International Hydrogen Ramp-up Programme – H2Uppp

Bridging India's Green Hydrogen Certification to EU RFNBO

GHCI & RFNBO – Synergies & Differences and Why they matter

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H2Uppp International Hydrogen Ramp-up Program
igef Indo-German Energy Forum
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As a federally owned enterprise, GIZ supports the German Government in achieving its objectives in the field of international cooperation for sustainable development.

Published by:
Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

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Layout:
peppermint werbung berlin gmbh, Berlin

The International Hydrogen Ramp-up Programme (H2Uppp) of the German Federal Ministry for Economic Affairs and Energy (BMWE) promotes projects and market development for green hydrogen in selected developing and emerging countries as part of the National Hydrogen Strategy.

Berlin, Germany & New Delhi, India; June 2025

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Glossary

ACV	Accredited Carbon Verification
BEE	Bureau of Energy Efficiency
CBTE	Cross Border Trade of Electricity
CCTS	Carbon Credit Trading Scheme
CO_2eq	Carbon Dioxide Equivalent
CEA	Central Electricity Authority
DER	Distributed Energy Resource
e-Heat	Electric Heat
FY	Financial Year (for India: April to March)
G-DAM	Green Day-Ahead Market
GEF	Grid Emission Factor
GHCI	Green Hydrogen Certification Scheme of India
GHG	Greenhouse Gas
GO	Guarantee of Origin
GRO	Guarantees of Remote Origin
H_2	Hydrogen
H_2Global	Hydrogen Global Auction Model (Germany)
IPCC	Intergovernmental Panel on Climate Change
LCA	Life Cycle Analysis
MNRE	Ministry of New and Renewable Energy
MRV	Monitoring, Reporting, and Verification
MT	Metric Tonne
NGHM	National Green Hydrogen Mission
PPA	Power Purchase Agreement
PtX	Power-to-X (Hydrogen and Derivatives)
REC	Renewable Energy Certificate
RED II/III	Renewable Energy Directive II/III (EU)
RE	Renewable Energy
RFNBO	Renewable Fuels of Non-Biological Origin
SCADA	Supervisory Control and Data Acquisition
SIGHT	Strategic Interventions for Green Hydrogen Transition
T&D	Transmission and Distribution
TWh	Terawatt-hour
UK LCHS	UK Low Carbon Hydrogen Standard

About Indo-German Energy Forum (IGEF)

The Indo-German Energy Forum (IGEF) was established by the Indian Prime Minister and the German Chancellor to enhance and deepen the strategic dialogue about the ongoing energy transition between India and Germany. The forum aims at initiating strategic cooperation projects between German and Indian governments, institutions, and the private sector. It aims at promoting cooperation in energy security, energy efficiency including energy conservation, renewable energy, investment in energy projects, and collaborative research and development in identified areas, considering the environmental challenges of sustainable development. The Support Office to the Indo-German Energy Forum (IGEF-SO) is implemented by GIZ and has been tasked provide liaison services for all stakeholders, identifies possible topics for dialogue and supports private sector projects.

About H2Uppp

The International Hydrogen Ramp-up Programme (H2Uppp) accompanies and supports efforts to ramp up the market for green hydrogen (H2) and Power-to-X (PtX) applications in India. The programme has been commissioned by the German Federal Ministry for Economic Affairs and Energy (BMWE). Unlike other hydrogen support initiatives, H2Uppp focuses on the early stages of green hydrogen project development. Green ammonia production has been identified as one of the first applications of green hydrogen to become commercially viable. The Public-Private-Partnership (PPP) projects address specific questions along the GH2 value chain to analyse bottlenecks in project and business model development of replicable project concepts. In the PPPs, private and public partners contribute their strengths in a formalised partnership to develop the market for GH2/PtX technologies and applications along the value chain. GIZ is the public partner and contributes technical expertise, its structures and networking on the ground to the projects. This feasibility study and location assessment for green ammonia production in India shall enable the development of this promising market segment in India.

