

7th Issue,  
July 2025

# H4D Review



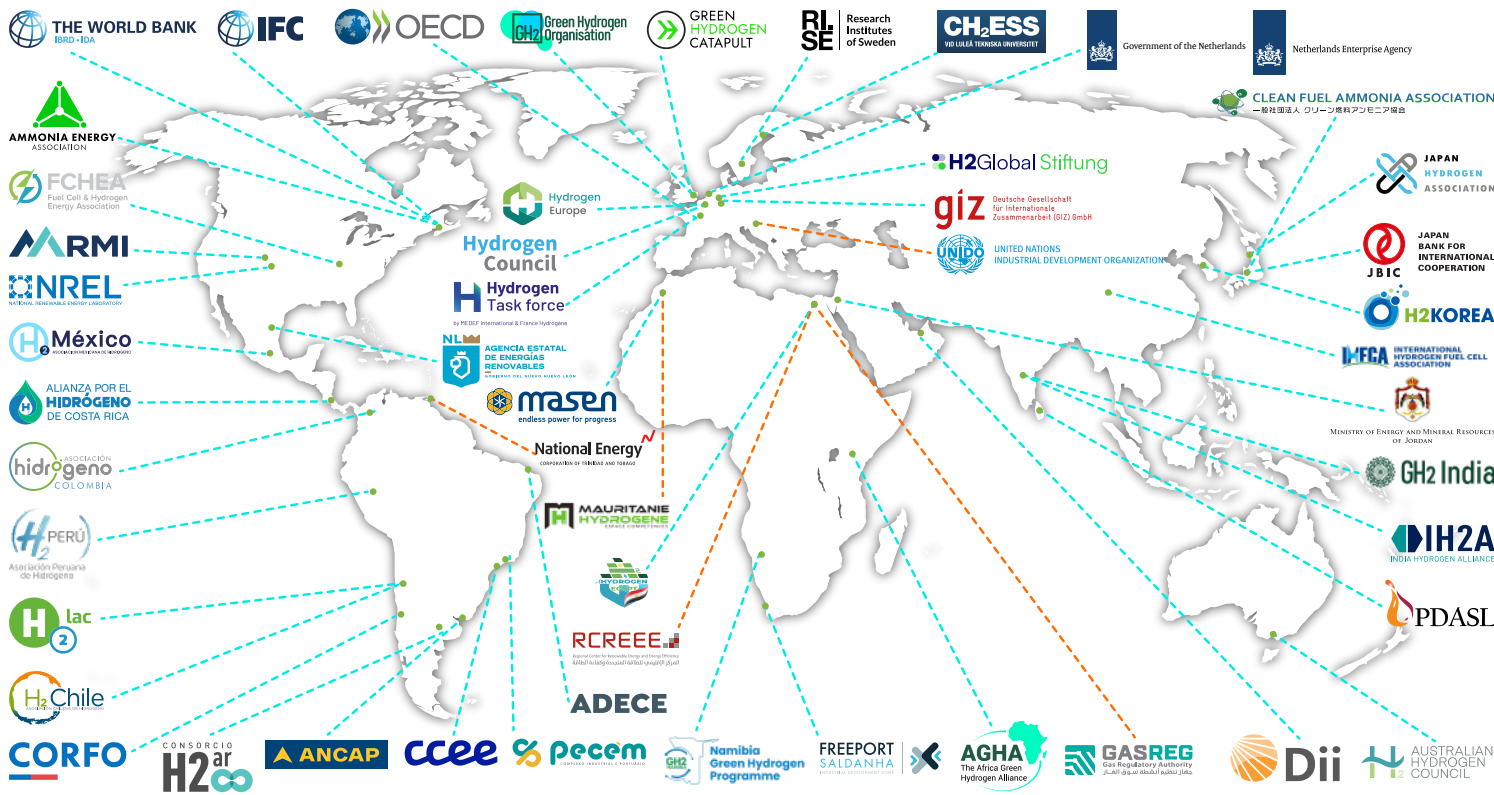
## Dear H4D Partners and Stakeholders:

The World Bank is pleased to announce the release of the seventh edition of the H4D Review, our quarterly newsletter dedicated to clean and low-carbon hydrogen.

