



**Green
Hydrogen
India**

Yearly Review 2024





The Green Hydrogen Association (GH2 India) is a multi-stakeholder platform dedicated to accelerating the development and deployment of green hydrogen solutions in India. By working closely with the Ministry of New & Renewable Energy (MNRE), state governments, industry leaders, think tanks, developmental finance institutions, academia, and civil society, GH2 India fosters collaboration, innovation, and policy initiatives that support India's clean energy transition. Focused on policy and advocacy, capacity building, and market creation, we are committed to shaping a robust green hydrogen ecosystem that bolsters India's energy security, economic growth, and leadership in global decarbonisation efforts.



Our mission is to drive the expansion of green hydrogen as a cornerstone of India's sustainable energy landscape. We seek to enable cost-effective and scalable hydrogen production, spur investments, advance policy frameworks, and encourage strategic partnerships. By doing so, we aim to create an environment where green hydrogen can deliver tangible climate benefits, economic resilience, and inclusive development for over 1.5 billion citizens.



We envision India emerging as a global hub for green hydrogen—an environment where advanced technologies, equitable market structures, and supportive policies converge to enable widespread adoption and export of green hydrogen solutions. Our goal is to help position India as a front-runner in delivering cost-competitive green hydrogen to domestic and international markets, thereby strengthening energy security, uplifting communities, and contributing meaningfully to the global pursuit of net-zero emissions.



Key Events and Initiatives



Roundtables with Industry, Associations and Governments

Throughout the year, GH2India organized and supported multiple roundtables addressing critical issues across the green hydrogen value chain. The Green Ammonia Roundtable with WEF focused on India's goal of exporting 70% of green hydrogen production by 2030, addressing barriers like refinery sector alignment and subsidy structures, addressing infrastructure needs, and fostering capital investment. At the CETFi Roundtable, discussions highlighted carbon markets as a tool to mobilize foreign institutional capital, with potential to raise \$100 billion for clean energy projects by 2030, mitigating pricing and volume risks, and utilizing innovative financial instruments to enhance green hydrogen value chains. The Roundtable with GPCL on Long Duration Energy Storage showcased LDES as means to integrate 450 GW of renewable energy and grid capacity enhancement to support hydrogen production. The CEO Roundtable with Thyssenkrupp prioritized scaling gigawatt-scale projects to meet 20% of global green ammonia demand, hybrid hydrogen pathways, and financial innovation while tackling grid intermittency challenges with energy storage solutions. The Multilateral Roundtable at the Norwegian Embassy highlighted international collaboration, policy development, and Norway-India partnerships in green hydrogen innovation. The GH2 India High-Level Roundtable addressed export readiness, RFNBO compliance, infrastructure investments, and the importance of gender diversity in sector leadership. These roundtables collectively fostered actionable strategies, financial mechanisms, and technological advancements to drive India's green hydrogen ecosystem.



World Hydrogen Summit 2024

Co-hosted by GH2 in partnership with the Indo-German Energy Forum (IGEF-SO), the Indian Embassy in The Hague, the Port of Rotterdam, and the Indo-German Chamber of Commerce, Mr. Bhupinder Singh Bhalla, Secretary of MNRE, emphasized India's unwavering commitment to supplying green hydrogen globally. He unveiled plans for gigawatt-scale projects nearing finalization, with the first commercial ventures expected to launch as early as April 2027, showcasing India's readiness to achieve its decarbonization goals.



Shri Bhupinder Singh Bhalla
Secretary, MNRE

The event brought together over 30 organizations, including HPCL-Mittal Energy, ReNew, ACME Group, and Adani Group, along with representatives from Women in Green Hydrogen, GIZ India, and RWE. Discussions highlighted India's technological and financial readiness to lead in the global green hydrogen economy, reinforcing the country's role as a key player in the clean energy transition.

MoU with Women Leaders in Hydrogen India (WLHI)

GH2 India and Women Leaders in Hydrogen-India (WLHI) proudly launched a landmark collaboration which aims to foster inclusivity and elevate women's roles in the green hydrogen sector. The event, graced by H.E. May-Elin Stener, Ambassador of Norway, emphasized the critical need to recognize and enhance women's participation in the green energy transition. A key highlight of the collaboration is GH2's support for WLHI's flagship SHINE programme, which empowers women entrepreneurs, researchers, and professionals driving innovation in the hydrogen space.



ICGH 2024

Gh2 India hosted session on "Certification Requirements for Green Hydrogen Value Chain from a Lifecycle Perspective" which underscored globally aligned certification standards to ensure transparency, investor confidence, and sustainability. Discussions focused on carbon emissions, land use, water availability, and community impact, with experts emphasizing the need to prevent dilution by blue hydrogen alternatives. India's draft certification scheme was highlighted as a key step in supporting the country's decarbonization goals.



