

Renewable hydrogen and cooperation opportunities between the EU and other world regions

Online GFSE – WEC Austria Workshop
15:00-17:30, 19th of October 2022, virtual Meeting
Final Agenda

Registration: <https://survey.lamapoll.de/GFSE---Renewable-hydrogen/>

Africa and other world regions such as Latin America are endowed with substantial renewable energy resources. Increasing renewable energy capacities is important to achieve development goals and improve its security of energy supply. Increasing the renewable energy capacities in these regions may also open opportunities for exports towards Europe.

Renewable hydrogen trade is one of those opportunities. Renewable hydrogen production in Africa and other world regions for local and export markets could help reduce the costs of production through scaling up and learning-by-doing effects. As part of REPowerEU, the EU hydrogen accelerator aims at increasing the production of renewable hydrogen both in the EU and worldwide to replace imported Russian gas. By 2030, approximately 10 million tonnes of hydrogen should be produced in the EU and another 10 million tonnes should be imported.^{1, 2}

In the long term, Europe can become an importer of renewable hydrogen. Increasing the demand for renewable hydrogen in the EU, however, will require, among others, refineries, steel production, fertilizer producers and other chemical industries to switch from natural gas to hydrogen. This requires substantial technology development and investments.

Intercontinental renewable hydrogen trade can help the EU diversify its sources of energy and reduce geopolitical dependence on Russia and other fossil fuel exporters. Renewable hydrogen trade can rely on a larger number of exporting countries diminishing the influence of single producing countries on the market and contributing to a new geopolitical landscape.

¹ European Commission, 2022: COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE EUROPEAN COUNCIL, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS REPowerEU: Joint European Action for more affordable, secure and sustainable energy. COM/2022/108 final. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A108%3AFIN>

² European Commission, 2022b: COMMISSION STAFF WORKING DOCUMENT IMPLEMENTING THE REPOWER EU ACTION PLAN: INVESTMENT NEEDS, HYDROGEN ACCELERATOR AND ACHIEVING THE BIO-METHANE TARGETS Accompanying the document COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE EUROPEAN COUNCIL, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS. REPowerEU Plan. SWD(2022) 230 final. Brussels, 18.5.2022. <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52022SC0230&from=EN> {COM(2022) 230 final}

The development of an intercontinental hydrogen market will depend on technology, infrastructure, environment, finance, global markets, and geopolitics.³ The production and trade of renewable hydrogen could become an opportunity for economic and social benefits for Africa and other world regions. However, it needs to be a fair trade system with equal-to-equal cooperation between the EU and its partners.

The development of renewable hydrogen production capacities requires the rapid development of renewable electricity potentials. A careful balance should be cast between electricity generation capacity to meet domestic electricity demand and capacity to produce renewable hydrogen. Affordable electricity to meet domestic demand is required to ensure the economic and social development of the continent.

Funding for renewable hydrogen projects still faces hurdles and uncertainties, due to the high costs, regulatory uncertainties, financing availability, and lack of supply chain maturity among others.⁴ Financing of renewable hydrogen projects requires the projects to have a bankable offtake scheme.⁵ Replacing existing uses of grey hydrogen in the production of ammonia and or refineries can be the first opportunities for offtake of renewable hydrogen and may be easier to finance. These offtake models are more familiar to the banks and are more likely to lead to a bankable project. Access to domestic and international financing is necessary to advance the installation of renewable electricity and renewable hydrogen capacity.⁶ Financial support mechanisms may be required in the first phase to compensate for the higher price of renewable hydrogen.

Renewable hydrogen projects in Africa and other regions face a number of challenges such as lack of technical expertise, low rates of access to electricity and significant growth of domestic demand for electricity, water scarcity, undeveloped infrastructure (ports, pipelines, roads) to facilitate trade and exports and lack of policy and investment frameworks. Transport infrastructure towards Europe, e.g. maritime shipping of Ammonia or transport of gaseous hydrogen via hydrogen pipeline from North Africa can also represent a significant bottleneck and needs to be solved in a cost-effective and safe manner without security risks.⁷ Overcoming these barriers requires cooperation between European and its counterparts.

³ De Blasio, N., Pflugmann, F., 2020: Geopolitical and Market Implications of Renewable Hydrogen: New Dependencies in a Low-Carbon Energy World.
<https://www.belfercenter.org/publication/geopolitical-and-market-implications-renewable-hydrogen-new-dependencies-low-carbon>

⁴ Brooks, C., 2022: EU countries failing to lighten burden of hydrogen costs to reach net-zero: study.
<https://cleanenergynews.ihsmarkit.com/research-analysis/eib-report-finds-eu-countries-failing-to-lighten-hydrogen-costs.html>

⁵ Norton Rose Fulbright., 2021. Financing hydrogen projects brings unique challenges.
<https://www.nortonrosefulbright.com/en/knowledge/publications/cd725de6/financing-hydrogen-projects-brings-unique-challenges>

⁶ Toro, F., 2022: Countdown to a Green Hydrogen Economy in 2030. What does Brazil need to do to deliver on its ambitions? NIRAS. May 24, 2022. <https://www.niras.com/projects/building-a-green-hydrogen-economy-in-brazil/>

⁷ Barreto, L., 2022: Natural gas and renewable hydrogen in Africa and cooperation opportunities with the EU. Policy Brief #15. Global Forum on Sustainable Energy.
https://www.gfse.at/fileadmin/user_upload/gfse_policy_brief_gas_africa_v7_clean.pdf

As Europe pursues scarce LNG supplies, LNG prices are rising sharply and gas deliveries to buyers in other continents will be more difficult, threatening not only their energy security of supply but also their food security and triggering price increases in many sectors.⁸ Including renewable energy and energy efficiency in cooperation strategies between the EU and other world regions will help diversify European energy supply in terms of selling countries and energy carriers and democratise the global energy system, avoiding excessive influence by single market actors. Cooperation that starts with fossil LNG will have to provide perspectives for a shift towards renewable energies in the medium and long term, including hydrogen. Security considerations for the production and transport of both LNG and renewable hydrogen need to be addressed (e.g. safe maritime routes, democratic producing countries, diversification of suppliers and energy carriers).