This publication serves to keep Hydrogen for Development (H4D) partners, stakeholders, and observers informed of the latest developments across the initiative. It features updates on ongoing activities, highlights from recent analytical work, and announcements of upcoming events and opportunities for engagement in the global clean hydrogen landscape.

### H4D Partners

The H4D has 52 partners, including associations, business organizations, hydrogen clusters, knowledge institutions, laboratories, public agencies, and development institutions. List of H4D Partners (status Jly 1st, 2025):



The H4D team is delighted to welcome its new partners: Gas Regulatory Authority (**GASREG**), Regional Center for Renewable Energy and Energy Efficiency (**RCREEE**), National Energy Corporation of Trinidad and Tobago (**National Energy**), United Nations Industrial Development Organization (**UNIDO**), and Mauritanie Hydrogène Espace Compétences (**Mauritanie Hydrogène**). These esteemed institutions have joined the initiative between December 2024 and June 2025.

## H4D Partnership Milestones



### Current activities include

- Clean ammonia report: Chile exports to Japan.
- Case studies on “De-risking clean hydrogen through social license to operate: Practical lessons from renewable energy projects”.
- Navigator of policies and regulations governing hydrogen, ammonia and other derivatives imports to Japan.



Two **Reports** and  
One **Navigator**  
published in  
collaboration  
with **partners**



**5**  
Work  
streams in  
operation

**52**  
Growth in  
number of  
members  
from  
**12 to 52**

**4**  
In-person events  
held in **India, Chile,  
Colombia** and **Japan**

**20**  
Webinars  
organized  
with  
**partners**

## Operationalizing H4D Partnership

### H4D workstreams

**WS1. Clean hydrogen technologies, infrastructure, and systems integration.**  
Facilitated by:



**Herman Jonker**  
Co-chair



**Mike Enskat**  
Co-chair



**Hiroaki Machii**



**Rafael Ben**



**WS2. Enabling frameworks (policies, laws, regulations, and institutional capacities).**  
Facilitated by:



**Mikaa  
Blugeon-Mered**  
Co-chair  
**H Hydrogen  
Task force**  
by MEDEF International & France Hydrogène



**Ricardo Gedra**  
Co-chair



**Carolina  
Lopez Rocha**



**Carmen Conde  
Pardavila**

**WS3. Investments, financing, business models and procurement.**  
Facilitated by:



**Deger Saygin**  
Co-chair



**Dolf Gielen**



**Michelle Carvalho  
Metanias Hallack**



**WS4. Socioeconomics and sustainability.**  
Facilitated by:



**Andrea Guati Rojo**  
Co-chair



**Simran Sinha**  
Co-chair



**Carolina  
Lopez Rocha**



**Ignacio Berreta  
Sartini**



**WS5. Hydrogen use in industry.**  
Facilitated by:



**Ana María Ruz**  
Co-chair



**Petra Schwager**  
Co-chair



**Dolf Gielen**



**Megan Meyer**







# Key Highlights

 [Click to open for more information](#)



## AHC | Australian Hydrogen Council supports \$750m allocation from FMIA Innovation Fund to boost green metals transition.

AHC is contributing \$750M to support Australia's green metals transition, funding low-emission technologies for metal manufacturing. This is part of a \$1.7B fund, which also includes \$500M for clean energy tech and \$250M for low-carbon fuels. The initiative aims to accelerate innovation through pilot and demonstration projects, reduce industrial emissions, boost productivity, and modernize equipment and facilities.



## CORFO | Chile launches USD 5 million subsidy scheme for green hydrogen in Biobío region.

The initiative targets increasing the demand for green hydrogen and its derivatives in Biobío, which is known for its concentration of heavy industries, including steel production, petrochemicals, refining, and pulp manufacturing. Projects supported by this subsidy must focus on areas including logistics, industrial applications, human capital development, technological adaptation, and knowledge transfer.



## GH2 | IMO's work to cut GHG emissions from shipping sector.

The International Maritime Organization agreed to draft regulations to reduce emissions from global shipping. The new rules will apply from 2028 where vessels will need to reduce emissions by 17%. Failing this, they will need to pay a penalty (through purchasing Remedial Units) of USD 380 per ton of CO2 or trade credits.



