Hydrogen has been used mainly as feedstocks for industrial applications. Nowadays, hydrogen is expected to be introduced as a new energy carrier that will play a key role in the success of decarbonization, in the industrial, transportation, and building sectors, or as a sector coupling between these sectors. Countries around the world are developing new hydrogen strategies and policies to promote the use of hydrogen through cost reduction and demand creation. The production of hydrogen has traditionally been carried out by extracting hydrogen from hydrocarbon resources, but in the near future, the use of renewable energy sources and CO2-recovery fossil fuels will enable the reduction of CO2 emissions1.

This webinar will look at the hydrogen in the clean energy transition from different angles: hydrogen strategies in energy and industrial policies, challenges in zero-carbon emission hydrogen energy carrier production with large-scale demand creation, research and development priorities in international cooperation.

Each session will start with presentations from leading experts followed by discussion.

**Expected outcomes**

The webinar will result in a summary report identifying the challenges and opportunities of addressing the energy system incorporated hydrogen energy carrier and will present perspectives for R&D planners and strategists. In addition, an executive summary will be presented to IEA’s Committee on Energy Research and Technology (CERT).

**Registration:**

Registration for the event [HERE](#)
# Introductory presentations:

- **Global Hydrogen Review (tentative title)**
  - Uwe Remme, Head of IEA’s Hydrogen and Alternative Fuels Unit, International Energy Agency, (5 mins)

- **Mission Innovation (tentative title)** (5 mins)
  - (speaker to be confirmed), Mission Innovation

## Session I: Introduction to hydrogen in decarbonization transition policies

**Moderator:** Atsushi Kurosawa, EGRD vice chair

This session focuses on lessons learned from hydrogen strategies.

### Hydrogen Strategies in Japan (tentative title)
- (speaker to be confirmed), Advanced Energy Systems and Structure Division, Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry

### EU’s Hydrogen Strategy
- Luca Polizzi, Policy Officer, Research and Innovation Policy on Hydrogen, European Commission

### Hydrogen Strategies in the USA (tentative title)

### Discussion

## Session II: Hydrogen value chain in energy system - from demonstration to commercialization

**Moderator:** Johannes Tambornino, EGRD vice chair

This session focuses on status of demonstrations and bottlenecks towards commercialization.

### Hydrogen industrial value chain - production, transportation and utilization (tentative title)
- Motohiko Nishimura, Kawasaki Heavy Industries

### WESTKÜSTE100 – Green Hydrogen on an industrial scale
- Michael Berger, University of Applied Science Westküste

### Discussion

### Break

## Session III: R&D priorities

**Moderator:** Herbert Greisberger, eNU (tbd)

This session focuses on hydrogen related R&D priorities.

### System analysis - hydrogen opportunities in energy R&D (tentative title)
- Yuki Ishimoto, Hydrogen Energy Group, The Institute of Applied Energy

### Research Gaps towards hydrogen commercialization – findings from Net Zero Emissions Report and Tracking Clean Energy Progress (tentative title)
- Jose M Bermudez, Energy Technology Analyst, Hydrogen and Alternative Fuels, International Energy Agency

### Mission Innovation hydrogen valley analysis (tentative title)
- Markus Kaufmann, Roland Berger Strategy (to be confirmed)

### Discussions on future R&D directions and priority settings
- Technological Innovation
- Creating the market value chain (scale and infrastructure, cost, etc.)
- Other policy tools (economic incentives, regulations & standards, etc.)

### Concluding Remarks – Birte Jorgensen, EGRD Chair & Atsushi Kurosawa, EGRD vice chair
The Institute of Applied Energy
The Institute of Applied Energy (IAE) is a nonprofit organization conducting technology related research in broad energy areas. To secure stable energy supplies and address global environmental issues, strategic planning and implementation from long-term and global perspectives are prerequisites. The IAE conducts studies and organizes projects with broad network among industry, academia and the government. The activities of IAE are supported by the contributions from industry members and research contracts with government agencies, private industries. [https://www.iae.or.jp/e/](https://www.iae.or.jp/e/)

