

5th Issue,
October 2024

H4D Review



THE WORLD BANK
IBRD • IDA



ESMAP
Energy Sector Management
Assistance Program



Dear H4D Partners and Stakeholders:


The World Bank team is pleased to announce the release of the fifth quarterly newsletter, H4D Review. This publication aims to provide H4D's partners, stakeholders, and observers with up-to-date information on ongoing activities, analytical work, and forthcoming events related to clean and low-carbon hydrogen.

List of H4D Partners

The Hydrogen for Development Partnership (H4D) has 45 partners, including associations, business organizations, hydrogen clusters, knowledge institutions, laboratories, public agencies, and development institutions. List of H4D Partners (status October 1, 2024):

- ✓ Africa Green Hydrogen Alliance (AGHA)
- ✓ Ammonia Energy Association (AEA)
- ✓ Australian Hydrogen Council (AHC)
- ✓ Centre for Hydrogen Energy Systems Sweden (CH2ESS)
- ✓ Chilean Hydrogen Association (H2Chile)
- ✓ Clean Fuel Ammonia Association
- ✓ Corporation for the Promotion of Production (CORFO)
- ✓ Costa Rican Hydrogen Alliance
- ✓ Development Agency of the State of Ceara (ADECE)
- ✓ Dii Desert Energy
- ✓ Electricity Commercialization Chamber of Brazil (CCEE)
- ✓ Freeport Saldanha
- ✓ Fuel Cell and Hydrogen Energy Association (FCHEA)
- ✓ German Development Cooperation Agency (GIZ)
- ✓ Green Hydrogen Catapult
- ✓ Green Hydrogen Organization (GH2)
- ✓ H2 Global Foundation
- ✓ H2 Korea
- ✓ H2 Mexico
- ✓ H2AR Consortium
- ✓ H2LAC
- ✓ Hydrogen Colombia Association (H2Colombia)
- ✓ Hydrogen Council
- ✓ Hydrogen Egypt
- ✓ Hydrogen Europe
- ✓ Hydrogen Task Force
- ✓ India Hydrogen Alliance (IH2A)
- ✓ International Finance Corporation (IFC)
- ✓ Japan Bank for International Cooperation (JBIC)
- ✓ Japan Hydrogen Association (JH2A)
- ✓ Ministry of Energy and Mineral Resources of Jordan
- ✓ Ministry of Foreign Affairs of The Netherlands (MINBUZA)
- ✓ Moroccan Agency for Sustainable Energy (MASEN)
- ✓ Namibia Green Hydrogen Programme (GH2 Namibia)
- ✓ National Administration of Fuels, Alcohol, and Portland (ANCAP)
- ✓ National Renewable Energy Laboratory (NREL)
- ✓ Netherlands Enterprise Agency (RVO)
- ✓ Organization for Economic Co-Operation and Development (OECD)
- ✓ Pecem Complex (PECEM)
- ✓ Peruvian Hydrogen Association (H2Perú)
- ✓ Petroleum Development Authority of Sri Lanka (PDASL)
- ✓ Research Institutes of Sweden (RISE)
- ✓ Rocky Mountain Institute (RMI)
- ✓ Western Cape Government
- ✓ World Bank (WB)

The H4D team is delighted to welcome its new partners: the Namibia Green Hydrogen Programme (**GH2 Namibia**), the Peruvian Hydrogen Association (**H2Perú**), and the Moroccan Agency for Sustainable Energy (**MASEN**). These esteemed institutions joined the initiative between April and September 2024.



4 work streams launched



Growth in number of members from 12 to 45



3 in-person events were held in India, Chile, and Colombia



3 partners cooperated to issue report




14 webinars organized in collaboration with partners

Operationalizing H4D Partnership

On June 18th, the H4D Partnership hosted its second online meeting of the year. The event provided updates on the progress of each of the workstreams and introduced plans for a new **Workstream (WS5) Hydrogen use in industry**. Over 30 partners participated in the session, highlighting the collaborative effort and commitment to advancing hydrogen development.