## GIZ | Successful 5th call for proposals receives 51 project submissions.

On 14 March 2025, H2Uppp closed its fifth call for proposals of green hydrogen / PtX project ideas. The call received a total of 51 submissions. 25 project ideas came from South America, followed by 13 entries each from Africa and Asia. In total, project ideas came from 14 countries: Argentina, Brazil, Chile, Colombia, India, Indonesia, Mexico, Morocco, Namibia, Sri Lanka, South Africa, Thailand, Uruguay and Vietnam.



## H2COLOMBIA | Colombia projects over 18 GW of electrolyzer capacity for green hydrogen by 2040.

The 2025 Project Report: Green Hydrogen Outlook in Colombia, by the Colombian Hydrogen Association and GIZ, outlines the country's green hydrogen landscape. Aligned with Germany's National Hydrogen Strategy, it highlights 36 projects—11 already committed and 25 in development—supported by technical studies and institutional backing, signaling strong momentum for Colombia's hydrogen future.



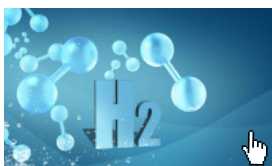
## H2GLOBAL | Hintco by H2Global launches second €2.5billion tender.

Hintco starts a second H2Global tender worth €2.5 billion. This second supply-side auction is organized into five lots: four regional and one global, and it is funded jointly by the Government of Germany and the Netherlands.



## IH2A | India H2 derivatives and low-carbon fuels market assessment 2025-30.

IH2A's latest market assessment (2025–2030) forecasts strong growth in green hydrogen derivatives for heavy-duty transport. Projections include 194M liters of green methanol and 263M liters of green ammonia for shipping and trucking, plus 19,500 kg of hydrogen for trucking and up to 45M liters of sustainable aviation fuel. The report highlights hydrogen's expanding role in decarbonizing transport.



## Hydrogen Europe | EU open €600 million funding calls for hydrogen, electricity and CCS infrastructure.

The EU's Climate, Infrastructure and Environment Executive Agency has launched a €600M call under the Connecting Europe Facility for Energy to fund cross-border infrastructure. Following the sixth PCI/PMI list, which includes 65 hydrogen projects, eligible initiatives benefit from faster permitting and access to EU or national funding. This move reinforces the EU's commitment to hydrogen deployment and strategic energy connectivity.



## WORLD BANK | The World Bank approves the DREAM Project in Mauritania

The World Bank Group approved the Mauritania Development of Energy Resources and Mineral Sector Support Project—known as the DREAM Project—to boost green hydrogen development, expand energy storage, and support critical reforms in the mining sector.



## 10GW: Moving forward, together



April 1-2, 2025, Bogotá, Colombia

During this congress, the World Bank shared key perspectives on advancing clean hydrogen in emerging markets, with a focus on Colombia's strategic initiatives.

**First regional session** of the 10 GW Initiative in Latin America, accompanied by representatives from CAF, IDB, GIZ and the European Union.

Discussions with FDN and Bancóldex focused on supporting hydrogen project development in Colombia and enabling **Final Investment Decisions (FID)** through targeted financial instruments › Advancing strongly and with concrete next steps.

**Dual-track business models** are emerging, combining export-oriented projects with domestic offtake for fertilizers, SAF, and bunker fueling.

**Transmission access and permitting delays** continue to be binding constraints, particularly in La Guajira.



## De-risking hydrogen projects with the Berne Union



May 12-15, 2025, Dubrovnik, Croatia

The **Berne Union** represents the global export credit and investment insurance industry, whose members collectively provide **over USD 2.6 trillion** in payment risk protection annually to exporters, banks, and investors.

ECAs and insurers expressed they are **actively developing instruments to support hydrogen and ammonia value chains** by:

- Enhancing **long-term political and credit risk coverage** tailored to hydrogen investments.
- Providing **risk-sharing mechanisms** for project developers and lenders.
- Supporting **infrastructure build-out** for hydrogen production, storage, and transport.

Interested members include **Atradius DSB** (Netherlands); **AXA** (United Kingdom); **bpi france** (France); **CESCE** (Spain); **Euler Hermes** (Germany); **Islamic Development Bank**; **NEXI** (Japan); **Saudi Exim** (Saudi Arabia)

Participate in the **upcoming call for proposals** aimed at developing a technology-focused paper on clean hydrogen production and associated risk mitigation mechanisms.