IEA’s Committee on Energy Research and Technology (CERT) and EGRD
The International Energy Agency’s Committee on Energy Research and Technology (CERT) co-ordinates and promotes the development, demonstration and deployment of technologies to meet challenges in the energy sector. The CERT has established four working parties: the Working Party on Fossil Energy; the Working Party on Renewable Energy Technologies; the Working Party on Energy End-Use Technologies; and the Fusion Power Co-ordinating Committee. Experts’ groups such as the EGRD are also created under the CERT. EGRD is an informal advisory group under CERT with the role of supporting CERT delegates with advice on R&D priority-setting and the linkage to governmental policy objectives, methods and approaches for evaluation of R&D activities, and understanding of emerging and systematic R&D topics. Recent topics include: Evaluating the impacts of energy innovation policies (2021), Circularity in the Clean Energy Transition (2021), The role of behavioural aspects for reaching net zero emissions by 2050 (2021), Energy infrastructures: public acceptance (2020), Energy Islands: Developing Renewable Energy Hubs (2020) and Energy Communities (2020). Workshop summaries are available here: [https://userstcp.org/iea-egrd](https://userstcp.org/iea-egrd)
Presentation speakers and moderators

**Birte Holst Jørgensen**, Technical University of Denmark, is Chair of the IEA EGRD. She is an experienced researcher and practitioner in the field of new energy technologies and systems, where she has specialized in energy R&D strategies and technology policies at the national, European and international levels. She is responsible for scientific advice at DTU Wind Energy, including technical assistance to the Danish Energy Agency’s Global Cooperation programme (offshore wind and RE integration). She is also Principal Coordinator of sustainable energy at the Sino-Danish Centre for Research and Education. Birte holds a PhD in Political Science (University of Copenhagen) and an MSc in Business Economics (Copenhagen Business School).

**Atsushi Kurosawa (moderator)** is Vice Chair of IEA EGRD. He is Director of the Global Environmental Programme, Research and Development Division, Institute of Applied Energy (IAE) in Japan. His research focuses on integrated assessments of global climate change and energy R&D strategies through the integrated assessment model GRAPE and the TIMES Japan model. He has held visiting and fellowship positions at many universities and institutes, including Stanford University, the Research Institute of Innovative Technology for the Earth, Kyushu University, the Japan Science and Technology Agency, the New Energy and Industrial Technology Development Organization and the University of Tokyo. He holds a PhD in Electrical Engineering (University of Tokyo), an MSc in Nuclear Engineering (Tokyo Institute of Technology) and a BSc in Nuclear Engineering (Nagoya University).

**Johannes Tambornino (moderator)** is Vice Chair of IEA EGRD. He is the head of the Energy Strategies and Systems Analysis Unit at Project Management Jülich, where he is responsible for the R&D program on energy systems analysis funded by the German Ministry of Economic Affairs and Energy. He is leading a group that covers a broad range of topics along the energy innovation chain and currently serves as the German representative in the IEA Experts’ Group on R&D Priority Setting and Innovation. He holds a PhD in Mathematical Physics and has actively pursued research in quantum gravity and cosmology at different laboratories in Canada, France and Germany before changing fields and devoting his time to energy-related issues.

**Michael Berger** got his Ph.D. (1986) and the Venia Legendi (1994) at the University of Duisburg, Germany, on Silicon Device Engineering. After several years in semiconductor industry he joined the University of Applied Sciences Westkueste, where he first became Dean of the Technology Department and then Vice President (2003 – 2016). Since 2018 he heads the Institute for the Transformation of the Energy System of his UAS. In 2021 he became the coordinator of the Center of Competence of Hydrogen Research in the state of Schleswig-Holstein. Dr. Berger is a board member of the project WESTKÜSTE100.

**Herbert Greisberger (moderator)** is Managing Director of the Lower Austrian Energy and Environment Agency (eNu), where his focus is on energy and innovation with a special focus on sustainable buildings and renewables. He is also part of the scientific management of the Austrian Green Energy Lab focusing on long-term developments and their consequences for society. He was formerly the Senior Scientist on R&D, innovation and energy technologies for the Austrian Energy Agency and the Austrian Society for Environment and Technology. Herbert holds a PhD (University of Stuttgart) and studied economics (Universities of Graz and Vienna) and is a lecturer at the Institute for Research and Education focusing on energy economy and energy management.