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India's Green Hydrogen Certification Portal (GHCI) and the National Mission

20 June 2026 · **ECONOMY** · **ENVIRONMENT** · **GS3**

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WHY IN NEWS

On June 18, 2026, Union Minister for New and Renewable Energy Pralhad Joshi launched the Green Hydrogen Certification Portal of India (GHCI) at a National Workshop. The portal operationalises the certification architecture of the National Green Hydrogen Mission and is central to India's ambition to become a global hub for green hydrogen production and exports.

BACKGROUND: THE NATIONAL GREEN HYDROGEN MISSION

The National Green Hydrogen Mission was approved by the Union Cabinet in January 2023 with a total outlay of **Rs 19,744 crore** up to 2029-30. It is implemented by the Ministry of New and Renewable Energy (MNRE) and aims to make India a leading producer and supplier of green hydrogen and its derivatives such as green ammonia and green methanol.

What Is Green Hydrogen?

Hydrogen is colour-coded by its production route:

TYPE	PRODUCTION ROUTE	CARBON FOOTPRINT
Grey hydrogen	From natural gas / fossil fuels without capture	High
Blue hydrogen	From fossil fuels with carbon capture	Moderate
Green hydrogen	Electrolysis of water using renewable electricity	Near zero at production

Green hydrogen is produced by splitting water into hydrogen and oxygen through electrolysis powered by renewable energy, making it virtually emission-free at the point of production. It is seen as essential for decarbonising hard-to-abate sectors such as refining, fertilisers, steel and long-haul transport.

MISSION TARGETS AND COMPONENTS

PARAMETER	TARGET / FIGURE
Outlay	Rs 19,744 crore (to 2029-30)
Green hydrogen production target	5 MMT per year by 2030
Associated renewable energy capacity	About 125 GW
SIGHT incentives awarded for	8,62,000 MTPA of capacity
States with dedicated hydrogen policies	Six
Nodal ministry	MNRE

A core instrument of the Mission is **SIGHT**, the Strategic Interventions for Green Hydrogen Transition programme, which provides financial incentives for both domestic manufacturing of electrolyzers and the production of green hydrogen. Incentives have already been awarded for capacity of 8,62,000 metric tonnes per annum (MTPA).

THE CERTIFICATION PORTAL (GHCI): WHY IT MATTERS

Green hydrogen commands a premium only if its “green” credentials can be trusted. The GHCI provides a credible, standardised mechanism to certify that hydrogen has indeed been produced with renewable energy within permitted emission thresholds.

Functions of GHCI

- **Verification** that hydrogen meets the defined emission intensity **threshold** (<https://ujjiyari.com/vocab/threshold/>) for “green” status.
- A transparent, digital trail from production to certification.
- Issuance of certificates that buyers, especially in export markets, can rely upon.
- Alignment with international standards so Indian hydrogen is accepted abroad.

The Export Imperative

Certification is not merely domestic housekeeping. Major markets are introducing carbon-accounting rules at their borders. The European Union's **Carbon Border Adjustment Mechanism (CBAM)** will levy charges on the embedded carbon of imports. A robust, internationally recognised certification regime allows Indian green hydrogen and its derivatives to enter such markets without carbon penalties, turning certification into a trade-enabling asset.

ANALYSIS: OPPORTUNITIES AND CHALLENGES

Opportunities

- Positions India as a competitive exporter as global demand for clean molecules rises.
- Supports the net-zero-by-2070 pledge and energy-security goals by cutting fossil import dependence.
- Catalyses a domestic electrolyser manufacturing ecosystem under the Make in India and Atmanirbhar Bharat frameworks.

Challenges

- High production cost of green hydrogen compared with grey hydrogen.
- Need for vast additional renewable capacity and water resources.
- Building storage, pipeline and port infrastructure for hydrogen and ammonia.
- Ensuring the certification standard is recognised by all key importing jurisdictions.

WAY FORWARD

- Drive down costs through scale, cheaper renewables and electrolyser manufacturing incentives.
- Negotiate **mutual recognition** of the GHCI standard with the EU, Japan, South Korea and other buyers.
- Develop dedicated green hydrogen hubs near ports and renewable-rich regions.
- Promote demand-side mandates in refining and fertilisers to anchor a domestic market.

UPSC RELEVANCE

Prelims: National Green Hydrogen Mission (year, outlay, nodal ministry); SIGHT full form; green hydrogen production route; 5 MMT by 2030 target; CBAM.

Mains (GS3): “Green hydrogen certification is as much a trade strategy as an energy policy. Discuss in the context of India’s National Green Hydrogen Mission and global carbon border measures.” Evaluate the role of green hydrogen in India’s energy transition and the challenges to scaling it.

FACTS CORNER

★ FACTS CORNER — KNOWLEDGEPEDIA

GHCI: Green Hydrogen Certification Portal of India; launched June 18, 2026 by Pralhad Joshi.

Mission: National Green Hydrogen Mission approved January 2023; outlay Rs 19,744 crore to 2029-30; nodal MNRE.

Target: 5 MMT of green hydrogen per year by 2030 with about 125 GW associated renewable energy.

SIGHT: Strategic Interventions for Green Hydrogen Transition; incentives awarded for 8,62,000 MTPA.

Green hydrogen: Produced by electrolysis of water using renewable electricity; near-zero emissions at production.

CBAM: EU Carbon Border Adjustment Mechanism; makes credible certification vital for exports.

States: Six states have dedicated hydrogen policies.

Sources: *Press Information Bureau* (<https://pib.gov.in>), *Ministry of New and Renewable Energy* (<https://mnre.gov.in>)

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