## Financing Bankable Hydrogen Projects



May 20-22, 2025, Rotterdam, The Netherlands

- **Bankability and risk allocation:** HSBC and Santander stressed the importance of proper risk allocation, especially regarding offtake and construction risk, recommending multi-contracting models and a balance between viability and bankability.
- **Development bank perspectives:** IFC, IADB, and FMO emphasized the need for pilot projects, gradual scaling (kW › MW › GW), and collaboration between DFIs and commercial banks to unlock capital and confidence in EMDC projects.
- **Risk perception and confidence gaps:** IFC highlighted that lenders still require demonstration of default risks below 5%, which is difficult at this stage—underscoring the need for patient capital, credible partners, and early-stage risk-taking.
- **Market recalibration and regional strategy:** panelists noted a strategic “correction” in the sector, with a pivot toward realistic, scalable projects that also serve domestic decarbonization goals in LAC, not just exports.
- **Key enablers for scaling:** successful pilots, regulatory clarity, off-take security, blended finance, and balanced project sizing are crucial to de-risking investments and advancing hydrogen projects in EMDCs toward bankability.





# H4D Partners Meeting



## 4<sup>TH</sup> Partners' Meeting and Stakeholders Forum | May 26-28, 2025

The Fourth Hydrogen for Development (H4D) Partners' Meeting, held in Tokyo, marked a significant milestone for the initiative—our first convening in a hydrogen-importing country. Japan's increasing demand for clean hydrogen and its derivatives from emerging markets and developing countries set the stage for a dynamic and forward-looking dialogue.

Co-organized by the World Bank-ESMAP, the Clean Fuel Ammonia Association (CFAA), Japan Bank for International Cooperation (JBIC), Japan Hydrogen Association (JH2A), and The Japan Gas Association, the event brought together senior Japanese officials, hydrogen experts, and partners from over 14 countries. Together, we explored pathways to decarbonize industry, create green jobs, and enhance global energy security. The Tokyo meeting reaffirmed the H4D partnership's commitment to building a sustainable and inclusive hydrogen economy.

### Key takeaways from the discussions included:

- Japan reaffirmed its strategic role as a key partner for Emerging Markets and Developing Countries (EMDCs) in advancing the clean hydrogen agenda—both as a provider of cutting-edge technologies across the hydrogen, ammonia, and Liquid Organic Hydrogen Carrier (LOHC) value chains, and as a committed long-term offtaker. This is supported by strong institutional alignment among key Japanese entities, including NEXI, METI, the Ministry of Finance, and JBIC, to operationalize Japan's Hydrogen Economy Roadmap.
- The social license to operate (SLO) was underscored as a critical success factor for clean hydrogen production projects in EMDCs, highlighting the need for early, inclusive, and transparent engagement with communities to ensure equitable benefit-sharing and local ownership.
- The importance of robust safety protocols was emphasized across the entire value chain—from production to end-use and international transport—particularly for green ammonia, where toxicity and handling risks require specialized mitigation frameworks and regulatory oversight.
- Participants stressed the imperative of deploying a blended package of financial instruments—including concessional finance, grants, credit insurance, and risk guarantees—to de-risk first-mover projects and crowd in private investment at scale.

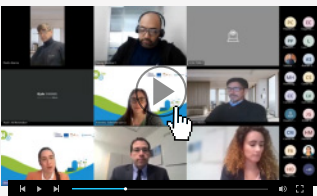




# Latest events and presentations by World Bank and H4D Partners

## MEDIA

### H2LAC showcased IEA Global Hydrogen Review 2024: Regional Perspectives for Latin America and the Caribbean



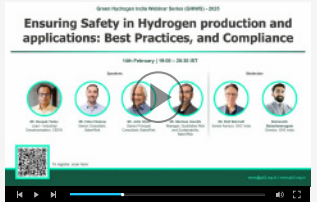
H2LAC, in collaboration with the International Energy Agency, held a virtual event to present the Global Hydrogen Review 2024. The report offered a detailed overview of the global hydrogen sector and, for the first time, assessed regional progress. Authors highlighted challenges and opportunities in the energy transition. The event also showcased initiatives promoting hydrogen as a strategic solution for decarbonizing energy systems and industrial sectors.

