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India Crosses 520 GW — Renewable Energy Milestone and the Road to 2030

27 February 2026

SUBJECTS COVERED

ECONOMY ENVIRONMENT REPORTS & SCHEMES

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India Crosses 520 GW — Renewable Energy Milestone and the Road to 2030

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WHY IN NEWS

India's total installed power capacity crossed 520 GW in February 2026, with more than half now sourced from non-fossil fuels — a landmark in the country's energy transition, announced at the India Energy Transition Summit 2026 organised by FICCI.

INDIA'S POWER CAPACITY — THE NUMBERS

Total Installed Capacity (February 2026): >520 GW

Source	Approximate Share
Solar	~100+ GW (more than tripled in recent years)
Wind	~50+ GW
Hydro	~47 GW
Nuclear	~8 GW
Non-fossil total	**>260 GW (>50%)**
Coal + Gas + Others	<260 GW (<50%)

This is a historic inflection point: **for the first time, more than half of India's installed power capacity is from non-fossil sources.**

CONTEXTUAL TIMELINE

2014: Total installed capacity ~250 GW; renewable share ~30%

2019: Total ~356 GW; renewable growing rapidly

2022: Total ~400 GW; solar crossing 60 GW

2026: Total **>520 GW**; non-fossil **>50%**

In less than 12 years, India has **more than doubled** its power capacity — an extraordinary infrastructure achievement.

KEY POLICY DRIVERS

NATIONAL SOLAR MISSION (NSM)

Launched in 2010 under the **National Action Plan on Climate Change (NAPCC)**, the NSM set India on a trajectory of aggressive solar deployment. Target history:

2010 target: 20 GW by 2022

Revised 2015 target: 100 GW by 2022 (achieved in 2023)

Current target: **500 GW non-fossil capacity by 2030**

PM SURYA GHAR YOJANA

Launched in 2024 to install **rooftop solar for 1 crore households**, with capital subsidies of ₹30,000–78,000 per household depending on system size. It democratises solar energy — moving beyond utility-scale to distributed generation.

GREEN ENERGY CORRIDORS

Green Energy Corridors (GEC Phase I and II): Transmission infrastructure to evacuate renewable power from renewable-rich states (Rajasthan, Gujarat, Andhra Pradesh, Tamil Nadu, Karnataka) to demand centres. GEC Phase I: 9,700 circuit km transmission lines, completed. Phase II: 10,750 circuit km, ongoing.

ULTRA-MEGA RENEWABLE ENERGY PARKS

Large-scale parks in solar-rich desert and semi-arid regions — notably the **Khavda Solar Park** (Gujarat, 30 GW) which will be the world's largest when complete, and **Bhadla Solar Park** (Rajasthan, 2,245 MW, currently world's largest).

COMPETITIVE BIDDING

India's **reverse auction mechanism** for renewable power has driven solar tariffs from ₹12+/unit in 2010 to **under ₹2/unit** in recent auctions — among the cheapest solar power globally.

INDIA'S CLIMATE COMMITMENTS

India's **Nationally Determined Contribution (NDC)** under the **Paris Agreement** (2015) commits to:

500 GW non-fossil capacity by 2030 ✓ (on track)

50% of cumulative electric power installed capacity from non-fossil sources by 2030 ✓ (achieved ahead of schedule)

Reduce emission intensity of GDP by 45% by 2030 (vs 2005 baseline)

Net-zero emissions by 2070

India updated its NDC in 2022 (revised upward) and submitted its Biennial Transparency Report (BTR) in 2024 showing progress on track.

CHALLENGES AHEAD

GRID INTEGRATION

Variable renewable energy (solar peaks at noon, wind is intermittent) creates **grid balancing challenges**. India needs:

- Large-scale **battery storage** (BESS — Battery Energy Storage Systems)
- **Pumped hydro storage** (PSP) — India has significant potential
- Demand flexibility through **smart meters and time-of-use tariffs**
- **Green hydrogen** as seasonal storage

ELECTRICITY DISTRIBUTION COMPANIES (DISCOMS)

India's state-owned electricity distribution companies (DISCOMs) are chronically indebted (aggregate debt: ~₹6 lakh crore). They are reluctant to sign long-term Power Purchase Agreements (PPAs) for renewable energy at competitive prices because of their financial fragility. DISCCOM reform is the weakest link in India's energy transition.

ENERGY ACCESS

Despite 520 GW capacity, **energy poverty** persists — some rural areas still face irregular supply. The **Saubhagya scheme** (household electrification) connected 2.86 crore households but last-mile supply quality remains a challenge.

COAL DEPENDENCY

Despite the renewable surge, coal still provides **~70% of India's electricity generation** (not capacity — capacity and generation are different). Most renewable capacity has lower capacity utilisation factors than coal. India is the world's second-largest coal producer and consumer, and faces a just transition challenge.

GLOBAL CONTEXT

India now ranks:

- **3rd globally** in renewable energy capacity (after China and USA)
- **4th globally** in wind capacity
- **4th globally** in solar capacity

The **International Renewable Energy Agency (IRENA)** recognised India as one of the top emerging markets for renewable investment, attracting ~$15 billion annually in clean energy FDI.

UPSC RELEVANCE

520 GW milestone, PM Surya Ghar Yojana, Green Energy Corridors, NSM, NDC, IRENA, Khavda, Bhadla, DISCOM.

MAINS GS-3:

India's energy transition; Paris Agreement commitments; renewable energy policy; grid integration challenges.

INTERVIEW:

How should India balance coal phase-down with energy security and just transition concerns?

📌 FACTS CORNER — KNOWLEDGEPEDIA

INDIA POWER CAPACITY (FEBRUARY 2026):

Total: **>520 GW**

Non-fossil share: **>50%** (first time majority non-fossil)

Solar capacity: More than tripled in recent years (~100+ GW)

India's renewable ranking: **3rd globally** (after China, USA)

KEY TARGETS:

NDC 2030: **500 GW non-fossil** capacity (on track)

NDC 2030: **45% reduction** in emission intensity vs 2005

Net-zero target: **2070**

KEY SCHEMES:

National Solar Mission (NSM): Launched 2010 under NAPCC; targets 100 GW+ solar

PM Surya Ghar Yojana: Rooftop solar for 1 crore households; subsidy ₹30,000–78,000

Green Energy Corridors (GEC): GEC Phase I: 9,700 ckt km; Phase II: 10,750 ckt km

Bhadla Solar Park: Rajasthan; **2,245 MW** (currently world's largest operating solar park)

Khavda Solar Park: Gujarat; **30 GW** planned (world's largest when complete)

SOLAR TARIFF JOURNEY:

2010: **₹12+/unit** (expensive) → 2026: **<₹2/unit** (world's cheapest)

DISCOM PROBLEM:

Aggregate debt: **~₹6 lakh crore**

Reluctant to sign long-term PPAs; need structural reform

OTHER RELEVANT FACTS:

India's electricity generation from coal: **~70%** (despite 50% non-fossil capacity — capacity ≠ generation)

Saubhagya scheme: Connected **2.86 crore** rural households

IRENA: International Renewable Energy Agency; annual report tracks global capacity

India coal production: **2nd largest** globally (after China)

Paris Agreement: Adopted December 2015; entered force November 2016; India ratified October 2016

Sources: Ministry of Power, PIB, IRENA

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