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_2), 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

References

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