Rajasthan Inaugurates 435 MW Solar Power Plant

Why in News?

The Union Minister for New and Renewable Energy inaugurated the 435 MW **Gorbea Solar Power Project in Rajasthan's Bikaner district**, marking a significant milestone in India's renewable energy journey.

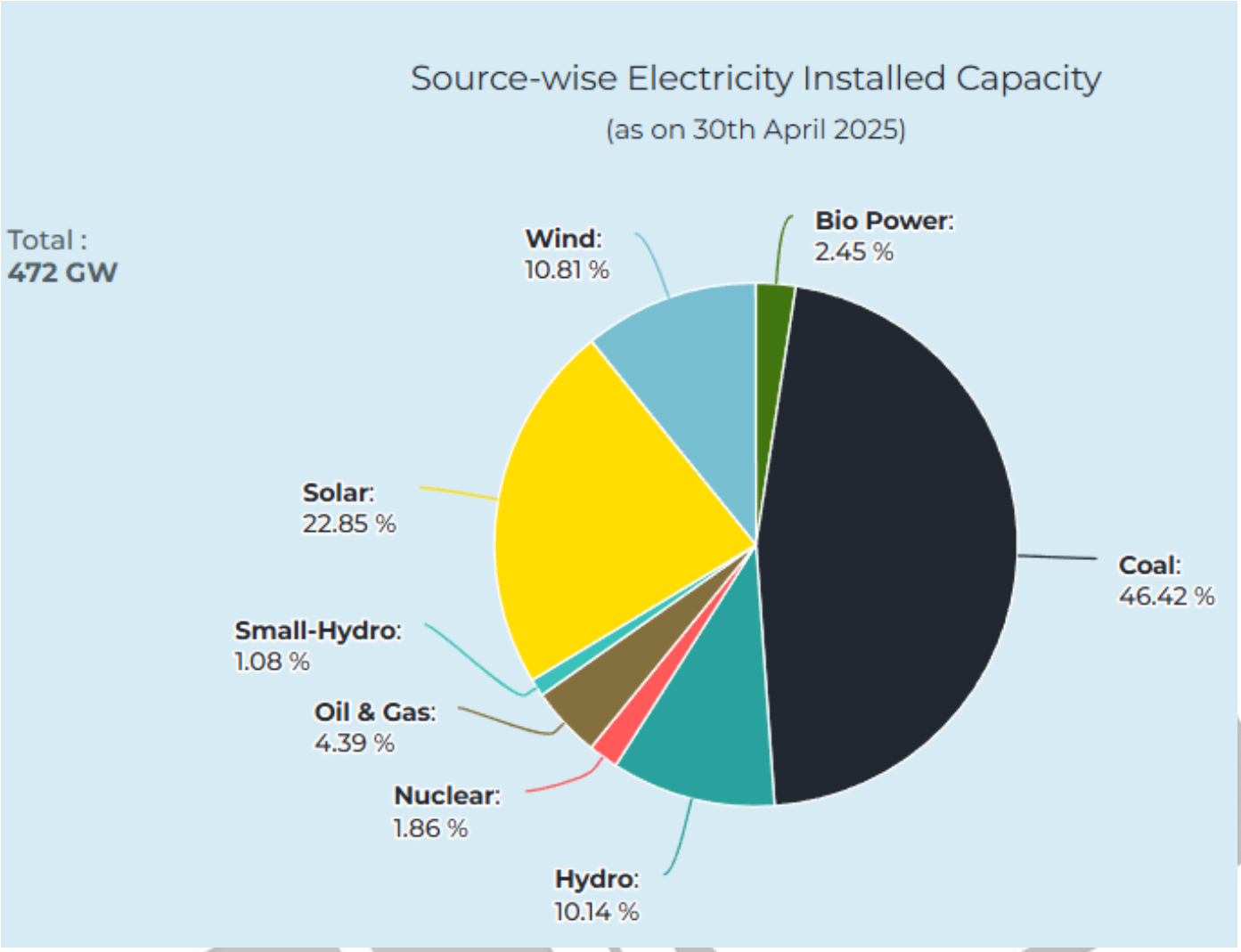
Key Points

- The project spans 1,250 acres and will produce 755 GWh of clean electricity annually (prevent 705,000 tonnes of CO_2 emissions each year), meeting the needs of approximately 128,000 households.
    - The project features over **1,300 robotic cleaning units to maintain module efficiency**.
- **Rajasthan's renewable energy capacity now comprises 70% of its total power capacity,** including 29.5 GW from solar power and 5.2 gigawatts from wind, positioning the state as a leader in India's green energy push.
    - As per the Ministry of New & Renewable Energy (as of June 2025), **Rajasthan (31,967 MW),** Gujarat (21,451 MW), and Maharashtra (12,575 MW) are the leading **states in terms of installed solar energy capacity.**
        - **Gujarat (13,816 MW),** Tamil Nadu (11,830 MW), Karnataka (7,714 MW), Maharashtra (5,307 MW), **and Rajasthan (5,208 MW) are the leading states in wind power generation.**
    - **Rajasthan's Integrated Clean Energy Policy 2024,** which aims to achieve **125 GW of renewable energy capacity by 2030.**
- With **India reaching 50% of its total installed power capacity from non-fossil sources**, **five years ahead of the 2030 deadline**, the Gorbea project highlights the country's commitment to environmental sustainability, climate goals, and economic growth through its transition to clean energy.

Note:

- **New Waterless Solar Panel Cleaning Method**: Massachusetts Institute of Technology (MIT) engineers developed a waterless, no-contact cleaning method using electrostatic repulsion to remove dust from solar panels.
- A simple electrode passes above the solar panel's surface, imparting an electrical charge to dust particles, which are then repelled by a charge on the panel, causing them to detach and virtually leap off the surface.

India's Energy Mix

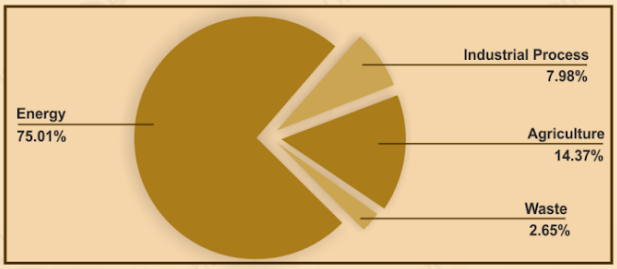


