

Green Economy and India's Path to Carbon Neutrality **Drakshayani T.**

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DOI: <https://doi.org/10.5281/zenodo.17307165>

ABSTRACT:

A green economy is an economic framework focused on sustainability by promoting low carbon emissions, efficient resources use, and social inclusivity. It aims for economic growth without causing environmental degradation. India is on committed path to carbon neutrality by 2070, announced at cop26 in 2021. The country aims to reduce its carbon emissions by 50% by 2030 and achieve net zero emissions by 2070. India's strategy involves transitioning to renewable energy sources such as solar, wind, green hydrogen, alongside improving energy efficiency and sustainable agriculture. India's green economy and carbon neutrality ambitions represent a holistic approach combining energy transformation, sustainable development and climate resilience for a low carbon future by 2070.

KEYWORDS:

Sustainability, Resource efficiency, Low carbon economy, Net zero emissions Carbon neutrality.

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Overview: The Framework for the Green Economy

Aeconomy that considerably reduces environmental dangers and ecological scarcities while improving human well-being and reducing inequality is known as a "Green Economy." Low-carbon, resource-efficient, and socially inclusive development are given top priority. The goal of the green economy is to promote investments in eco-friendly technologies, sustainable agriculture, renewable energy, and waste reduction in place of conventional growth models that deplete natural capital.

Essential Elements of the Green Economy

These tenets form the basis of the green economy:

- Encouraging inclusivity and social justice.
- Pursuing resource-efficient and low-carbon methods.
- Preserving environmental services and biodiversity.
- Facilitating varied and sustainable circular economy operations.

- Ensuring that environmental sustainability is not jeopardized by economic advancement.

Green Economy: International Approaches and Effects

Around the world, the shift to a green economy is regarded as crucial to climate action and sustainable development. It highlights.

- Incorporating environmental factors into all areas of economic planning and policy.
- Encouraging the development of green employment and industries by investing in clean technologies and fostering innovation.
- Putting into practice market-based tools like emissions trading, taxes, and carbon pricing.
- Promoting global cooperation for financial assistance, research, and technology transfer.

Key pillars for countries pursuing carbon neutrality include decarbonizing sectors, increasing the use of renewable energy, encouraging circular economic models, and improving energy efficiency.

Definitions and International Trends of Carbon Neutrality

“Carbon neutrality is the state of achieving a balance between the carbon dioxide(CO₂) released into the atmosphere and the carbon dioxide removed from it(CO₂)”. Nations have set lofty goals: China wants to achieve net-zero by 2060, India by 2070, and the European Union by 2050. Significant changes must be made to energy systems, industrial processes, urban planning, and land usage in order to achieve carbon neutrality. This includes:

- Enhancing the infrastructure for renewable energy (bioenergy, hydro, wind, and solar).
- Electrifying the industrial and transportation sectors.
- Putting money into carbon sequestration (such as carbon capture and storage (CCS), afforestation, etc).

India’s Goal for Carbon Neutrality

India’s net zero target by 2070 announced at cop26 (2021) is part of the Panchamitra strategy formalized in the 2022 Nationally Determined Contributions (NDC). Key goals include;

- Meet 50% of energy requirements from renewables by 2030.

- Reduce total projected carbon emissions by one billion metric tons by 2030.
- Reduce carbon intensity of the economy by 45% by 2030.
- Increase non fossil energy capacity to 500 GW by 2030 .
- Achieve net zero by 2070.

Sectoral Approaches

- **Energy:** India is in the forefront of solar power deployment, with plans to significantly increase its renewable energy capacity in line with national goals. Market mechanisms and legislative incentives, such as the trading of energy-saving certificates, are used to encourage energy efficiency.
- **Agriculture:** The emphasis is on organic farming, climate-resilient crops, and effective water and resource management.
- **Industry:** Clean technology adoption, carbon intensity reduction, and emissions trading are all encouraged.
- **Transportation:** The move to electric vehicles, which is backed by both public and private funding, reduces urban pollution and promotes low-carbon development.
- **Forestry:** Improving carbon sequestration is the goal of increasing green cover and managing forests.

The Road to Carbon Neutrality: Obstacles

There are significant barriers to reaching net-zero and making the shift to a green economy:

- **Financing:** Infrastructure, technical innovation, and renewable energy all demand significant financial outlays. International assistance and concessional financing are especially necessary for developing economies.
- **Technology Transfer:** It is frequently difficult to obtain cutting-edge technologies for resource-efficient industry and renewable energy.
- **Frameworks for regulations and policies:** Clear and stable regulations are necessary to encourage long-term investments and private sector participation.
- **Social impacts:** As sectors decarbonize and communities acquire new skills, ensuring a “just transition” entails protecting jobs and means

of subsistence.

- Data and accountability: Clear data and strong governance are necessary for tracking environmental effects and guaranteeing corporate responsibility.

Possibilities in the Green Transition

The green economy opens up a lot of potential despite obstacles:

- The development of green jobs and green business ventures in waste management, renewable energy, sustainable agriculture, and green infrastructure.
- Increased resource security by replacing limited materials and increasing efficiency.
- Improved public health as a result of less pollution in the air and water.
- Favorable investment environment as international finance conforms to ESG (Environmental, Social, and Governance) norms.

Routes and Policy Suggestions

The following tactics are essential for a successful shift to carbon neutrality through the green economy:

- Increase infrastructure and sustainable energy expenditures significantly.
- Encourage collaborations between the public and commercial sectors for sustainable development and innovation.
- Accelerate circular economy strategies to get rid of trash and manage resources effectively.
- Improve education, training, and skills for the green economy workforce.
- To internalize environmental costs, put in place strong carbon markets, pricing, and regulatory frameworks.
- Boost global cooperation, particularly in the areas of technology and financial flows between the North and the South.

What India can learn from other countries ;

The EU's Emissions Trading System (ETS), covering about 40% of GHG emissions, offers a model for India's CCTS .Its clear pricing and robust MRV systems ensure market integrity. India can adopt similar

transparent standards .China achieved 1200 GW renewable capacity by 2024 through a state- led investments. India can mimic China's focus on domestic manufacturing to reduce reliance on imported solar components. Costa Rica achieved 99% renewable electricity through hydropower and geothermal. India can diversify its renewable mix by scaling small hydro-power and nuclear components.

In conclusion

The green economy offers a comprehensive policy strategy to match social inclusion, environmental stewardship, and development goals. Aiming for carbon neutrality is not only an environmental goal; it also promotes economic modernization, technical advancement, and an enhanced standard of living. India's journey exemplifies the transformative power of the green economy for a sustainable future, as it is rooted in bold policies, resilient innovation, and equitable prosperity.

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Funding:

This study was not funded by any grant.

Conflict of interest:

The Authors have no conflict of interest to declare that they are relevant to the content of this article.

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