H4D workstreams

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



Herman Jonker
Western Cape Government

Newly appointed



Hiroaki Machii

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Rafael Ben

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



Mikaa Mirald
Hydrogen Task force
by MEDEF International & France Hydrogène

Newly appointed



Ricardo Gedra
ccee



Carolina Lopez-Rocha
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WS3. Investments, financing, business models and procurement.
Facilitated by:



Deger Saygin
OECD

Newly appointed



Dolf Gielen

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Michelle Carvalho
Metanias Hallack

WS4. Socioeconomics and sustainability.
Facilitated by:



Caroline Biotteau
Green Hydrogen Organisation

Newly appointed



Monica Gasca
hidrogeno COLOMBIA



Carolina Lopez Rocha

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Ignacio Berreta Sartini

Newly appointed

[To see more, click on the image]



AEA| \$37 billion in egyptian ammonia investments

At the recent Egypt-EU Investment Conference, Egypt announced over \$37 billion in investments for early-stage ammonia projects key agreements were signed with various developers, including DAI Infrastruktur, Ocior Energy, Volitalia, and DEME. These projects, spanning from the Gulf of Suez to the Nile Delta, aim to boost ammonia production for marine fuel and renewable hydrogen. The initiatives are expected to commence production between 2027 and 2028.



AGHA| Sustainable fiscal regimes for green hydrogen (GH2) projects: Financial modelling recommendations and tools

The Africa Green Hydrogen Alliance (AGHA) released a report emphasizing the critical role of financial modeling in developing sustainable fiscal regimes for developing countries. The report outlines how governments can utilize these tools and provides initial insights into potential fiscal policy measures for African nations.



CORFO| Corfo reaffirms commitment to stimulating private investment in green hydrogen industry

In a recent forum on hydrogen for Latin America and the Caribbean, Corfo's Executive Director of the Green Hydrogen Committee, Ana María Ruz, highlighted their efforts over the past 7 years. They have already allocated or committed \$75 million to incentivize private investment in Chile's hydrogen industry. By year-end, they plan to open a \$1 billion facility in collaboration with the World Bank, the Inter-American Development Bank (IDB), and German development banks. This initiative aims to boost the commercial-scale production of green hydrogen in Chile.



FCHEA| Hydrogen driving trucking and transit on path to zero emissions

Notably, the U.S. Department of Energy has committed \$100 million to boost hydrogen infrastructure and fuel cell technology. Additionally, several companies and investors are pouring \$6.2 billion into hydrogen projects, aiming to drive the trucking and transit sectors towards zero emissions. This investment is expected to accelerate the adoption of hydrogen-powered vehicles and support the development of necessary infrastructure.



H2GLOBAL| Canada announces CAD 300 million for H2Global initial auction

Canada has committed CAD 300 million to H2Global's initial auction, aiming to stimulate a market for green hydrogen. This significant investment will fund the first contracts under H2Global, focusing on closing the gap between green hydrogen supply and demand. The funding reflects Canada's dedication to advancing clean energy technologies and accelerating global decarbonization efforts through strategic financial support, positioning the country as a leader in the emerging hydrogen economy.



H2GLOBAL| Bezos Earth Fund awards USD 1 million support for H2Global Foundation to estimate a Market for clean hydrogen

The Bezos Earth Fund awarded \$1 million to the H2Global Foundation to accelerate the development of a market for clean hydrogen. This funding will support H2Global's efforts to bridge the gap between supply and demand for green hydrogen by leveraging public and private investments. The goal is to create a self-sustaining market that can scale up hydrogen production and distribution, contributing significantly to global decarbonization efforts.



H2LAC| Argentina advances in its energy transition with EU support

The European Union has committed €4 million to support Argentina's transition to green hydrogen, leveraging the country's abundant solar and wind resources. This investment will fund the development of renewable hydrogen production, primarily through electrolysis powered by clean electricity from Patagonia. The initiative positions Argentina to become a key player in the global hydrogen market while advancing its renewable energy infrastructure. The EU's financial backing underscores its commitment to fostering sustainable energy solutions in Latin America.