About Green Investors

Green Investors is an independent advisory and investment firm dedicated to accelerating the global transition to sustainable energy through project development support, strategic finance facilitation, and policy guidance. Founded by seasoned experts in renewable technologies and capital markets, the firm partners with public agencies, private developers and multilateral institutions to structure bankable green hydrogen and PtX initiatives. Green Investors leverages its deep technical know-how, regulatory-affairs expertise and international network to de-risk early-stage projects, secure public-private collaboration and deploy innovative financing solutions. In the context of India's emerging green-hydrogen sector, Green Investors provides end-to-end support—from feasibility studies and offtake structuring to certification design and export-market alignment—enabling scalable, replicable business models that meet both domestic incentive schemes (GHCI/SIGHT) and stringent international standards (EU RFNBO).

Executive Summary

The Green Hydrogen Certification Scheme of India (GHCI) – launched by Ministry of New & Renewable Energy (MNRE) in April 2025 – now provides a national, ISO-based pathway for verifying green hydrogen produced domestically ($\leq$ 2 kg CO_2-eq/kg H_2) and unlocking national incentives such as under the National Green Hydrogen Mission (NGHM).

Yet India's National Green Hydrogen Mission also targets premium export markets – above all Europe, where Renewable Fuels of Non-Biological Origin (RFNBO) rules under RED III impose stricter conditions on power sourcing, system boundaries and life-cycle accounting. This paper compares GHCI and RFNBO, maps compatibility gaps and offers actions for policymakers and developers.

It was found that GHCI and RFNBO ultimately seek the same goal to certify "green" hydrogen credibly and transparently. However, differences in GHG boundaries, power-sourcing rules, temporal/geographic correlations and feedstock scope require careful navigation. Developers can secure Indian incentives and EU offtake without duplicate claims or retrofit risk.

Policymakers must act now sealing double-counting loopholes, publishing derivative roadmaps and aligning reporting calendars – to guarantee that India's National Green Hydrogen Mission can deliver competitive, bankable, dual-compliant projects and accelerate the country's emergence as a global green hydrogen hub.

For Indian projects targeting both domestic subsidies and EU export markets, it is now critical to understand and manage the divergences – particularly regarding:

- **GHG-emission methodology and thresholds** (ISO-based gate-only vs full life-cycle with a 70 %-saving benchmark)
- **Power-sourcing rules** (annual banking/no additionality vs phased monthly → hourly matching and no RE subsidies to the asset)
- **System boundaries and feedstock eligibility** (hydrogen only, including renewable biomass-electricity in GHCI vs exclusion of biological feedstocks and coverage of derivatives for electricity production under RFNBO in case of non 90 % RE share in bidding zone)
- **Geographical/temporal correlations** (national grid treated as a single zone under GHCI vs formal bidding-zone rules under RFNBO).

This white paper:

1. Reviews GHCI design and its alignment with India's National Green Hydrogen Mission.
2. Summarises RFNBO requirements under RED III and subsequent Commission Q&As.
3. Presents a side-by-side analysis of GHG methodology and power-sourcing rules.
4. Highlights practical implications for project developers (e.g., MRV, subsidy stacking, ledger separation).
5. Provides policy recommendations to bridge gaps and accelerate bankable, dual-compliant projects.

By closing key divergences – especially on power sourcing, derivative scope, and double-counting – India can preserve the integrity of its domestic incentives while enabling seamless exports to Europe's RFNBO-driven market.

1 Introduction

Under the **National Green Hydrogen Mission (NGHM)**, India aspires to become a global production and export hub for green hydrogen. To operationalise that vision, the Ministry of New & Renewable Energy (MNRE) among other introduced:

- **GHCI**, an ISO-based certification scheme that issues Guarantees of Origin (GO-equivalent) for hydrogen meeting ≤ 2 kg CO_2-eq/kg H_2, audited by BEE-accredited verifiers.
- **SIGHT Mode-1**, a production-linked subsidy that pays INR/kg on each certified kilogram – regardless of domestic sale or export.

