



Editorials/Opinions Analyses for UPSC – 22 April 2021

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1. A low-carbon future through sector-led change
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[A low-carbon future through sector-led change](#)

Context:

In the build-up to the 'Leaders' Climate Summit' organised by the United States, there has been a flurry of articles about whether India should announce a 'net-zero' emissions target, and by when.

Relevance:

GS-III: Environment and Ecology (Climate Change, Conservation of the Environment, Pollution control and Management, Important Agreements and Treaties for Environmental Conservation)

Mains Questions:

What are the challenges in achieving carbon neutrality in India? What steps can India take towards providing a framework to drive low-carbon transformation? (15 marks)



Dimensions of the Article:

1. What is Net-zero or Carbon Neutrality?
2. Need for 'net-zero': Current state of emissions
3. Concerns and Arguments regarding India's declaration of Net-Zero
4. India's Progress so far
5. Way Forward: What must India do?
6. Conclusion

What is Net-zero or Carbon Neutrality?

Carbon neutrality means having a balance between emitting carbon and absorbing carbon from the atmosphere in carbon sinks. Removing carbon oxide from the atmosphere and then storing it is known as carbon sequestration. In order to achieve net-zero emissions, all worldwide greenhouse gas emissions will have to be counterbalanced by carbon sequestration.

[Click Here to learn "What is carbon neutrality?" and to understand the net-zero goal / carbon-neutrality](#)

Need for 'net-zero': Current state of emissions

- The Intergovernmental Panel on Climate Change (IPCC) 1.5°C report called for global carbon emissions to reach netzero by 2050. But estimates suggest that current nationally determined contributions (NDCs)—as envisioned under the Paris Agreement of 2015—are not enough to bring down the rise in average global temperature to the target of 2°C, leave alone the stretch goal of 1.5°C. More ambitious revisions to NDCs, as required every five years, have not been comprehensive enough.
- Hence, Levels of ambition must be roughly tripled for the 2°C pathway and amplified at least five-fold to meet the 1.5°C target, according to the Emissions Gap Report 2020.
- In all, more than 120 countries have announced plans for net-zero emissions by 2050, including China, Japan, South Korea, South Africa and Canada.
- India – Currently, the world's third-largest emitter, accounting for 7.1% of global GHG emissions, had its Greenhouse Gas (GHG) emissions falling by 6–10% in 2020 from 2019, according to Climate Action Tracker (CAT).



Concerns and Arguments regarding India's declaration of Net-Zero

The growing popularity of carbon neutrality seems to ignore the fact that the achievement of carbon neutrality is not compatible with achieving the 1.5°C goal.

The hollowness of nation-level carbon neutrality declarations by developed countries is brought out by a detailed understanding of the emission data.

[Click Here to read more about the Concerns with respect to carbon neutrality calls by India and Arguments against India declaring carbon neutrality goal](#)

India's Progress so far

- India has made considerable progress in its efforts towards decoupling economic growth from greenhouse gas emissions.
- According to the third Biennial Report submitted to the United Nations Framework Convention on Climate Change (UNFCCC) in February 2021, India's emission intensity of gross domestic product (GDP) has reduced by 24 per cent between 2005 and 2016, thereby achieving its voluntary goal to reduce the emission intensity of GDP by 20-25 per cent from 2005 levels, earlier than the target year of 2020.
- In 2015, India further raised ambition in its nationally determined contributions (NDC) to reduce the emission intensity of its GDP by 33-35 per cent below 2005 levels by 2030.
- India's share of non-fossil fuel-based energy resources in installed capacity of electricity generation has already reached 38 per cent against an NDC target of 40 per cent by 2030.
- India also announced a target of achieving 175 GW of renewable energy capacity by 2022, which was subsequently enhanced to 450 GW by 2030.

Way Forward: What must India do?

Considering Environment and Economy



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- India is one of the most vulnerable countries to the impacts of climate change — with its vast population that is dependent on climate-sensitive sectors for livelihood. Hence, it is not viable in the context of a global climate crisis to say that India will do less than the richer countries.
 - Yet, announcing an Indian 2050 net-zero commitment risks taking on a much heavier burden of de-carbonisation than many wealthier countries. This could seriously compromise India's development needs to tackle poverty – as Economic development is crucial to alleviate poverty and usher in sustainable income growth.
 - Thus, environmental degradation and climate change cannot be an afterthought; rather, they should be pillars of India's development strategy. India needs to strike a balance and move towards a green economy.

