

# 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

 $\circ\,$  decarbonisation of power combined with extended electrification;  $\n$ 

- $\circ\,$  decarbonisation of activities which cannot be easily electrified;
- \n
- $\circ$  acceleration in the pace of energy productivity improvement; and
- $\circ$  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

## 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.
- 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

#### **Source: Business Standard**