HYDROGEN EUROPE| European Commission approves Germany's €3bn hydrogen network finance plan

The European Commission has approved a €3 billion support scheme for Germany's hydrogen pipeline project. This funding aims to enhance Germany's hydrogen infrastructure, crucial for scaling up green hydrogen production and distribution. The investment will help establish a comprehensive hydrogen network, supporting the EU's broader goal of transitioning to sustainable energy sources. The scheme represents a significant commitment to advancing Germany's role in the hydrogen economy and promoting energy security across Europe.



HYDROGEN EUROPE| Hydrogen Europe and the Japan Hydrogen Association (JH2A) sign MoU to boost collaboration on hydrogen and its derivatives

Hydrogen Europe and the Japan Hydrogen Association (JH2A) have signed a Memorandum of Understanding (MoU) to enhance collaboration on hydrogen and its derivatives. The agreement focuses on sharing investment strategies and technological advancements to accelerate the development of hydrogen infrastructure. Both organizations aim to leverage joint funding and research efforts to advance the global hydrogen economy, with a strong emphasis on increasing investments and fostering innovation in clean hydrogen technologies.



HYDROGEN COUNCIL| The Hydrogen Council highlights key steps to unlock green energy at G20 Brazil 2024 & Clean Energy Ministerial

The Hydrogen Council participated in the G20 Brazil 2024 and Clean Energy Ministerial, where CEO Ivana Jemelkova and Policy Director Daria Nochevnik co-hosted the International Hydrogen Trade Forum. They highlighted the importance of regulatory certainty, demand-side incentives, and global standards to unlock private capital for hydrogen projects. With \$75 billion committed globally, an eightfold increase is needed by 2030 to meet climate goals. COP29 Azerbaijan will continue this critical dialogue.



JBIC| JBIC signs MoU with Saudi Electricity Comany (SEC)

JBIC and SEC have signed an MoU to strengthen their partnership, focusing on Saudi Vision 2030's energy transition goals. The agreement includes leveraging Japanese investments and technology for SEC's projects, such as renewable energy and infrastructure. JBIC's support, including recent, GREEN-financed projects, aligns with their ESG policies and commitment to global carbon neutrality. This collaboration aims to expand Japanese business opportunities in Saudi Arabia and foster sustainable development.



JBIC| Abu Dhabi National Oil Company (ADNOC) and JBIC sign \$3 billion green financing agreement, including hydrogen

ADNOC and JBIC have signed a \$3 billion green financing agreement, focusing on hydrogen projects. The deal includes funding for various green initiatives, with a significant portion allocated to hydrogen development. This investment underscores ADNOC's commitment to advancing its renewable energy capabilities and supports Japan's strategic energy goals. The agreement aims to drive large-scale hydrogen production and enhance sustainable energy infrastructure.



NL| 2nd high-level roundtable of the International Hydrogen Trade Forum and the Hydrogen Council

The Government of the Netherlands hosted the 2nd High-Level Roundtable of the International Hydrogen Trade Forum, led by Minister Jetten. The event highlighted a €2 billion investment in hydrogen infrastructure. Key discussions included expanding international hydrogen trade and enhancing collaborative efforts to meet global climate goals. This significant financial commitment underscores the Netherlands' role in driving forward the hydrogen economy and supporting sustainable energy transitions worldwide.



RVO| Dutch green hydrogen (GH2) proposition to Namibia

A Dutch delegation visited Namibia from September 1-6 to explore hydrogen projects and attended the Global African Hydrogen Summit. Namibia's potential for green hydrogen is vast due to its sunny and windy climate. The Netherlands, through various collaborations, proposed to aid hydrogen development, especially in Lüderitz, and invested €40 million in the SDG Namibia One Fund. This initiative opens significant opportunities for Dutch businesses in infrastructure and urban development.



WORLD BANK| WB study explores green marine fuel market potential in South Africa

The World Bank has recently completed a groundbreaking study titled "Creating a Green Marine Fuel Market in South Africa." This study provides an in-depth analysis of the key requirements for establishing a comprehensive green shipping fuel production and supply chain in South Africa. By identifying the necessary infrastructure, production capacities, and supply logistics, the World Bank aims to position South Africa as a pivotal player in the global transition to sustainable maritime fuels, contributing to the decarbonization of the shipping industry.