Simultaneously, **Europe's RED III** released Delegated Acts 2023/1184 & 1185 in February 2023. These define the **RFNBO classification** for hydrogen, requiring:

- ≥ 70 % GHG savings vs a fossil benchmark (≈ 3.4 kg CO_2-eq/kg H_2), full life-cycle inclusion (well-to-dispatch, including derivatives)
- Strict power-sourcing rules: new, unsubsidised renewables (additionality), monthly → hourly temporal correlation (phased from January 2023 to 2030), and formal bidding-zone geographic correlation.
- Third-party audits via EU-recognised voluntary schemes (e.g., CertifHy, ISCC EU, REDcert).

As of May 2025, Indian exporters would have to comply with both GHCI (for domestic incentives) and RFNBO (for EU offtake). Any mismatch can jeopardise funding, trigger audit failures, or create "double counting" of environmental attributes and carbon credits. This paper articulates the critical divergences and offers guidance to policymakers and developers alike.

2 GHCI Overview

MNRE designed GHCI as a **seven-point certification blueprint**, modelled on ISO 19870:2023 and ISO 14064, to ensure lifecycle-based GHG accounting and provide confidence to investors that production of hydrogen will be eligible for premium renewable markets.

GHCI's Seven Pillars:

1. **Governance structure:**
    - MNRE (nodal authority) → Implementing Agency (operates portal and processes certificates) → Technical Committee (strategic oversight) → BEE-accredited Verifiers (GHG audits).
2. **Scope & system boundary:**
    - Includes water treatment, electrolysis, purification, compression and onsite storage.
    - Excludes construction, offsite storage, external transport and downstream derivative processes.
3. **GHG-emission guidelines:**
    - Based on ISO 19870/ISO 14064; considers CO_2, CH_4, N_2O.
    - Threshold: **≤ 2.0 kg CO_2-eq/kg H_2** (LHV basis) measured over a 12-month financial year (April – March).
    - Materiality: < 1 % per source; ≤ 5 % total exclusions.
4. **Monitoring, Reporting & Verification (MRV):**
    - Hourly metering of electricity input, electrolyser power draw and hydrogen output; monthly data uploads to Green Hydrogen Certification Portal (GHCP).
    - BEE-accredited Verifiers conduct an annual audit before issuing the Final Certificate.
5. **Verification approach & nodal authority:**
    - Verifiers: Accredited Carbon Verifiers (ACVs) licensed by BEE.
    - Technical Committee reviews/verifies audit findings; final sign-off by MNRE.
6. **Digital reporting mechanism:**
    - Online portal houses all production data, audit reports and issued certificates (serial numbers per 100 kg H_2).
    - Records retained for five years (or five evaluation cycles).
7. **Certificates as Guarantees of Origin (GO):**
    - Concept (design stage), Facility (post-commissioning), Provisional (monthly), Final (annual).
    - Final Certificate mandatory for any tonne claiming SIGHT incentives or sold domestically.

Noteworthy GHCI Features:

- **Biomass-derived electricity eligible:** Renewable electricity sourced from biomass-fired plants counts toward the ≤ 2 kg threshold (though direct biomass-gasification hydrogen is not yet covered).

- **Eligibility of Biomass pathway:** GHCI recognises both electrolysis and biomass conversion (e.g. gasification, biogas reforming) as eligible for green hydrogen certification, subject to compliance with the $\leqslant$ 2 kg CO_2-eq/kg H_2 threshold.
- **Electricity banking allowed:** GHCI permits storing or "banking" renewables within the fiscal year; no immediate hourly or monthly match required.
- **No "additionality" requirement:** RE asset commissioning can precede electrolyser by more than 36 months, and renewable-power assets may receive Indian subsidies.
- **Geographical correlation:** Implicit: electricity delivered anywhere on India's national grid qualifies; no formal bidding-zone constraint.
- **GHCI penalty for non-compliance:** Certificate withdrawal, ineligibility for incentives, and restrictions on domestic sales.

