector – Requires \$141 billion. (Both steel and cement are among the hardest sectors to decarbonise and rely heavily on future technologies like CCS).
3. Power Sector – Requires \$47 billion.
4. Road Transport – Requires \$18 billion.

Social Impact – Just Transition – The shift away from fossil fuels will impact millions of people employed in those sectors. A "just transition" plan is needed, which includes reskilling and social protection programs for these workers.

India's Progress and Achievements So Far

A Major Milestone Achieved – India has successfully reached a landmark goal in its energy transition by achieving 50% of its total installed electricity capacity from non-fossil fuel sources.

Ahead of Schedule – This significant achievement was accomplished in 2025, a full five years ahead of its 2030 target set under the Paris Agreement.

Strong Policy Leadership – This success is a direct result of strong government policies and flagship schemes, particularly –

1. **PM-KUSUM** – Empowering farmers with solar energy.
2. **PM Surya Ghar** – Promoting rooftop solar for households.

Rapid Renewables Expansion – The country has seen a rapid expansion in utility-scale solar parks, wind energy projects, and bioenergy.

Co-Benefits of the Transition – These green initiatives have delivered numerous associated benefits, including the creation of rural employment, improved public health outcomes, and reduced air pollution.

A Global Climate Leader – This achievement solidifies India's position as a global leader in climate action, where it continues to advocate for climate equity and sustainable lifestyles.

Suggestions & The Way Forward

A Proven Concept – India's success in achieving its 50% non-fossil fuel capacity target ahead of schedule demonstrates that economic growth and decarbonisation can go hand in hand.

Ambitious Future Targets – The country is now focused on its next goals – Achieving 500 GW of non-fossil fuel capacity by 2030. Reaching Net-Zero emissions by 2070.

Key Strategies for Success – Sector-Specific Roadmaps – Develop clear and detailed plans with specific milestones for decarbonising key emission-heavy sectors.

Grid Modernization – Invest heavily in modernizing the national electricity grid to manage the intermittency and scale of renewable energy.

Public-Private Partnerships (PPPs) – Foster strong collaborations between the public and private sectors to mobilize the necessary financing and technology.

Overall Vision – To lead global climate action, India must continue to pursue a path that is bold, inclusive of all sections of society, and driven by technology.

Source – <https://www.thehindu.com/business/Economy/why-nris-are-choosing-india-for-medical-tourism/article69996327.ece>