



H4D Review



Dear H4D Partners,

The [Hydrogen for Development \(H4D\) Partnership](#) is a global initiative convened by the World Bank Group (WBG) to build a platform for knowledge sharing, capacity building, and financing by fostering international cooperation needed to afford tailored-made solutions for developing countries and emerging markets on green and low-carbon hydrogen. The knowledge produced by the H4D Partnership will support the implementation of policies and regulations to build a hydrogen economy.

The [Energy Sector Management Assistance Program](#) (ESMAP) provides the Secretariat of the H4D Partnership and works closely with partners, stakeholders, and observers.

The World Bank Group (WBG) team is pleased to announce the second quarterly newsletter, H4D Review. The goal is to provide the latest information about the activities, analytical work, and upcoming events on green and low-carbon hydrogen to H4D's partners, stakeholders, and observers.

As of May 31, 2023, H4D has 28 partners, including associations, business organizations, hydrogen clusters, knowledge institutions, laboratories, public agencies, and development institutions.

List of H4D Partners (status May 31, 2023)

- African Green Hydrogen Alliance (AGHA)
- Agência de Desenvolvimento do Estado do Ceará (ADECE)
- Australian Hydrogen Council
- Câmara de Comercialização de Energia Elétrica – CCEE
- LTU Center for Hydrogen Energy Systems Sweden (CH2ESS)
- Corporación de Fomento de la Producción (CORFO)
- Dii Desert Energy
- Fuel Cell and Hydrogen Energy Association (FCHEA)
- Green Hydrogen Catapult
- Green Hydrogen Organisation
- H2ar Consortium
- H2 Chile
- H2 Colombia
- H2 Korea
- H2 Mexico
- H2LAC
- Hydrogen Council
- Hydrogen Europe
- India Hydrogen Alliance
- Industrial and Port Complex of Pecém (CIPP)
- Japan Hydrogen Association (JH2A)
- Ministry of Energy and Mineral Resources from Jordan
- National Renewable Energy Laboratory (NREL)
- Research Institutes of Sweden (RISE)
- Rocky Mountain Institute (RMI)
- RVO Netherlands
- World Bank
- IFC

The H4D team extends a warm welcome to the new partners: Câmara de Comercialização de Energia Elétrica (CCEE), Dii Desert Energy, H2ar Consortium, H2 Korea, Industrial and Port Complex of Pecém (CIPP), Japan Hydrogen Association (JH2A), and Ministry of Energy and Mineral Resources from Jordan. These institutions joined the initiative between February and May 2023. We expect the number of partners to continue growing, as we reach out to other key players in the hydrogen space (governments, IFIs, business associations).

Operationalizing H4D

After thorough consultations and meetings, H4D partners approved four work streams (WS) to be operationalized in the next 12 months and two co-chairs were selected to support the activities and dialogue applicable to each work stream.

- **WS 1. Clean hydrogen technologies, infrastructure, and systems integration** will be co-chaired by **Japan Hydrogen Association** Toshihiro Aida and **RMI** Thomas Koch Blank. Partners agreed that the deliverables for 2023 will include (i) a short paper on systems integration, (ii) a short paper on shared/enabling infrastructure, and (iii) a study tour to Sweden.
- **WS 2. Enabling policy and regulatory frameworks** will be co-chaired by **CCEE** Ricardo Gedra and **Hydrogen Council** Daria Nochevnik. Partners agreed that the deliverables for 2023 will include: (i) monthly webinars on certification, financing, and other relevant topics that will support knowledge sharing (ii) online best practice repository hosted in H4D website, and (iii) a guidebook on the policies and regulations governing imports of hydrogen to Europe led by Hydrogen Europe.
- **WS 3. Investment, financing, business models, and procurement** will be co-chaired by **GH2** Jonas Moberg and **FCHEA** Frank Wolak. Partners agreed that the deliverable for 2023 will include: (i) short paper on global best practices to define offtake (volume, price, duration, quality).
- **WS 4. Socioeconomics and sustainability** will be co-chaired by **Africa Green Hydrogen Alliance** Susan Ombuya and **H2 Colombia** Monica Gasca. Partners agreed that the deliverables for 2023 will include: (i) five case studies showcasing socio-economic benefits and (ii) five case studies on how to enhance social acceptance.

Co-chairs will convene and lead quarterly meetings with partners and stakeholders to support the dialogue among participants, facilitate the timely completion of deliverables and report relevant activities related to each work stream.