Latest events and presentations by World Bank and H4D Partners

[To see more, click on the image] 

Hydrogen Production, the Role of Storage, and Transportation-Related Infrastructure



The speakers emphasized the crucial role of infrastructure in the hydrogen economy, focusing on storage, transportation, and production. They discussed the World Bank's role, cost variations in hydrogen delivery, and investment opportunities in decarbonizing the shipping sector. Key points included the importance of underground storage, hydrogen carriers, and the challenges of adapting ports and ships.

Third H4D Partners Meeting and Stakeholders Forum



During the Third H4D Partners' Meeting in Colombia, World Bank representatives highlighted the importance of green hydrogen for the global net zero transition. World Bank staff emphasized Colombia's strategic role due to its renewable resources and commitment to climate change. The meeting focused on public and private sector collaboration, with the World Bank providing financial support and risk mitigation to boost private investment in hydrogen initiatives.

The Clean Hydrogen Economy and Saudi Arabia: Domestic Developments and International Opportunities



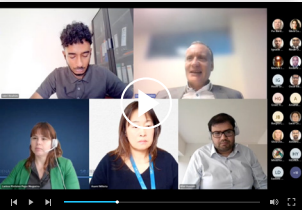
Experts discussed Saudi Arabia's potential in the clean hydrogen market, focusing on its role in decarbonization, regional collaboration, and technological innovation. Key topics included infrastructure development, regulatory challenges, and international partnerships, underscoring Saudi Arabia's strategic roadmap and ambitious net-zero objectives.

OECD- De-risking instruments and international co-ordination for clean hydrogen in emerging markets and developing economies



The event attracted over 160 participants from government, industry, and finance sectors, who actively contributed to discussions on risk mitigation strategies for green hydrogen projects. Their input supported ongoing analysis by the World Bank and OECD on de-risking mechanisms for clean hydrogen development in emerging markets and developing economies (EMDEs).

ESMAP BBB Hydrogen as a Catalyzer for Energy Transition in Africa



IRENA presented the African Continental Power Systems Master Plan (CMP), emphasizing green hydrogen planning scenarios. Presenters discussed the SPLAT-MESSAGE framework for power system expansion and shared insights from their report, "Planning and Prospects for Renewable Power: North Africa."

Women Moving the Decarbonization Industry: Insights from Developing Countries and Emerging Markets



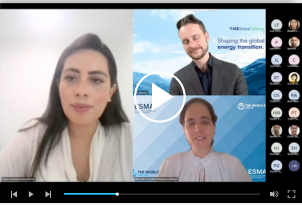
The workshop highlighted international best practices in clean hydrogen, addressing the gender gap in the energy sector. It showcased Chile and India's green hydrogen initiatives, supported by the World Bank, aimed at achieving carbon neutrality and low-cost production. The event stressed the importance of empowering women in renewable energy.

Webinar Green Iron Corridors: Building the Competitive Case for Green Iron as a Vector for Green Hydrogen Trade



Experts discussed Green Iron Trade Corridors as a crucial element in green hydrogen trade. Representatives from Green Hydrogen Catapult and RMI emphasized their significance in reducing emissions in the steel industry and promoting the development of the hydrogen sector.

Accelerating Clean Hydrogen Markets: Insights from H2Global Pilot Action



H2Global presented the outcomes of its pilot auction, emphasizing the role of its double-sided auction mechanism in advancing clean hydrogen markets. The presentation also offered valuable insights into future H2Global tenders and their potential impact on developing countries.



Hydrogen for Development Partnership

Regional presentation of 10 GW Lighthouse Initiative at the LAC H2 Summit

Acelerando el desarrollo de proyectos en LAC: soluciones con la Iniciativa Global 10 GW



Accelerating project development in LAC: solutions with the 10 GW Lighthouse Initiative

Experts from the World Bank (WB), European Investment Bank (EIB), German International Cooperation Agency (GIZ) and Inter-American Bank (IAB), jointly discussed the 10 GW Global Initiative. They assessed the need to support developers in operationalizing clean hydrogen projects in Latin America and the Caribbean (LAC). The session focused on identifying the key challenges and obstacles encountered at each stage of hydrogen project development while proposing strategic solutions to facilitate the achievement of the Final Investment Decision (FID).