3 EU RFNBO Requirements

Under RED III, the EU defines RFNBO in Article 25(2) as hydrogen (and derivatives) that achieve ≥ 70 % GHG saving against a fossil benchmark. Two Delegated Regulations (Commission Delegated Regs 2023/1184 & 2023/1185) detail power-sourcing, GHG methodology and verification. Key elements:

3.1 GHG-Emission Methodology (Reg 2023/1185):

- **Reference fossil comparator:** 91 g CO_2-eq/MJ (natural gas steam methane reforming benchmark).
- **System boundary:** Well-to-dispatch, including feedstock extraction, electrolysis, compression, transport to first delivery point and derivatives (e-ammonia, e-methanol, e-kerosene).
- **Emissions to include:** GHGs from electricity, feedstocks, direct process emissions, construction (if > 2 % of total), transport and distribution.
- **Materiality threshold:** < 1 % per source, ≤ 10 % total.
- **Allocation:** Energy-content method for co-products (oxygen, heat).

3.2 Power-Sourcing Rules (Reg 2023/1184, Articles 5–7):

Additionality (Article 5):

- Electricity must come from an RE plant commissioned **no more than 36 months** before the electrolyser's commissioning date.
- RE plant must receive **no operating or investment aid** (from 1 Jan 2028 onward).
- **Grandfathering:** Plants active before 1 Jan 2028 are exempt from additionality until 31 Dec 2037.

Temporal Correlation (Article 6):

- **Monthly matching** of RE generation vs electrolyser consumption until 31 Dec 2029.
- **Hourly matching from** 1 Jan 2030 (German position paper suggests a possible extension to 2035, but not yet adopted).

Geographical Correlation (Article 7):

- Electricity must originate in the **same bidding zone** as electrolysis, or in a directly interconnected zone with **equal or higher hourly wholesale price**.
- For imports from third countries, project owners must provide proof (grid-flow studies, bilateral physical flows, or contractual guarantees) that the RE electricity matches EU bidding-zone criteria.

Permitted proofs:

- **Direct line** connection (behind-the-meter).
- **Co-located storage** (e.g., battery) on same site.
- **PPA** with matched Guarantees of Origin (GOs) or Guarantees of Remote Origin (GROs).
- **No generic RECs** or "green-tag" purchases.

3.3 Verification & Audit:

- Annual audit by an **EU-recognised voluntary scheme** (CertifHy, ISCC EU, REDcert H2, etc.).

- Audits must confirm GHG calculations, power-sourcing compliance, metering records (hourly or monthly), and bidding-zone evidence.

3.4 Applicability to Imports (RFNBO Imports):

- Imported hydrogen must satisfy the same rules as EU-produced RFNBO.
- The EU Union Database records all RFNBO volumes, including imports, with metadata on power source, commissioning date and geographical origin.

4 Comparative Analysis

This chapter reflects on the alignment and differences between India's GHCI and the EU's RFNBO framework. It examines how each scheme defines feedstock scope, GHG thresholds, system boundaries and certification cadences, and identifies where they coincide or pull apart. Two tables illuminate the contrasting power-sourcing rules (additionality, temporal matching, geographic correlation) and GHG-methodology approaches (reference standards, emission factors, materiality thresholds).

4.1 Overview of Key Differences

The following table highlights the principal divergences between GHCI and RFNBO.

Table 1 The Principal divergences between GHCI and RFNBO.