### H2LAC Webinar: Regulatory Framework for Low-Emission Hydrogen in Latin America: Lessons Learned and Shared



H2LAC, the International Power-to-X Hub, and the Center for Energy Regulatory Activity Studies (CEARE) hosted a virtual session on low-emission hydrogen regulations in Latin America. Experts from four countries analyzed national frameworks, sharing lessons and challenges in promoting hydrogen amid the climate crisis. The session emphasized the need to define regulatory roles, create incentives, and improve access to innovative financing to support hydrogen as a key energy vector.

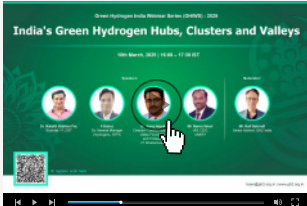
### GH2 India Webinar Series - Webinar 1 : Ensuring Safety in Hydrogen production and applications: Best Practices, and Compliance



This session provided a deep dive into the role of process safety in hydrogen and ammonia production, focusing on best practices, compliance frameworks, and risk mitigation strategies.

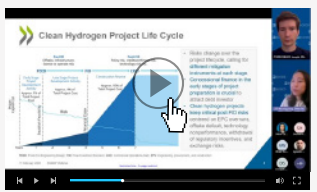
This joint session gathered diverse experts around hydrogen safety standards, incident case studies, and process safety management, ensuring a structured and informed approach to scaling green hydrogen safely.

### GH2 India Webinar Series - Webinar 2 : India's Green Hydrogen Hubs, Clusters and Valleys



The second Green Hydrogen India webinar focused on hydrogen technology progress and national renewable energy targets. The Department of Science and Technology presented initiatives to boost innovation. Topics included hydrogen valleys, regional carbon neutrality efforts, and investment challenges in public transport. The role of green hydrogen in steel production was discussed. The event concluded with plans for a major hydrogen hub on the eastern coast to support green chemical production.

### H4D Online Webinar Session: Leveraging De-risking Instruments and International Coordination to Catalyze Investments in Clean Hydrogen



This ESMAP webinar highlighted the key findings of the report Leveraging De-Risking Instruments and International Coordination to Catalyze Investment in Clean Hydrogen, prepared by the World Bank and OECD. The report offers insights into risk mitigation strategies to unlock and mobilize private capital for clean hydrogen in emerging markets and developing countries.

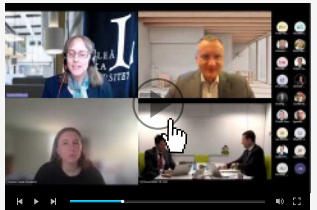
The webinar highlighted valuable lessons from case studies demonstrating how clean hydrogen projects and available economic, de-risking, and financing instruments can address critical barriers faced by investors in clean hydrogen projects and suggests ways to allocate risks among stakeholders.



[Click here to read the full report.](#)

[Click here to view the infographic.](#)

### H4D Online Webinar Session: Powering the future: Integrating clean hydrogen into the power system



This ESMAP webinar highlighted the intersection of clean hydrogen production and power system integration.

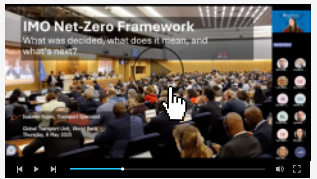
This joint session gathered experts from CH2ESS, Deloitte, and Dii Desert Energy around the key challenges and opportunities in grid adaptation, infrastructure development, and policy alignment. The discussion highlighted case studies, best practices, and forward-looking strategies to optimize hydrogen's role in future energy systems.

### ESMAP - Hydrogen for Development (H4D) Webinar Series “Deep dive into the European Union’s Hydrogen Policies and Regulations”



The session introduced the Navigator of Policies and Regulations Governing Hydrogen and Derivatives Imports in the European Union, developed by ESMAP, CCEE, GIZ, and the International PtX Hub, and Hydrogen Europe. First presented at European Hydrogen Week 2024, it offered insights into compliance, certification, and trade mechanisms. Experts guided participants through the complexities of EU hydrogen regulations, supporting informed decision-making in cross-border hydrogen trade.

