

## **Decarbonisation of Indian Economy**

### **What is the issue?**

India's announcement of achieving net-zero emissions by 2070 has highlighted the importance of decarbonising the economy but the road ahead will be challenging.

### **What is decarbonisation and what will be the impacts?**

*Decarbonisation is the process of reducing the amount of carbon, mainly carbon dioxide (CO<sub>2</sub>), sent into the atmosphere.*

- Industrial decarbonization will propel India towards a sustainable future and further towards deep decarbonisation but it also causes loss to several players.
- People working in fossil fuels and energy production, heavy industry and the vehicle manufacturing sectors are expected to be significantly impacted in the coming decades.
- Steel, petrochemicals, aluminum, cement, and fertilizer sectors are hard to abate sectors and cleaner pathways are yet to prove themselves economically.
- Besides maintaining global competitiveness, heavy industries due to their longer lifespan they cannot retire their existing machinery and switch to green fuels due to associated costs very quickly.
- Another problem with heavy industries is the requirement of high temperature heat (>500 Degree Celsius), which can only be provided by burning fossil fuels.

**Figure 1: Industrial decarbonization challenges**



### **What approach is needed for decarbonisation of economy?**

- **Breaking up into shorter periods** - By 2070, there will be many changes in technology, environmental conditions and the economy.
- The planning horizon of about 50 years will need to be broken up into shorter periods so that new knowledge about emerging technologies can be incorporated into plans.
- Five years, as the UK has used seems reasonable.
- **Setting up an autonomous agency** - A technically credible agency like the Climate Change Committee (CCC) in the UK should be set up.
- Its members should be recognised experts in their fields to provide independent advice to the government regarding long-term and interim (five-year) targets.
- It would also monitor progress and annually report and suggest mid-course corrections.
- **Targeting the power sector** - The power sector has to be focussed because it is the biggest source of GHG emissions and also the easiest one to decarbonise.
- It would be best to have a single emissions-related objective so that an optimal strategy can be developed at the lowest cost.
- Setting permissible emission intensity in terms of grams of carbon dioxide equivalent per kWh of electricity sold would be a good option for targets in the power sector.

*India is anticipating that 80-85% of the country's electricity demand will be met from renewable sources by 2050.*

- **Need for a Coordinated Approach** - There are separate targets for

almost every resource such as solar, non-solar renewable energy, hydropower, etc.

- It reduces the flexibility of distribution companies to select resources to meet their loads resulting in a non-optimal resource mix and a higher cost of electricity.
- India needs a coordinated approach for decarbonisation of economy.

**Figure 2: Possible pathways for decarbonizing India's industrial sector**



**Clear road map with sector-specific targets**

Including industry-specific targets and strategies in the Nationally Determined Contributions



**Expanding the decarbonization umbrella**

Including MSMEs under the decarbonizing umbrella through policy intervention such as PAT scheme



**Technology transfer**

Platform for facilitating knowledge and technology transfer through innovative partnerships with European countries such as UK



**Promoting circular economy**

To ensure sustainability in terms of reducing process emissions and waste management

## References

1. <https://indianexpress.com/article/opinion/columns/india-economy-decarbonisation-climate-change-7626309/>
2. <https://energy.economictimes.indiatimes.com/news/power/opinion-why-industrial-decarbonization-is-an-opportunity-for-india-to-fight-climate-change/82052996>



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