The development of an intercontinental hydrogen market will require measures to support investments in hydrogen production projects and transport infrastructure but also the increase of demand for renewable hydrogen in the EU. Reduction of market risks and removal of commercialisation barriers to renewable hydrogen use in the EU are necessary.

Besides being exported towards the EU, renewable hydrogen can also be used as a feedstock and fuel by African industry to produce products with higher value-added than raw materials such as green steel, green fertilizers and cement for domestic consumption or exports to the European Union. This could help African countries and other EU trade partners to improve their balance of trade with the EU while avoiding some negative impacts of the EU Carbon Border Adjustment Mechanism (CBAM).⁹

Cooperation between the European Union and other world regions on renewable energy can become a building block for a broader cooperation on trade, security, technology, climate and environmental policy, thus strengthening the EU's external relations towards other regions. A sound cooperation requires development of trade relationships, substantial investments, opening of markets and recognition of exporting countries as equal partners.

OBJECTIVES

The objective of this workshop is to discuss the status of the development of renewable hydrogen in Africa and other world regions, specifically for exports towards the EU, and the challenges and opportunities ahead. It will also address building blocks of cooperation strategies between EU Member States and other world regions for hydrogen production, export and domestic use.

KEY QUESTIONS

1. What are the main barriers for the development of renewable hydrogen?
2. What are possible financing mechanisms for renewable hydrogen in the market development phase?
3. Which projects are currently being pursued? Which barriers are these projects facing?

⁸ Tsafos, N., 2022: Europe needs a smarter way out of Russian gas. Euractiv. 28 March 2022. <https://www.euractiv.com/section/energy/opinion/europe-needs-a-smarter-way-out-of-russian-gas/>

⁹ Pleeck, S., Denton, F., Mitchell, I., 2022: An EU Tax on African Carbon – Assessing the Impact and Ways Forward. Blog. Center for Global Development. February 10, 2022. <https://www.cgdev.org/blog/eu-tax-african-carbon-assessing-impact-and-ways-forward>

4. What policies and business models are required to develop renewable hydrogen?
5. Which cooperation strategies should be pursued by the EU to develop renewable hydrogen production in other world regions?

Agenda	
15:00 – 15:05	<p>Welcome</p> <ul style="list-style-type: none"> • MMag. Dr. Irene Giner-Reichl, Ambassador a.D., President of GFSE
15:05-15:15	<ul style="list-style-type: none"> • Leonardo Barreto, „Natural gas and renewable hydrogen in Africa and cooperation opportunities with the EU“, Austrian Energy Agency/GFSE Secretariat
15:15 – 16:30	<p>Presentations (15 min. each)</p> <ul style="list-style-type: none"> ○ Dr. Michael Losch, Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK) and World Energy Council Austria ○ Dr. Rudolf Zauner, Verbund and World Energy Council Austria ○ Chigozie Nweke-Eze, Hydrogen projects in Namibia, Integrated Africa Power ○ Khalid Salmi, Regional Center for Renewable Energy and Energy Efficiency (RCREEE), Green H2 Development in The Arab region (Promising Trends & Sustainability Concerns)
16:30 – 16:45	<ul style="list-style-type: none"> • Jorge Pinheiro Machado, R20 , Perspectives from Brazil on hydrogen
16:45-17:10	<p>Discussion</p> <ul style="list-style-type: none"> • All participants
17:10-17:15	<p>Closing</p> <ul style="list-style-type: none"> • MMag. Dr. Irene Giner-Reichl, Ambassador a.D., President of GFSE

*The **Global Forum on Sustainable Energy (GFSE)** is a neutral multi-stakeholder platform that facilitates international dialogue on energy for sustainable development by taking into account the special interests and challenges of developing countries. GFSE aims to establish a sustainable world energy system from a social, economic, and environmental perspective.*

GFSE contributes to both international discourse and information dissemination on sustainable energy. The multi-stakeholder platform plays a crucial role in facilitating sustainable energy projects by bringing together donors, investors, and project developers. Their interaction creates new opportunities and enhances existing initiatives in sustainable energy. <https://www.gfse.at/>

The World Energy Council Austria

For more than 90 years, the World Energy Council, based in London, has been at the forefront of the energy debate and sees itself as a global think tank and field of action to ensure energy for all. The World Energy Council is a UN accredited organisation and comprises more than 3,000 public and private organisations in nearly 100 countries.

All major international players in the energy sector and energy policy are part of the World Energy Council. Scientific studies and forecasts provide actors in politics, business and science with the information they need to make future-oriented decisions. The focus is on the interests of the people and the economy of our country for sustainable, efficient and affordable energy.

In Austria, authoritative companies and associations are members. The national organisation supports global, national and regional energy strategies through high-profile events (alternative mobility, energy transition, and energy storage), studies and rankings on the current energy situation in connection with the European environment. Cross-dialogues among the member organisations and the promotion of young energy professionals are an essential component.

<https://www.wec-austria.at/en/>