### H4D Online Webinar Session: Leveraging De-risking Instruments and International Coordination to Catalyze Investments in Clean Hydrogen



The International Maritime Organization (IMO) is actively engaged in climate negotiations aimed at reducing greenhouse gas (GHG) emissions from the global shipping industry, with a goal of achieving net-zero emissions by 2050. During this ESMAP webinar we explored the outcomes of the latest negotiations. In this session, participants gained insights into the recently approved IMO Net-Zero Framework—a framework which introduces a combined marine fuel standard and a global greenhouse gas pricing mechanism, setting an important precedent regarding climate action in the maritime transport sector.

### H4D Online Webinar Session: Unlocking Opportunities: A Framework for Assessing Green Hydrogen Potential in Emerging Markets



The webinar highlighted the need for an enabling environment, focusing on clear strategies, government-backed investment mechanisms, cohesive regulations, and private sector engagement. This report provides a framework for developers, investors, and policymakers to harness the potential of green hydrogen in emerging markets. Recognizing that there is no one-size-fits-all approach, the report encourages countries to tailor their strategies to align with their unique strengths, priorities, and challenges for a successful green hydrogen market development.

## EVENTS RECAP

[Click to open for more information](#)



### Hydrogen Mediterranean Summit - HMS 2025 [18-19 Feb 2025. Tiba Rose Plaza Hotel, Cairo, Egypt]

Hydrogen Egypt hosted the H2 MED Forum, spotlighting regulatory challenges and opportunities in the hydrogen sector. The forum warned against overregulation in Europe and stressed the need for global competitiveness. It also explored low-carbon fertilizers' role in climate action and food security. Discussions emphasized Egypt's potential as a clean energy hub, aligned with the EU-Egypt Strategic Partnership announced in March 2024.



### Green Hydrogen India Symposium 2025 [February 10, 2025. New Delhi, Delhi, India]

The Green Hydrogen India Symposium 2025, held on February 10th in New Delhi, India, brought together stakeholders, policymakers, and industry leaders to deliberate and discuss the future of India's green hydrogen ecosystem. This event was a platform for knowledge exchange, policy discussions, and industry collaboration. The Panel discussions and sessions focused on supply chain localisation, financing hurdles, and global developments impacting the green hydrogen industry. |



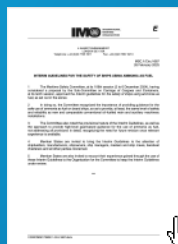
### EU RFNBO Certification Workshop [March 5, 2025. New Delhi, Delhi, India]

GH2 India co-organised the EU RFNBO Certification Workshop, a significant step toward aligning India's green hydrogen framework with global certification standards. The workshop convened policymakers, regulators, and industry leaders to explore EU RED II certification requirements for hydrogen and PtX products. These discussions like these are vital in bridging regulatory gaps and fostering collaboration.



## Selected publications and articles on clean hydrogen from H4D Partners

Click to open for more information



**Ammonia Energy Association:**  
“Paving the way for ammonia as a marine fuel: insights into the IMO's Interim Guidelines”



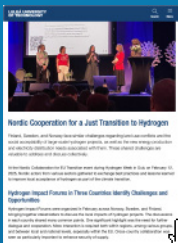
**Ammonia Energy Association:**  
“Trinidad & Tobago: future production pathways for the world's largest ammonia exporter”



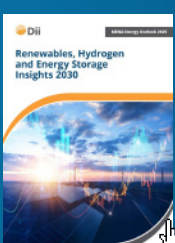
**CH2ESS:**  
“Luleå University of Technology Leading the Way Towards the Sustainable Industrial Clusters of the Future”



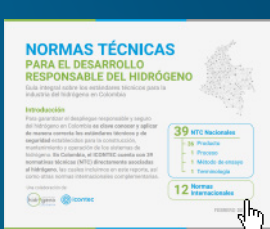
**CH2ESS:**  
“Abandoned mines could become energy storage for a fossil-free industry”



**CH2ESS:**  
“Nordic Cooperation for Just Transition to Hydrogen”



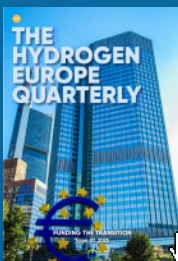
**Dii Desert Energy:**  
“MENA Energy Outlook 2025 – Renewables, Hydrogen and Energy Storage Insights 2030”



