



AREI Panels COP 27

November 9 - 18, 2022

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COP27
SHARM EL-SHEIKH
EGYPT 2022



AREI'S VIRTUAL EVENT AT THE COP27

Theme: "Green hydrogen development in Africa: accelerating the energy transition"

Co-organized with **IRENA**

Background:

Green hydrogen is becoming an increasingly valuable resource in the global hydrogen markets. energy and a more attractive option in the transition to a cleaner energy system. It is beginning to attract increased attention in African markets, as its adoption in the global market is accelerating. By exploiting the large renewable resources of the continent to produce clean, green and sustainable hydrogen, Africa can stimulate the socio-economic growth, strengthen energy security and eradicate poverty energy by 2030.

Africa's search for clean energy solutions as it transitions to a low-carbon future is a major challenge.

emissions, as well as to fight energy poverty, accelerate the development of economic development and to ensure a constant supply of energy for the years to come, have created fundamental opportunities for the development of hydrogen green.

The development of green hydrogen in Africa will bring substantial benefits to continent, such as the acceleration of energy progress towards 100% renewable energy, the building a green economy in African countries, the improvement and acceleration of access to energy, creation of local value and jobs, access to professional training, capacity building and education.

In this regard, the Africa Renewable Energy Initiative (AREI) in cooperation with the International Renewable Energy Agency (IRENA) is organizing this event which aims to to talk about the potential and opportunities for Africa to develop its green hydrogen, in addition to educating participants on the legal and regulatory aspects of a successful hydrogen economy.

Date & Place

The event was held virtually on the sidelines of COP27 in Sharm El-Sheikh, Egypt. November 15, 2022 at 14:00 (Egyptian time) - 12:00 (GMT)



Dr. Mohamed Omran
Member of the CT
North Africa Region
AREI

Dr. Omran welcomed all the participants especially the representatives of IRENA which is co-organizing the event and recalled the framework of the meeting which is to discuss the role of Green Hydrogen in Africa in accelerating the energy transition.

He predefined the following points for discussion:

- Green hydrogen is becoming an increasingly valuable resource in global markets
- More than 50% of green hydrogen reserves are in Africa
- Adoption of green hydrogen contributes to lower energy costs

In a few sentences, he defined the role of green hydrogen in

- Energy storage
- Stimulation of development
- Socio-economic growth,
- Strengthening energy security
- Eradicate energy poverty by 2030
- The importance of by-products of hydrogen production



Mr. Emanuele Bianco
Program Officer at the International
Renewable Energy Agency
IRENA

Hydrogen opportunities in Africa in relation to marketing, trade, imports and exports

- An analysis of the African regional market
- A representation of the energy face of the African continent shows that the technical potential of green hydrogen production at less than 1.5 USD/kg in 2050, in EJ
- 50% of the world's hydrogen resources are in sub-Saharan Africa
- Estimates show that the demand for hydrogen will increase by 8 times between 2020 and 2050;
- 63 Hydrogen Strategies have been put in place
- He briefly presented the state of play and the perspectives of green hydrogen policy priorities

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He also spoke of the ***need to implement Border Carbon Adjustment Mechanisms by taxing carbon-intensive production machinery and equipment to discourage their production.***



Mr. Johan van den Berg
AEEP

Mr. Johan van den Berg, Head of the EEAP Secretariat said that a policy brief that addresses capacity development in renewable energy in Africa has been released since 2020 following nearly two decades of Europe-Africa partnership.

It is essential for Africa and Europe to integrate the development of green hydrogen into the sustainable development frameworks that already constitute the line of partnership between the two continents.

It will require a Green Hydrogen Development Pathway to be included by both continents in Agenda 2063 and Agenda 2030 to optimize results. It was agreed that the exploitation of green hydrogen fits perfectly into the Paris and Tokyo agreement

Given the interdependence of the SDGs, green hydrogen is a response that will contribute to the successful achievement of all 17 SDGs

Africa is on the right track with hydrogen, which is an interesting development in renewable energy.

It is therefore important to invest in the development of the human factor.

