Unviability of New Coal-Based Power Plants

Why in News

According to a recent report prepared by two independent think tanks, EMBER and Climate Risk Horizons, India **does not require additional new coal capacity** to meet expected power demand growth by Financial Year (FY) 2030.

Key Points

- **Highlights of the Report:**
    - India's **peak power demand would reach 301 GW by 2030**, if it grows at an annual growth rate of 5% (which is also in line with projections made by the **Central Electricity Authority**), **India's planned solar capacity can cover much of it.**
    - Therefore, **adding new coal plants will lead to "zombie" units** – ones which will exist, but not be operational.
    - Further, India can **free up nearly Rs 2.5 lakh crore** by not investing in these surplus plants.
    - Once incurred, these wasted investments **will lock DISCOMs** (power distribution companies) and **consumers into expensive contracts** and **jeopardise India's Renewable Energy goals** by adding to the system's overcapacity.
    - Further, it will **lead to the loss of annual savings of Rs 43,219 crore** that India makes by investing in renewables and storage.
    - Thus, the report concludes that more coal capacity beyond what's already under construction isn't needed to meet the aggregate demand growth by FY 2030.

- **Factors Responsible for Solar Energy Over Coal Based Power Plants:**
  - The disruption in the power sector owing to replacement of thermal based generation with Solar energy generation is possible with the **downward trend of cost of solar panels.**

    Moreover, the **newer technology options** like battery energy storage systems will further promote solar energy.
  - The world is **focusing on environmental issues**, especially climate change and therefore the idea of growing sustainably has taken centre stage globally.
    - Towards realizing the objective of carbon free energy, India has set for itself a target of installed capacity of **175 GW from Renewable Energy** Sources (RE) by March 2022.
      - In pursuance of this, India has established the **International Solar Alliance** and proposed **One Sun One World One Grid**.
  - Government Policy of active promotion of Solar energy through schemes like **PM KUSUM**, **Rooftop Solar Scheme**, etc.
- **Importance of Continuing Coal Based Power Plants:**
  - According to **BP Energy Outlook 2019**, coal's share in India's primary energy consumption will decline from 56% in 2017 to **48% in 2040.**

    However, that is s**till nearly half of the total energy mix** and way ahead of any other source of energy. Thus, it is not easy to replace coal very easily.
  - **Issues related to land acquisition, funding and policy** continue to come in the way of renewable energy plans.
  - Apart from the power sector, **other critical sectors** like steel and aluminium also depend on coal based power.
  - Further, the capacity value of the coal based power plants is critical to meet **instantaneous peak load**, and to meet load **when renewable energy is unavailable.**
  - Further, India had initially set a 2017 deadline for thermal power plants to install **Flue Gas Desulphurization (FGD)** units that cut emissions of sulphur dioxides. But that was postponed to varying deadlines for different regions, ending in 2022.

Way Forward

- **Optimal Energy Mix in Power Generation:** Power is generated through various sources of energy such as coal, hydro, natural gas, and renewables (solar, wind). An optimal energy mix is one that uses a mix of these generation sources in the most efficient manner. This gains tremendous importance as the future generation capacity mix should be cost effective as well as environmentally friendly.
- **New Technologies for Coal Based Units:** The government has commissioned more efficient supercritical coal based units and old and inefficient coal based capacity is being retired. A range of new technologies (like **Coal gasification**, **Coal beneficiation**, etc.) can be deployed to make coal-fired power plants more environmentally compatible.

Source: IE