Category	GHCI (May 2025)	RFNBO (RED III)	Implication
Feedstock / Scope	Hydrogen from **electrolysis driven by RE** (including biomass-derived electricity). Derivatives not covered yet; water-only electrolysis.	Hydrogen (and derivatives: ammonia, methanol, e-fuels) from RE only. **Biomass and biogenic feedstocks explicitly excluded.**	Indian projects using biomass-electricity must clarify to EU auditors that this is non-biological RF electricity. Future GHCI extension needed for derivatives.
GHG Threshold	≤ 2 kg CO_2-eq/kg H_2 (12-month average). Well-to-gate.	≤ 3.38 kg CO_2-eq/kg H_2 (70 % saving vs fossil). Well-to-dispatch.	GHCI is stricter on production emissions but narrower in boundary. RFNBO's broader boundary yields a higher limit.
System Boundary	Includes electrolysis → purification → compression → onsite storage. **Excludes** construction, transport, downstream conversion.	Well-to-dispatch: feedstock extraction, electrolysis, compression, transport to first delivery point, conversion to derivatives.	Upstream (construction) and downstream (transport, derivatives) gaps. Exporters must supplement GHCI LCA for RFNBO.
Power Sourcing	Any RE: direct, storage, **grid banking**, green tariff, G-DAM. No RE subsidy restriction. **No temporal/geographical clauses.**	**Additionality:** RE asset ≤ 36 months older; **no RE subsidy** (from 2028).**Temporal:** monthly match until 12-2029; hourly from 1-2030 (possibly 2035 delay).**Geographical:** same or interconnected bidding zone.	Banking & green tariff fine for GHCI, but non-compliant for RFNBO. Projects using Indian RE subsidies must ring-fence volumes. Hourly/zone proofs add complexity for exports.
Verification Cadence	Annual audit by BEE-accredited ACV; monthly data submissions; gate-only.	Annual audit by EU-recognised scheme; monthly data → hourly data (post-2030); full life-cycle.	GHCI auditors untrained on transport/derivatives; developers need dual audits.
Certificate Types	Concept → Facility → Provisional → Final (serials per 100 kg). Final required for subsidies.	Batch-level RFNBO certificates issued upon audit.	A single kilogram cannot hold both a GHCI and an RFNBO certificate—requires separate ledgers.

4.2 Power-Sourcing Comparison (Delegated Act Articles 5–7)

Table 2 Power-Sourcing Comparison (Delegated Act Articles 5–7)

Criterion	RFNBO Requirement	GHCI Treatment	Gap / Comment
Additionality	RE plant commissioned ≤ 36 months before electrolyser. **No operating or investment aid to RE** (from 1 Jan 2028). Grandfathering for pre-2028 plants until 2037.	No additionality clause. Any RE asset—new or existing—qualifies, including those receiving Indian subsidies.	Export batches using subsidised RE must be ring-fenced or use unsubsidised PPAs to meet RFNBO.
Temporal Correlation	Monthly matching until 31 Dec 2029; hourly matching from 1 Jan 2030 (EU law), with a possible extension to 1 Jan 2035 under discussion.	12-month compliance period; **banking** of RE allowed. No requirement for monthly or hourly matching.	Annual banking is non-compliant for RFNBO. Developers must install ≥ 15-minute SCADA to aggregate both monthly and hourly data.
Geographical Correlation	Electricity must originate in the **same bidding zone** or an interconnected zone with equal/higher wholesale price. Applicable to sub-areas inside and outside the EU.	No bidding-zone requirement. Any RE drawn from India's national grid qualifies.	EU auditors will require evidence (grid-flow studies, bilateral contracts) that Indian grid qualifies as an "equivalent bidding zone."
Permitted Proofs	Direct line, co-located storage, PPA with matched GOs (Guarantees of Origin) or GROs (Guarantees of Remote Origin). No generic RECs.	Direct supply, on- or off-site storage, **grid banking**, green tariff, power-exchange (G-DAM) purchases. RECs & carbon credits are invalid.	GHCI methods such as banking and green tariff are not accepted for RFNBO. Developers must separate RE procurements for export.
Grandfathering/Transition	Plants operational before 1 Jan 2028 are exempt from additionality until 2037; still subject to monthly matching if built after that date.	No transition; rules apply immediately.	EU provides a longer runway; GHCI is one-step. Policymakers may want to consider a phased approach for derivatives.
Power Data Verification	Hourly SCADA logs from 2030, supplied to EU scheme auditor.	Hourly metering required but only **monthly** data uploaded for GHCI audits; no hourly check.	Hardware can satisfy both, but reporting templates differ. Developers should build a dual data-reporting system.