**Hidrogeno Colombia:**  
Release of the technical standards for the responsible development of Hydrogen



**Hydrogen Council:**  
“Closing the cost gap. Unlocking demand for clean hydrogen by 2030”



**Hydrogen Europe:**  
The Hydrogen Europe Quarterly



**Hydrogen Europe:**  
Unraveling the myth of bankability for green hydrogen.



**[SPA] GIZ:**  
Necesidades de Recursos Humanos en Proyectos de Hidrógeno Verde en Chile



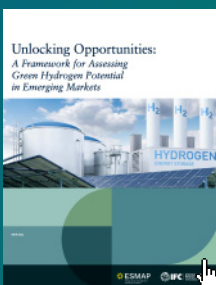
**H2Global:**  
“Renewable Ammonia: Kenya's Business Case”



**International PtX Hub:**  
“Non-fossil Fuel Categories in EU Legislation and their Significance for Hydrogen”



**[SPA] International PtX Hub:**  
Análisis de potenciales usos y demanda de H2V y PtX in Argentina



**International Finance Corporation (IFC):**  
Unlocking Opportunities: A Framework for Assessing Green Hydrogen Potential in Emerging Markets



**Green Hydrogen Organization:**  
“Green Fuel Producers Are Ready to Provide 10% of Marine Fuels by 2030”



**OECD:**  
“Scaling Up Finance for Clean Hydrogen – Case studies on low-carbon hydrogen”



**World Bank- ESMAP – Oxford Institute for Energy Studies:**  
Oxford Energy Forum



**World Bank- ESMAP:**  
Summary of monthly webinars on certification, financing, and other relevant topics

## Major hydrogen project financing updates in the news



India launched its first hydrogen hub, a \$21.6 billion project in Andhra Pradesh led by NTPC Green Energy and a state-owned partner. The complex will develop 20 GW of clean energy.

[LINK](#)



Japan announced a ¥5.7billion (approx. \$38m) subsidy tender under hydrogen hubs program for companies to carry out FEED work on pipeline and storage infrastructure needed to build out hydrogen hubs in the country.

[LINK](#)



Egypt disclosed a \$17 billion green hydrogen plant in South Sinai to produce up to 400,000 tpa, backed by a 3.1 GW solar array and pumped hydro storage. The project's first phase targets 2030 and plans exports to Europe via the Suez Canal.

[LINK](#)



Morocco approved six green hydrogen projects worth \$32.5 billion in the south of the country. Focused on producing green ammonia, e-fuels, and green steel, the projects were selected through the government's “hydrogen offer” program.

[LINK](#)



Namibia completed acquisition of a 24% equity stake in Hyphen Hydrogen Energy through the SDG Namibia One Fund, backed by an initial €23 million disbursement.

[LINK](#)



Mauritania granted GreenGo Energy access to 100,000 ha for the €1.4 billion Megaton Moon Green Hydrogen Project. The project targets 6 GW of electrolysis with Phase 1 delivering 339,000 tpa of green ammonia by 2029.

[LINK](#)



South Africa secured a €4.7 billion investment package from the European Union, with €4.4 billion dedicated to clean energy initiatives, including green hydrogen production.

[LINK](#)



Brazil selected 12 low-carbon hydrogen projects through the Ministry of Mines and Energy (MME) to establish hydrogen hubs and drive industrial decarbonization.

[LINK](#)

## Upcoming WB and H4D Partners activities

Click to open for more information



**World Hydrogen Asia**  
July 8-10, 2025 | Tokyo, Japan, in-person.

July



**5th Hydrogen Congress for Latin America & the Caribbean : H2LAC 2025**  
July 15-16, 2025 | Sao Paulo, Brazil, in-person.

July



**Global African Hydrogen Summit**  
September 9-11, 2025 | Windhoek, Namibia, in-person.

Sept



**Hydrogen Americas Summit**  
September 3-4, 2025 | Washington D.C., USA, in-person.

Sept



**European Hydrogen Week**  
Sep 29- Oct 03 2025 | Brussels, Belgium, in-person.

Sept-Oct



### Upcoming H4D Webinars:

- July 24, 9 AM (ET) - ESMAP Webinar - Clean H2 for Road Transport
- August 28, 9 AM (ET) - ESMAP Webinar- Natural Hydrogen
- September 9, 9 AM (ET)- ESMAP Webinar- Social License to Operate (SLO)