

GREEN HYDROGEN AND STORAGE STARTUP CHALLENGE 2026

OBJECTIVE OF THE CHALLENGE

The Green Hydrogen and Storage Startup Challenge 2026 is an initiative of the International Solar Alliance (ISA), under the Green Hydrogen Innovation Centre (GHIC).

The challenge aims to identify and support startups working in Green Hydrogen (GH_2), its derivatives, and storage solutions, offering innovative decarbonisation technologies; especially for hard-to-abate sectors. It will help bridge technical gaps, support global startup-demand centre linkages, and improve access to financing opportunities.

KEY SUPPORT PILLARS

Mentorship and Expert Guidance

Global Investor Connects

ISA Member Countries Connects

Peer-learning Support

LAST DATE TO APPLY: 9 AUGUST 2026

To apply visit: <https://isa.int/>



EXPECTED OUTCOMES

Build a global pipeline of startups delivering impactful GH_2 and integrated storage decarbonisation solutions.

Enhance technical and commercial readiness of startups through targeted industry engagement, investor connects, advisory support, and knowledge exchange.

Enable financing opportunities and early market uptake leading to strategic partnerships and pilot projects.

Strengthen the global innovation-to-deployment GH_2 ecosystem.

Shortlisting & Selecting Startups Technical evaluations Q3 CY2026

Launching of Green
Hydrogen & Storage
Startup Challenge
Q2 CY2026

Announcement
of the challenge
COP30,
Q4 CY2025

Announcement of
Winners at Ninth Session
of ISA Assembly
Q4 CY2026

Startup Support
Programme
CY2027



MAJOR GH₂ & STORAGE MARKET DRIVERS

GLOBAL STRATEGIC TARGETS

- More than 60 National Hydrogen Strategies and Roadmaps announced (IEA)
- Global target for electrolyzer capacity is ~140-150 GW by 2030, ~10x the level of 2023 (IEA)
- Cumulative global energy storage capacity expected to reach 2 TW (7.3 TWh) by 2035, ~8X the level in 2025 (BNEF)

INCREASED INVESTMENTS

- Increasing public & private investments in GH₂ and storage technologies & infrastructure development
- Since 2020, low-emissions H₂ production projects have grown from a handful to over 200 committed investments globally (IEA)
- Investment in batteries under the net-zero emissions scenario estimated to reach ~USD 800 billion by 2030 (IEA)

TECHNOLOGY ADVANCEMENT

Technological innovations in GH₂ & storage sectors are anticipated to drive large scale deployment of these technologies.

THEMATIC AREAS ACROSS THE GH₂ VALUE CHAIN

1. GH₂ & DERIVATIVES PRODUCTION

- Electrolyser design/ materials and/or manufacturing processes
- Hydrogen production and/or coproduct utilisation
- Water treatment solutions to optimise/reduce water consumption in electrolysis

3. HYDROGEN STORAGE & TRANSPORTATION

- Storage of Hydrogen and its derivatives (GH₂, ammonia and Methanol etc.)
- Hydrogen transportation (e.g. repurposed/new pipelines)
- Port bunkering

5. CROSS-CUTTING ENABLERS

- Business / financing models across the GH₂ value chain
- Safety (e.g. leak-detection) / monitoring across GH₂ processes and infrastructure
- Digital solutions for monitoring, optimising, and operational management of GH₂ production facilities and downstream processes

2. ENERGY STORAGE SYSTEM

2.A ENERGY STORAGE SYSTEM FOR GH₂ Value chain

- 2.B Innovative Energy Storage Solutions Beyond Gh₂ Value Chain
- Renewable energy integration with grid

4. DOWNSTREAM END-USE APPLICATIONS

- Feedstock for industries such as refineries, petrochemicals, fertilisers, chemicals and steel
- Fuel for high-temperature heat application in industries such as cement, glass, ceramics, and agri-food processing
- Fuel for heavy-duty road transport, rail, aviation and maritime
- Hydrogen-to-power systems for long-duration energy storage
- Across other new/emerging hard-to-abate end-use sectors



ABOUT ISA & GHIC

ISA: The International Solar Alliance (ISA) is a global initiative launched in 2015 by India and France at COP21 in Paris. ISA works with its 120+ Member and Signatory Countries to improve energy access and security, advocating for solar power as a sustainable pathway to a clean energy future. ISA's evolving vision is anchored on four strategic pillars: (1) Catalytic Finance Hub to unlock and mobilise investments at scale; (2) Global Capability Centre and Digitisation to foster innovation, digital platforms, and capacity building across Member Countries; (3) Regional and Country-level Engagement to drive tailored interventions through strategic partnerships and (4) Technology Roadmap and Policy to accelerate the deployment of emerging solar technologies through actionable policy frameworks and knowledge resources. As a treaty based intergovernmental platform, ISA provides technical guidance, policy leadership, and global coordination to support its Member Countries in scaling solar energy.

GHIC: ISA, in partnership with Ministry of New and Renewable Energy, GOI and ADB under India's G20 Presidency, launched the virtual Green Hydrogen Innovation Centre (<https://isa-ghic.org/>) to promote green hydrogen production, utilization, trade, and knowledge sharing. This challenge is being launched under GHIC initiative.

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