Partner's news

- **CORFO** launched a request for information (RFI) call targeting companies interested in fabricating or assembling electrolyzers and associated components ([link](#))
- The **Africa Green Hydrogen Alliance** presented the Nouakchott Message with support of the Mauritania Ministry of Petroleum, Mines and Energy, the Green Hydrogen Organisation and UN Climate Change High Level Champions ([link](#))
- **H2LAC** launched its 15th review featuring relevant news about hydrogen in Latin America and the Caribbean ([link](#))
- **FCHEA** released its Hydrogen and Fuel Cell Safety Report, May 2023 Edition ([link](#))
- **Dii Desert Energy** presented its newsletter 'Desert Power is Going Global' ([link](#))
- **LTU CH2ESS** launched the first course for PhD students and engineers who wish to have an overview of the hydrogen industry ([link](#))
- The Government of Ceará, the **Port of Pecem** and the Netherlands signed an agreement to develop a green hydrogen hub to boost production and export ([link](#))

Recent events and presentations by WBG and H4D Partners

- **First H4D Stakeholders Forum** held in New Delhi (April 24). Over 120 participants actively engaged in six different roundtables discussing aspects related to finance, project design, hydrogen hubs and socioeconomic benefits of green hydrogen. World Bank team announced the lending of 1-billion-dollar project to support green hydrogen in India. ([link](#))
- **First in-person H4D Partners Meeting** in New Delhi (April 25). Twelve partners and several observers gathered to agree on the operationalization of the work program and delivered a position paper to the Government of India on the support that the H4D initiative can provide to support India's Green Hydrogen Mission ([link](#))
- **World Bank Group gathered over 50 experts at the World Hydrogen Summit in Rotterdam** (May 10-11) The WBG five side-events to discuss the needs, opportunities and challenges to support clean hydrogen projects in emerging markets and developing countries ([link](#))

- **H2Colombia** hosted Second International Hydrogen Congress and announced a collaboration with the European Union and the Colombian Ministry of Energy to undertake two technical studies with the objective of establishing a public-private fund that will facilitate the financing of large-scale green hydrogen projects. ([link](#))
- **OECD Environment Directorate** hosted second webinar on low-carbon hydrogen aimed to better understand the renewable energy implications of low-carbon hydrogen production in Asia (India, Indonesia, the Philippines, Thailand and Viet Nam) ([link](#))
- **H4D and Eindhoven University of Technology** hosted the webinar Can a GREEN HYDROGEN export economy provide local socio-economic and sustainability benefits for developing countries? ([link](#))

Upcoming WBG and H4D activities

- H4D and CH2ESS will host a study tour in Sweden for government officials from India, as agreed in the first in-person H4D partners meeting.
- World Bank and VITO will host a webinar on the 'Macroeconomic impacts (GDP, employment, and GHG emissions) of green hydrogen industry in Switzerland' ([link](#))
- World Bank will lead a publication on financing hydrogen in developing countries to be presented at COP 28 ([link](#))

Recent publications and articles on low-carbon hydrogen

- Unleashing the power for the clean energy transition ([link](#))
- Financing renewable hydrogen globally: ramp up to 2030 only needs \$150 bn/year ([link](#))
- Clean Ammonia in the future energy system report ([link](#))
- Hydrogen Europe Quarterly Magazine Q2 of 2023 ([link](#))
- Hydrogen Insights 2023: An update on the state of the global hydrogen economy, with a deep dive into North America ([link](#))
- Getting the right blend: Innovative development finance for the large-scale renewable and green hydrogen economy ([link](#))
- How to capture value in the emerging hydrogen market: Successful green hydrogen business models ([link](#))

Major hydrogen project financing updates in the news

- NEOM completes financial close at total investment value of 8.4 billion, building the world's largest green hydrogen plant to produce green ammonia at scale in 2026 ([link](#))
- The Australian Government announced the establishment of the \$2 billion Hydrogen Headstart initiative to underwrite the biggest green hydrogen projects to be built in the country ([link](#))
- European Energy Bourse (EEX) will publish a green hydrogen index called HYDRIX supporting the transparency of the EU hydrogen market ([link](#))

Upcoming events

- June 5-8, 2023: U.S. Department of Energy (DOE) Hydrogen Program's will host the Annual Merit Review and Peer Evaluation Meeting ([link](#))
- June 13-15, 2023: H2LAC 2023 Hydrogen Congress for Latin America and the Caribbean ([link](#))
- June 14, 2023: Dii Get Together in Munich ([link](#))
- October 15-26, 2023: Chile's Green Hydrogen Summit ([link](#))
- October 26-27, 2023: Asia-Pacific Hydrogen Summit in Sydney – co-organized by the Australian Hydrogen Council ([link](#))
- November 20-24, 2023: European Hydrogen Week in Brussels – co-organized by Hydrogen Europe, the European Commission, and the Clean Hydrogen Partnership ([link](#)).



The following Newsletter will be issued the last week of September 2023, and we will request your input by the second week of September.