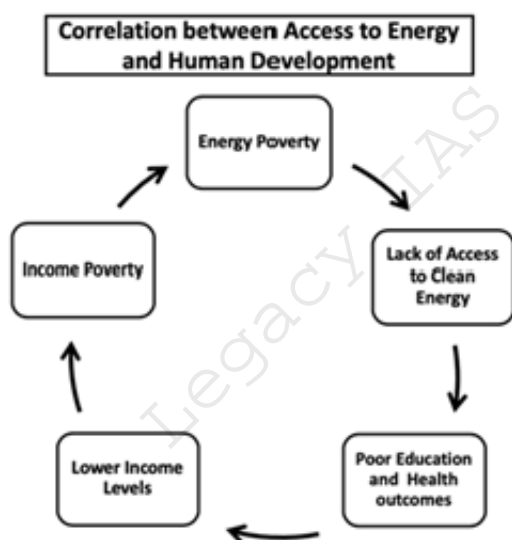
Sector-wise changes

- One of the ways going forward for India is to adopt sectoral “low-carbon development” pathways through aggressive adoption of technologies that combine competitiveness, job creation, distributional justice and low pollution in key areas where India is already changing rapidly.
- There is a need for De-carbonising the electricity sector, which is the single largest source (about 40%) of India's greenhouse gas emissions and India has made a commitment that we will have around 60% of our installed electricity generation capacity from clean sources by 2030.
- So far, our efforts in the electricity sector have focused on expanding renewable electricity capacity, with targets growing by leaps and bounds from 20GW of solar to 175GW of renewable capacity by 2022, further growing to 450GW of renewable capacity by 2030.
- India now needs to shift gears to a comprehensive re-imagining of electricity and its role in our economy and society. The elephant in the room is coal, critical for India's immediate energy needs, but a major contributor to emissions.
- India needs to go beyond expanding renewables to limiting the expansion of coal-based electricity capacity. This will not be easy, as Coal accounts for roughly 62% of the electricity today while supporting the economy of key regions and is also tied to sectors such as banking and railways.
- A first and bold, step in this direction would be to pledge that India will not grow its coal-fired power capacity.
- A low-carbon electricity future will not be realised without addressing existing problems of the sector such as the poor finances and management of distribution companies, which requires deep changes and overcoming entrenched interests.
- India needs to undertake transformational changes in urbanisation and industrial development, for example by expanding the use of electricity for transport, and by integrating electric systems into urban planning.
- Enhancing the efficiency of electricity use is an important complement to decarbonising the electricity supply. Growing urbanisation and uptake of electricity services offer a good opportunity to shape energy consumption within buildings through proactive measures.

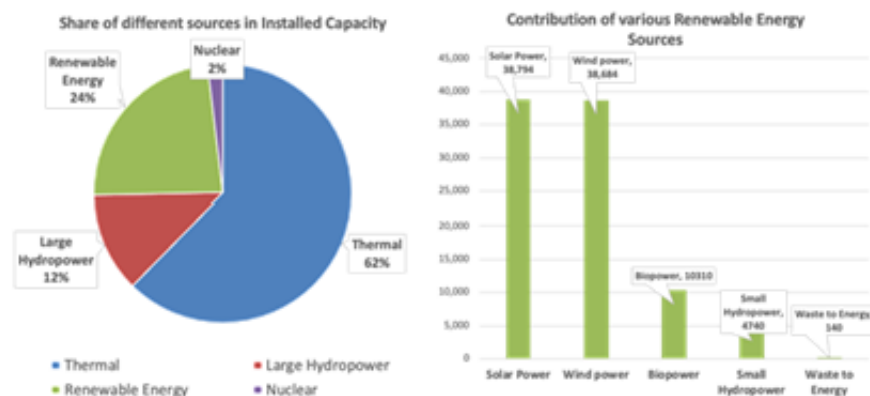


- India can set aggressive targets of, say, 80% of air conditioner sales, and 50% of fan and refrigerator sales in 2030, being in the most efficient bracket. In addition to reducing greenhouse gas emissions, this would have the benefit of lowering consumer electricity bills. India can leverage this transition too as an opportunity to become a global leader in the production of clean appliances.
- There is also the need for incentivizing clean energy sources such as hydrogen through private partnership incubation and advancement in promising
- Expansion of tree cover in cities, Green rules for new residential and commercial property and retrofitting of older buildings will also enhance environment-friendly urban living.

Challenges in Implementation



- Even though India accounts for 18% of the world's population, it uses only around 6% of the world's energy. India's per-capita energy consumption is one-third of the global average. There is also a wide disparity between urban and rural areas in access to energy.



Conclusion

- Such a sector-by-sector approach, which can and should be developed for other sectors. Going further, India may even consider committing to submit plausible pathways and timelines to achieving net-zero emissions as part of its future pledges.
- This would allow India adequate time to undertake detailed assessments of its development needs and low carbon opportunities, the possible pace of technological developments, the seriousness of the net-zero actions by developed countries, and potential geopolitical and geo-economic risks of overdependence on certain countries for technologies or materials.
- India can also use this period to develop a strategic road map to enhance its own technology and manufacturing competence as part of the global clean energy supply chain, to gain benefits of employment and export revenues. Such an integrated approach, which is ambitious, credible and rooted in our developmental needs — including climate mitigation needs — will represent an ambitious, forward-looking and results-oriented India.

-Source: *The Hindu*