India‘s Climate Goal

INDIA'S CLIMATE PROFILE

Sector-wise Contribution

- **Key Emitting Sectors:** Energy, Transportation, Construction



- **Key Climate Risks:** Floods, Droughts, Heat Waves, Cold Waves and Cyclones
- **Vulnerable Sectors:** Agriculture & Food, Water, Coastal, Health, Forests & other natural ecosystems

Key Initiatives for Tackling Climate Change

- **National Policy Framework**
  - National Action Plan on Climate Change (NAPCC)
  - State Action Plan on Climate Change (SAPCC)
- **India's Updated Nationally Determined Contributions (2022)**
  - Mass movement for 'LIFE'– Lifestyle for Environment
  - Adopt a climate-friendly and cleaner path for economic development
  - 45% reduction in emissions intensity of GDP by 2030 compared to 2005 levels, aiming for net-zero emissions by 2070
  - 50% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030
  - Additional carbon sink of 2.5 to 3 billion tonnes of CO_2
  - Better adapt to climate change by enhancing investments in specific sector
  - Mobilise domestic and new & additional funds
  - Build capacities, create domestic framework and international architecture
- **International Climate Negotiations - UNFCCC (1994) Convention and Agreements**
  - Paris Agreement (2015)
  - Kyoto Protocol (2005)

Bilateral and Multilateral Cooperation

Bilateral Projects

- **With Deutsche Gesellschaftfür Internationale Zusammenarbeit (GIZ) GmbH (Germany)**
  - Climate Adaptation & Finance in Rural India (CAFRI) (2020-2023)
  - Nationally Appropriate Mitigation Actions (NAMAs) (2007)
  - Global Carbon Market (GCM) (1997)
  - Institutionalisation of Capacities on Climate Change Studies and Action (ICCC)
- **With European Union (EU)**
  - Strategic Partnerships for the Implementation of the Paris Agreement (SPIPA) (2018-2022)
  - Clean Technologies and Energy Efficiency for Eco-Cities

Multilateral Projects

- **UN Secretary-General (UNSG) Climate Action Summit (2019)**
- **Global Commission on Adaptation (GCA) (2018)**
- **UNDP:** Market Transformation and Removal of Barriers for Effective Implementation of the State-Level Climate Change Action

Drishti IAS