

Transition to clean energy

What is the issue?

\n\n

Ensuring access to affordable, reliable, sustainable and modern energy for all is critical, but this challenge is far from being met.

\n\n

What is the present scenario?

\n\n

\n

- The global energy system relies on fossil fuels to provide 80% of total primary energy consumption, and is responsible for about 75% of total greenhouse gas emissions.

\n

- The expansion of an unchanged energy system, at anything close to current levels of CO₂ intensity, would likely lead to over 40 C of global warming by the end of the century.

\n

\n\n

What is the challenge?

\n\n

\n

- The challenge is to **build a clean energy system** that can simultaneously expand access to modern energy services on an affordable basis and tackle the environmental challenges.

\n

- So, a global energy system capable of delivering **80 GJ per capita across the world but emitting no more than 20 GT of CO₂ by 2040** is needed.

\n

- Such a transition in the energy system will depend on simultaneously **achieving four crucial transitions:**\n

\n

- decarbonisation of power combined with extended electrification;

\n

- decarbonisation of activities which cannot be easily electrified;
- \n
- acceleration in the pace of energy productivity improvement; and
- \n
- optimisation of fossil fuel use within overall carbon budget constraints.
- \n

\n

\n

\n\n

What are the scenarios?

\n\n

\n

- Global research shows that the cost of firm renewable electricity (renewable electricity + battery) is on a steady decline and would stabilise at around \$70 per MWh, or about Rs 5 per kWh.
- \n
- **If this price goal is achieved**, or nearly achieved, by 2023-24, and if appropriate infrastructure to absorb large amounts of renewable energy is in place, then all new capacity addition could be based on RE.
- \n
- On the other hand, **if this price goal is not achieved**, the growth in demand would be largely met by new coal capacity additions, with a limited number of new renewables.
- \n
- In this low renewables scenario, an additional 115 Mw of coal capacity would come online between 2026 and 2030.

\n

\n\n

What could be done?

\n\n

\n

- The RE target can only be realised by focusing on multiple fronts of the RE ecosystem such as **indigenous manufacturing, project management, and grid integration**.
- \n
- Growth in indigenous manufacturing of RE components can coincide with the growth in RE installations.
- \n
- The focus should be on **increasing the competitiveness** of Indian manufacturers on a par with international players.

\n

- This can be done via incentivising development of new production technology which can reduce cost, lowering cost of finance, **long tenured loans for RE production units**, and higher allocation for R&D on RE technologies, along with industry-wide collaboration for reducing time of commercialisation.

\n

- The Indian grid must adapt to the new challenges of high installed base of variable RE sources.

\n

- The focus should be on **developing more efficient evacuation infrastructure**, forecasting infrastructure of RE, developing balancing capability and introducing market mechanisms.

\n

\n\n

\n\n

Source: Business Standard

\n

