Net Zero Emissions by 2050 and India

What is the issue?

With increasing emphasis on achieving the net-zero emission target by 2050, here is an assessment of its suitability for India.

What is net-zero emissions?

- The net-zero emission target aims that by 2050, the net carbon emissions of the countries would be balanced by carbon sequestration and removal to the same extent.
- It should thus contribute net-zero carbon to the environment.
- This would help keep the rise in temperatures to within 1.5oC of the pre-Industrial Revolution temperature, thus preventing climate change.
- Europe, Japan and South Korea have announced net zero by 2050, and China before 2060.

How does it suit India's case?

- The power generation capacity in India is about 380 GW.
- Of this, about 62% is thermal (mainly coal, 53% of total).
- The celebrated Hechsher-Ohlin theorem tells that a country's competitive advantage should be based on its abundant resource.
- As known, India is abundant in coal.
- In this light, adopting a net-zero carbon goal by 2050 would be a sub-optimal strategy for India.

Why is net-zero by 2050 unfeasible for India?

- India is the third-largest carbon emitter in the world, after China and the US.
- However, Indian per-capita carbon emissions are an eighth of those of USA and less than a third of China.
- The developed countries have used the emissions route to development, while India is still developing.
- Also, any substantive compensation mechanism from the developed world to the developing world in terms of finances and technology has not materialised.

- So, any pre-mature adoption of the net-zero targets will mean that the vast proportion of India's population remain in poverty for generations.

What alternatives does India have?

- India is already among the very few countries which are well on their path to achieving their voluntary Nationally Determined Contributions (NDCs).
- This is part of the Paris Accord (Conference of Parties 21, or COP 21, Paris, 2015).
- This includes decreasing the carbon intensity of its GDP by 33-35% compared to 2005 levels by 2030.
- Also, the non-fossil fuel capacity of the total electricity capacity of the country would have to go up to 40% by 2030.
- Also, the country has accordingly planned for renewable capacity of 450 MW by that year.
- There is progress in solar power sector such as grid parity and favourable auction prices.
- So, the renewable energy (RE) transition is already helping achieve India's voluntary obligations aimed at preventing disastrous climate change.

What are the challenges though?

- The relentless rise of renewables has thrown up a number of challenges which would become more acute as the RE proportion increases.
- Important among them is the increasing financial unsustainability of the power distribution sector, dominated by the public sector distribution companies (discoms).
- Competition in power distribution will increase because of the coming of age of RE.
- So, the largest and the best consumers of the discoms would start to source power from the cost effective RE sources, using open access in power distribution.
- The problem is that this would lead to decreasing demand of power from the discoms.
- Consequently, there would be lower capacity utilisation (plant load factor is already below 54% currently) in the power generation sector.
- While this is true, the discoms have already entered into long-term power purchase agreements with mainly thermal and coal-based power generating companies.
- So, they would have to pay the fixed cost of power, further adversely

affecting their financials.

- This would lead to more stranded thermal power assets, adding to the non-performing asset (NPA) problem of the banks.
- The cost of these would ultimately devolve on the government.

What should be the optimal strategy given these?

- Continuing with coal-first strategy would mean loss of cost competitiveness and increasing financial unsustainability of the sector.
- Also, there would be increasing challenges to financing new coal-based power plants by financial institutions owing to environmental, social and governance (ESG) considerations.
- On the other hand, pushing more RE (say, tidal power and offshore wind) based on subsidies would make the discoms more financially unsustainable.
- So, the optimal strategy may be to stop all subsidies for all sources of power, including large hydro, where the capital costs are estimated at over Rs 10 crore per MW.
- In place, the market forces should be allowed to take charge.
- This is likely to result in more share for RE because of its increasing cost competitiveness, with consequent impact on conventional coal-based power.
- Nevertheless this can be allowed. E.g. in Britain, the share of electricity generated by coal fell from 40% in 2013 to 2% in H1 2020.
- This strategy would imply that there is no forced adoption of net-zero commitments by 2050 by India.

Source: Financial Express

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