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EDITORIAL ANALYSIS

The Year Renewables Pass Coal

 DOWN TO EARTH

19 July 2026

ENVIRONMENT

GS3

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THE LIFT LINE

A line is about to be crossed that seemed distant only a few years ago: the **International Energy Agency (IEA)** projects that renewable sources will overtake coal in global electricity **generation** in 2026. The milestone is real, but the next frontier is not building clean power, it is integrating it.

WHY THIS EDITORIAL MATTERS FOR YOUR EXAM

Energy is one of the densest GS3 themes, and the examiner tests whether a candidate can move past slogans to system detail. The crucial distinction is between **installed capacity** and actual **generation**, and this milestone is about generation, which is far harder to shift because the sun sets and the wind drops. For India, the story is not the target on paper but the physics of the grid, and answers that grasp integration, storage and firming stand out sharply from those that recite capacity figures.

GS Paper 3: Energy, infrastructure, renewable energy, climate change **mitigation** and the economics of the energy transition.

For **Prelims**, hold the specifics: the **IEA Electricity 2026** report projects renewable generation overtaking coal-fired generation globally in **2026**, with global electricity demand growing about **3.6 per cent**; India has crossed **100 GW of solar capacity**, with variable renewables from solar and wind together well above **150 GW**; India targets **500 GW of non-fossil capacity by 2030**; the **duck curve** describes the midday solar dip in net demand that steepens the evening ramp; **battery storage** and **grid flexibility** are the firming tools; **installed capacity** differs from actual **generation** because of capacity factors; and the **International Solar Alliance (ISA)** is the India-led coalition for solar deployment.

For **Mains**, the argument is that the generation milestone is genuine, but that integration, storage and firming, not raw capacity addition, are the decisive challenges ahead.

BACKGROUND AND CONTEXT

For most of the electric age, coal was the default source of power, the baseload workhorse that ran regardless of weather or time of day. Renewables were treated as a promising supplement. That framing is now inverting. Costs for solar and wind have fallen steeply, deployment has accelerated worldwide, and the **IEA** now projects that in 2026 renewable generation will, for the first time, exceed generation from coal.

The distinction between capacity and generation is what makes this significant. It is one thing to install solar panels; it is another for those panels to actually produce more electricity over a year than coal plants do. Because solar and wind have lower **capacity factors**, meaning they generate only when the sun shines or the wind blows, crossing the generation line takes far more installed capacity than a naive comparison suggests. That the world is crossing it anyway signals a structural shift in how electricity is made, even as demand itself grows by around 3.6 per cent.

THE CORE ARGUMENT / ISSUE

A milestone that is about generation, not just capacity

The headline is easy to misread. Renewables overtook coal in installed capacity some time ago in many systems, but generation is the harder test, because it measures energy delivered over time. Crossing it globally means the clean transition has moved from potential to output. India illustrates the same arc, having crossed 100 GW of solar capacity and over 150 GW of variable renewables on its way to a 500 GW non-fossil target for 2030.

The integration challenge

The problem with variable renewables is not that they are expensive but that they are intermittent. Solar floods the grid at midday and vanishes in the evening, producing the **duck curve**, a dip in net demand at noon followed by a steep evening ramp when solar fades and household demand peaks. Managing that ramp requires flexible resources that can dispatch power fast, and coal plants, ironically, have often been the ones doing it.

Storage and firming as the next frontier

The answer is to firm variable power so it behaves like reliable supply. **Battery energy storage** shifts midday solar into the evening peak; pumped hydro, demand response and a flexible, well-connected grid do the rest. Without this firming layer, adding more solar and wind yields diminishing returns and can even destabilise the grid. The generation milestone therefore hands over to a harder engineering and market-design task.

CONCEPT	WHAT IT MEANS	WHY IT MATTERS
Installed capacity	Maximum possible output	Overstates real clean supply
Generation	Energy actually delivered	The true measure of the transition
Duck curve	Midday dip, evening ramp	Demands fast, flexible firming
Battery storage	Shifts solar to peak hours	Converts variable power to firm power

HOW TO THINK ABOUT THIS (ANALYTICAL FRAME)

A tipping point is worth celebrating, but the exam reward lies in asking what makes the next step hard. Renewables overtaking coal in generation is the milestone; keeping the lights on as their share rises is the mechanism. When a candidate distinguishes the achievement from the enabling system, storage, flexibility and market design, the answer stops cheering and starts engineering. That discipline, always asking what has to work for a headline to hold, is transferable to any policy claim.

THE DIAGRAM IN WORDS

Falling solar and wind costs -> rapid deployment -> IEA projects renewables overtake coal in generation in 2026 -> but output is variable -> duck curve steepens the evening ramp -> firming needed -> battery storage + grid flexibility + demand response -> variable power behaves as firm power -> reliable clean grid

WAY FORWARD

- 1 **Scale storage aggressively.** Prioritise battery energy storage and pumped hydro so midday solar can be shifted into the evening peak, turning the duck curve from a threat into a manageable pattern.
- 2 **Build a flexible, connected grid.** Strengthen transmission, inter-regional links and demand-response markets so variable generation can be balanced across geography and time.
- 3 **Reform market design for firming.** Reward flexibility, ramping and reliability, not just energy volume, so the services that integrate renewables are properly valued and financed.
- 4 **Lead through the Solar Alliance.** Use the International Solar Alliance to spread storage, grid and integration know-how across the Global South, so the milestone becomes durable everywhere, not just on paper.

PYQ LINKAGE AND PRACTICE

UPSC has probed India's renewable targets, [energy security](#) and the challenges of the clean transition. This editorial sharpens those into the integration question: the milestone of renewables overtaking coal matters less than whether the grid can absorb them. Candidates who separate capacity from generation and grasp storage and firming will handle both the factual and the analytical dimensions of the energy syllabus.

Practice question: "The projection that renewables will overtake coal in global electricity generation in 2026 shifts the real challenge from capacity to integration." Examine with reference to India's grid, storage and firming needs. (15 marks, 250 words)

Sources: *Down To Earth*, *International Energy Agency*

Source: The Year Renewables Pass Coal — Ujjari.com | Free UPSC & State PCS Editorial Analysis

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