4.3 GHG Methodology Comparison (Delegated Reg 2023/1185)

Table 3 GHG Methodology Comparison (Delegated Reg 2023/1185)

Aspect	RFNBO (EU Reg 2023/1185)	GHCI (ISO 19870/14064, Clause 8)	Key Difference
Reference Standard	Annex I of Reg 2023/1185; uses JRC default factors and EU fossil comparator.	ISO 19870:2023 + ISO 14064; uses CEA grid factors for electricity, specific feedstock factors.	RFNBO uses EU-centric benchmarks; GHCI relies on international ISO norms.
GHG Threshold	≥ 70 % savings vs fossil (91 g CO_2/MJ) ⇒ ≤ 3.38 kg CO_2/kg H_2 (LHV).	≤ 2.0 kg CO_2/kg H_2 (LHV) (12-month average).	GHCI threshold is ~40 % stricter on production emissions but does not include transport or derivatives.
Functional Unit / Averaging	Batch-by-batch; GHG saving verified for each lot. No averaging.	12-month rolling average for entire facility. Certificates cover annual performance.	Batch approach (EU) vs annual average (India) may cause mismatched results if peaks/troughs occur.
System Boundary	Well-to-dispatch: includes feedstock extraction, electrolysis, compression, transport to first delivery point, downstream conversion to e-derivatives.	Well-to-gate: covers electrolysis, purification, compression, onsite storage. Excludes construction, offsite storage, transport, conversions.	GHCI omits several life-cycle stages—exporters must extend GHCI LCA to satisfy RFNBO.
Electricity Emission Factor	Hourly residual mix or site-specific factor approved by auditors; JRC default factors exist.	CEA grid average factor (updated quarterly), plus standard transmission-loss multiplier.	RFNBO demands granular hourly or monthly factors; GHCI uses a coarser grid average.
Materiality Threshold	< 1 % per source; ≤ 10 % total emissions can be excluded.	< 1 % per source; ≤ 5 % total excluded.	GHCI stricter on allowable omissions.
Co-Product Allocation	Energy-content method for oxygen, e-heat, derivatives.	Same energy-content allocation for oxygen, heat.	Alignment here simplifies dual audits.
Verification	Annual audit (calendar year) by EU-recognised voluntary scheme (CertifHy, ISCC EU, REDcert H2).	Annual audit by BEE-accredited ACV; Final Certificate issued each FY (April to March).	Different auditor pools but similar frequency.

5 Implications for Project Developers

For projects aimed at both Indian subsidies and EU exports, the following operational and strategic actions are essential:

1. **Dual Ledgers for Certificates**
    - **GHCI ledger:** Tracks every kilogram that claims Indian SIGHT incentive.
    - **EU ledger (RFNBO):** Tracks every kilogram earmarked for EU customers under a recognised scheme.
    - **Rule of thumb:** Once a batch is tagged for one ledger, it cannot switch—avoiding double-counting.
2. **Renewable-Power Asset Must Be Subsidy-Free for RFNBO**
    - Indian government subsidies (CAPEX/OPEX) to the RE plant disqualify that same electricity for RFNBO status (Article 5(b), Reg 2023/1184).
    - Solutions: procure from an unsubsidised PPA (merchant or fixed price) or repay any Indian aid to the RE asset feeding the export portion.
3. **Install Hourly (or 15-Min) SCADA**
    - GHCI requires only monthly aggregated uploads, but RFNBO will demand hourly proofs starting 1 Jan 2030 (or 2035 if extended).
    - A single SCADA system can record ≥ 15-minute data that is aggregated to:
        - Monthly reports for GHCI audits.
        - Hourly reports for EU-certification audits.
4. **Ring-Fence Export Batches Against CCTS Conversion**
    - Once SIGHT incentive is claimed on a kilogram, that GHCI certificate can be converted into a CCTS Carbon Credit (CCC) under the voluntary window (from 2025 onward).
    - To avoid double monetization and account twice for CO_2 abatement, export batches should be marked "non-convertible" or retired in GHCI so they cannot generate CCCs.
5. **Disclose Indian Incentives Fully in EU Bids (e.g., H2Global)**
    - H2Global and similar import tenders allow stacking of Indian subsidies if declared; however, they adjust the "cost-of-difference" payment to avoid overcompensation.
    - Failure to declare can result in clawbacks, reputational damage and legal disputes.
6. **Design for Derivative Certification**
    - RFNBO's life-cycle covers ammonia, methanol and e-fuelsand GHCI is still H_2-only.
    - Developers planning ammonia, methanol or eSAF exports should prepare additional LCA modules now to integrate with recommended future GHCI derivative rules.
7. **Prepare for Bidding-Zone Audit Evidence**
    - Though GHCI treats India's grid as a single zone, RFNBO auditors will expect:
        - Grid-flow studies showing that renewable generation (or PPA) is linked to Hydrogen production.