INTERNATIONAL CONFERENCE ON GREEN HYDROGEN 2024

11th - 13th September, 2024 | New Delhi

RE Invest 2024

Gh2India hosted an exclusive CEO Roundtable in partnership with the Government of Gujarat, focusing on "Accelerating Green Hydrogen Production through Green Jobs in Gujarat", RE Financing, Long Duration Energy Storage and Wind energy. Key inputs and suggestions from stakeholders included addressing land availability challenges through SEZs and cluster development for large-scale renewable energy projects, supporting biomass-based hydrogen production pathways, enhancing infrastructure, including Inter-State Transmission Systems (ISTS) and ports, to enable seamless integration of green hydrogen projects, leveraging carbon markets and introducing mechanisms like a Green Hydrogen Obligation to stimulate demand and attract investments and utilizing AI and advanced technologies to optimize renewable energy use and improve cost efficiency in green hydrogen production.



RE Invest 2024 - 4th Global Renewable Energy Investors Meet & Expo

16 - 18th September 2024 | Gujarat, India

GH2 India Reports: Policy Brief and Union Budget whitepaper

In August 2024, GH2 India released its Policy Brief (Jan-June) in collaboration with DSK Legal, focusing on advancements under the National Green Hydrogen Mission, electrolyser development, and hydrogen hubs. Additionally, in collaboration with EY Parthenon for a white paper analyzing the Union Budget's impact on the hydrogen sector. The paper provided insights into funding mechanisms, policy support, and infrastructure needs crucial for accelerating green hydrogen adoption.

Read the Detailed reports here:
<https://www.gh2.org.in/resources>



Leading the Hydrogen COP and Supporting Delegation at CETFi the Pledge and LSEG

GH2 India led a 30-member Indian delegation at the India International Climate and Energy Transition Finance Forum hosted by the London Stock Exchange Group (LSEG). The forum brought together over 200 global investors and key stakeholders to explore financial instruments, blended finance models, and risk mitigation strategies for green hydrogen projects. Discussions emphasized bridging financing gaps, addressing forex volatility, and creating innovative asset classes to drive India's hydrogen economy.

At COP29, GH2 India endorsed the Hydrogen Declaration, committing to accelerate global green hydrogen adoption. The declaration emphasized hydrogen's role in decarbonizing hard-to-abate sectors and achieving the Paris Agreement targets. GH2 India with its Partner ProClima and accompanied Energy minister from Government of Gujarat, actively participated in policy discussions, showcased India's developments, and advocating for actionable measures to scale green hydrogen deployment globally.



United Nations
Climate Change



COP29
Baku
Azerbaijan

GH2 India endorses
the COP 29 Hydrogen Pledge



GH2 India

European Hydrogen Week

GH2India hosted 2 roundtables and 3 sessions in Brussels, strengthening India-EU collaboration in advancing the green hydrogen economy. The India Pavilion inauguration attracted over 100 attendees and facilitated impactful discussions on safety, investments, partnerships, and technology.

The EU-India High-Level Roundtable on Green Hydrogen convened senior policymakers, industry leaders, and researchers to foster cooperation in green hydrogen production, trade, and infrastructure. Discussions highlighted India's cost-efficient production capabilities and the EU's strong demand for hydrogen derivatives in industries like shipping, steel, and chemicals. Key topics included regulatory harmonization, joint financing models, and cross-border infrastructure development.

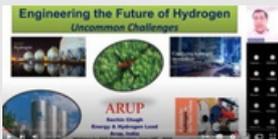
The Certification Roundtable addressed challenges in aligning India's hydrogen certification frameworks with EU RFNBO standards. Discussions focused on balancing economic feasibility with regulatory compliance, including criteria like additionality, temporal, and geographical correlation. Stakeholders emphasized the need for phased implementation and leveraging Guarantees of Origin (GOs) to verify renewable energy claims. The India Green Hydrogen Showcase (IGHS) spotlighted India's leadership in hydrogen production, policy innovation, and global partnerships. With over 60 participants, discussions covered green hydrogen exports, certification, financing strategies, and infrastructure development.

Hydrogen Europe and the Green Hydrogen Association (GH2 India) signed a Memorandum of Understanding (MoU) to strengthen collaboration and knowledge exchange in advancing the hydrogen sector across Europe and India.



Green Hydrogen Webinar Series (GHWS)

Throughout 2024, GH2 India conducted 5 webinars under the Green Hydrogen Webinar Series (GHWS), focusing on diverse topics such as green hydrogen standards, PEM fuel cell innovations, and sector-specific applications in steel and glass manufacturing. These sessions featured 15+ speakers, attended by 750+ participants, provided a platform for global experts to share knowledge, address technical and financial challenges, and explore innovative solutions for scaling green hydrogen adoption.



Engineering the Future of Hydrogen - Uncommon Challenges



The role of standards and certification in growing India's Green Hydrogen Economy



Polymer Electrolyte Membrane Fuel Cells: Applications and Innovations



Applications of Green hydrogen - Part 1 - Glass Manufacturing and Energy Production.



Applications of Green hydrogen Part- 2: Steel Sector



Reception and Side events

To promote industry collaboration and promote partnerships in the industry, several receptions and side events were organized.