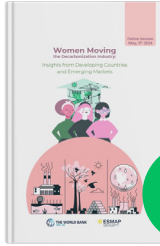
H4D Partnership Insights Sharing



3rd Partners' Meeting Colombia – World Bank



World Hydrogen Summit 2024 in Rotterdam – World Bank/Government of the Netherlands

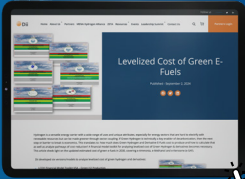


Women Moving the Decarbonization Industry – World Bank

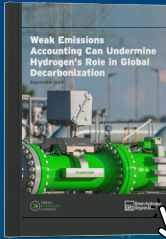
Recent publications and articles on clean hydrogen from H4D Partners



Dii Green Revolution 2024. A socio-economic perspective on renewables and hydrogen in the MENA Region (Report)– Dii Desert Energy



Levelized cost of green e-fuels (Article)- Dii Desert Energy



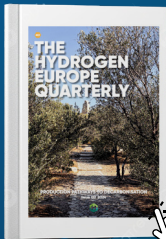
Weak emissions accounting can undermine hydrogen's role in global decarbonization (Article) – GH2/Green Hydrogen Catapult



Policy brief – January to June 2024 – GH2 India



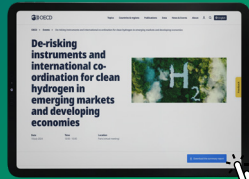
Risks perceived by developers when financing clean hydrogen projects in Latin America (Infographic) – H2 LAC



The Hydrogen Europe quarterly 2 - 2024. Production pathways to decarbonization (Newsletter) – Hydrogen Europe

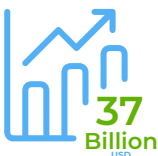


Clean Hydrogen production pathways - report 2024 (Report) – Hydrogen Europe



De-risking instruments and international co-ordination for clean hydrogen in emerging markets and developing economies (Summary report) – OECD

Major hydrogen project financing updates in the news



Egypt has announced over \$37 billion in investments for early-stage ammonia projects. Key agreements were signed with various developers. [\[Link\]](#)



The WB has approved a second Development Policy Financing Operation of \$1.5 billion to help India accelerate the development of low-carbon energy. [\[Link\]](#)



Sunfire has secured more than €500 million to accelerate growth and industrialisation of its green hydrogen technologies. [\[Link\]](#)



The European Commission has approved a €3 billion German scheme to support the construction of the Hydrogen Core Network (HCN). [\[Link\]](#)



The European Union has committed €4 million to support Argentina's transition to green hydrogen, leveraging the country's abundant solar and wind resources. [\[Link\]](#)



Global impact investors IFC, ADB and DEG has announced an investment of \$275 million into India's leading renewable energy solutions platform, FPEL. [\[Link\]](#)

Upcoming WB and H4D Partners activities




Dii Desert Energy Leadership Summit
15-16 October 2024, Palais Liechtenstein, Garden Palace, Vienna, Austria, in person.



OECD Forum on Green Finance and Investment 2024
15-16 October 2024 | Paris, France, in person.



H4D – IRENA Online Webinar Series
October 22, 2024 | Online. [Join us here](#) 



IX Energy Week
Oct 28 – Nov 1, 2024 | Asuncion, Paraguay, in person.



Hydrogen Transition Summit in the sideline of COP29
15 November | Baku, Abseron, Azerbaijan, in person.



European Hydrogen Week 2024
18-22 November | Brussels, Belgium, in person.



COP 29
11-24 November | Baku, Azerbaijan, in person.



Hydrogen Conference 2024
December 11-12, 2024 | Stockholm, Sweden, in person.

[\[To see more, click on the event title\]](#)