- Africa's endowment has not been well managed in terms of governance
- The need for integration without which hydrogen will not improve the daily life of the populations

It is time to develop governance systems focused on the creation of relevant value chain in the entrepreneurial framework which will generate a more political statement by the establishment of regulatory frameworks for the advent of hydrogen



Mr. Andris Piebalgs
European Union

Mr. Andris Piebalgs, Chairman of the Implementation Committee of the International Methane Emissions Observatory

In his presentation he made:

- State of play with African hydrogen
- Called for the creation of a global hydrogen forum or alliance

He said that the right choice should be made with green hydrogen in Africa by :

- Foreign direct investment should be de-risked through absorption mechanisms and public-private partnerships. Follow the German "H2Global" model.
- Flagship projects must lead the way. Scale is key to reducing costs, as well as engaging a range of local stakeholders, proving the concept and creating public-private partnerships.
- Africa could (and should) build the first major renewable hydrogen value chains. They don't exist elsewhere, and Africa has the skills and physical capacity.

Greater "democratization" and accessibility of the sector must be encouraged.

From the point of view of importing countries, it is important to ***avoid excessive dependence on any one producer.*** Hydrogen can be widely available and investment mechanisms should support this vision.



Mr. Olivier Grandvoinet
AFD

Mr. Olivier Grandvoinet, AFD presented the AFD and its field of action indicating that its financing has reached 12 billion in 2020 with the identification of nearly 1000 projects whose theme of energy transition occupies a large part such as:

- Access to energy for all
- Energy efficiency and demand management

A modernized and decarbonized energy supply by :

- Policy support
- Mobilizing and strengthening the contribution of all players in the energy transition

AFD's key messages on green hydrogen are generally:

- GH2s will likely be part of the solution to achieving the Paris Agreement goals of decarbonizing economies in the second half of the 21st century
- The development of GH2 involves fundamental changes
- Question of GH2 costs/competitiveness - Main factors for reducing the cost of GH2

We must be careful not to favor the production of hydrogen at the expense of other resources such as water, especially since some countries are below the established threshold:

- Priority of access to local populations
- AFD's support for the establishment of regulatory and legislative frameworks to contribute to the installation of appropriate frameworks for hydrogen as well as in the capacity building program
- The surplus of the production can be reinjected in the production of hydrogen.



Mr. Uwe Remme
IEA

Dr. Remme spoke on Recent Trends in Hydrogen and its role in the transition to clean energy. Thus, he established that:

- Hydrogen is an essential pillar of the "zero emission" objective in the energy system explaining that its demand will increase to reach 130Mt in 2030

- Ambitious policies are needed for hydrogen to play its part in meeting governments' climate commitments

- Hydrogen demand will increase fivefold by 2050, expanding beyond refineries and the chemical industry to new uses in long-distance transportation, power generation and steelmaking.

- Low-emission hydrogen could reach 16 to 24 Mt per year by 2030

- In 2050, hydrogen production in NZE is almost entirely based on low-emission technologies, with electrolyzers accounting for about 70% of global production, and natural gas combined with CCUS accounting for nearly 30%

Several hydrogen projects based on renewable energy are already underway. Africa has the potential to produce 5,000 megatons of hydrogen at less than US\$2 per kilogram, equivalent to the world's current primary energy demand. Low-emission hydrogen exports reach 12 million tons by 2030 based on projects under development

Africa can be a major player in the field of hydrogen produced from renewable energy sources.



Mr. Thomas Opperer
European Union

Mr. Thomas Opperer, said that hydrogen is essential in the discussions around energy and that it is relevant for the energy transition in particular for :

- The security of energy accessibility
- Price stability

He indicated that hydrogen is used in areas other than the sectors and activities mentioned by the other panelists, notably the cement industry and the food sector, with 75 million tons, which are major consumers of hydrogen.

Green hydrogen fits perfectly with the global agenda for decarbonization efforts.

The importance of the by-products generated alongside hydrogen production, notably ammonia, which is traded at between USD 1,300 and 1,400/ton and is used as the basis for the production of fertilizers for agriculture.

Producing hydrogen is a conversion operation, not an extraction operation with a positive social impact in the creation of jobs and value chains

Producing hydrogen ensures sustainability by providing energy and protecting water and soil.

Hydrogen production creates a win-win situation.