- Evidence that hourly wholesale price in the export zone equals or exceeds dispatch zone price (for cross-border imports).

6 Policy Recommendations

To streamline India's dual compliance pathway and accelerate bankable, export-ready projects, policy interventions are required at both ends:

6.1 Government of India/ MNRE Actions

1. **Seal the Double-Counting Loophole**
    - Issuing a binding rule that any hydrogen (or derivative) batch exported under an EU-recognised certificate is **ineligible** for Indian CCTS carbon credits would be desirable from an industry perspective and further harmonize regulatory frameworks
    - Issue a binding directive that GHCI certificates used for export (RFNBO) are ineligible for conversion into CCTS carbon credits.
2. **Publish Derivative-Scope Roadmap**
    - Releasing a timeline for extending GHCI to ammonia, methanol and SAF would give developers with more planning security.
    - A stakeholder workshop (developers, offtakers, auditors) could be held to define system boundaries and GHG methodologies for derivatives.
3. **Align Reporting Calendars**
    - It may be beneficial to allow GHCI participants the option to submit a calendar-year data extract alongside their financial-year report, thereby streamlining the audit process for dual-compliant operations.
4. **Build Accredited Verifier Capacity**
    - Partner with EU institutions and GIZ to launch a GHCI-RFNBO auditor training programme so BEE-accredited ACVs can perform compliant RFNBO audits in the same site visit.

6.2 EU Actions

1. **Clarify Treatment of Producer-Country Subsidies**
    - For the upcoming RFNBO Q&A update, it would be helpful to invite importers to transparently disclose any renewable - electricity inputs that have received non-EU public support, accompanied by clear guidance on mechanisms—such as repayment or ring-fencing—that can preserve alignment with EU subsidy principles.
    - To enhance the Union Database's transparency, policymakers might consider introducing an "External Support Declaration" field, enabling operators to record whether and how any public aid has been applied to renewable - electricity volumes underpinning RFNBO imports.
    - In the second RFNBO Q&A (expected mid 2025), specify that importers must flag any RE electricity that benefitted from non-EU subsidies, and outline acceptable proofs of repayment or ring-fencing.
    - Add an "Import Aid Declaration" field to the Union Database to track whether a given RFNBO volume has received external aid.
2. **Define "Equivalent Bidding Zone" Criteria for Large National Grids**
    - Issue formal guidance stating that synchronous grids can be treated as a single bidding zone if:
        - Hourly congestion data show no curtailment of RE to electrolyser.

        - Price parity exists across key regions.
    - Provide a template for grid-flow studies and contractual evidence.

7 Conclusion

GHCI and RFNBO ultimately seek the same goal: to certify "green" hydrogen credibly and transparently. However, differences in GHG boundaries, power-sourcing rules, temporal/geographic correlations and feedstock scope require careful navigation. By:

1. **Maintaining separate ledgers** and ring-fencing export batches,
2. **Designing RE procurement** to satisfy both annual banking (GHCI) and hourly matching (RFNBO),
3. **Ensuring RE asset subsidy-freedom** for export-facing volumes, and
4. **Aligning future GHCI extension** to include derivatives,

developers can secure Indian incentives and EU offtake without duplicate claims or retrofit risk. Policymakers must act now – sealing double-counting loopholes, publishing derivative roadmaps and aligning reporting calendars – to guarantee that India's Green Hydrogen Mission can deliver competitive, bankable, dual-compliant projects and accelerate the country's emergence as a global green hydrogen hub.

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The International Hydrogen Ramp-up Programme (H2Uppp) of the German Federal Ministry for Economic Affairs and Energy (BMWE) promotes projects and market development for green hydrogen in selected developing and emerging countries as part of the National Hydrogen Strategy.