



## 1st African Hydrogen Partnership (AHP) Conference

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### The AHP Preparation Meeting

#### Minutes of Meeting

Location:

UN Conference Centre in Addis Ababa, Ethiopia

Date:

19th and 20th February 2020

Participants:

Over 40 delegates of private, public and administrative bodies from Africa, Europe and Asia attended the conference.

Authors:

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**Purpose of the AHP Preparation Meeting:**

The main objectives of the meeting were to

1. discuss and agree on the major input parameters for formally establishing the AHP Trade Association
2. discuss major aspects for starting hydrogen programmes in Africa
3. expand the network of AHP supporters
4. raise awareness of hydrogen technology with African decision makers.

**Assessment:**

All four objectives have been achieved.

## **1.) AHP Trade Association**

The Association will enable member companies to exchange views and ideas on economic, technical and other relevant social topics, including the treatment of political, general legal and tax issues on a pan-African basis. It will enable them to communicate with the public, governments and administrative bodies with one voice.

The AHP Trade Association (the “Association”) should be formally established in 2020. Participants agreed that the incorporation should be completed by the end of Q2 2020. The Association will be open to African and non-African member companies. The Association will be established in Mauritius since Mauritius offers a well established legal system which applies UK law, and has other advantages for conducting business. The official working language of the association will be English. Other languages could be added later.

Different types of membership and voting rights will be applied. The Chairman of the Association’s Supervisory Committee or Board should be of African nationality and reside in Africa. The Senior Executive responsible for managing the daily affairs and activities of the Association does not have to be of African nationality but they should reside in Africa. The Operational Headquarters should be in Africa. Offices in Europe and Asia could be opened in the future. Vincent Oldenbroek, co-founder of the AHP initiative who resides in Zimbabwe, has been proposed to become the first Chief Executive.

Siegfried Huegemann will transfer all rights and ownership related rights, including IT infrastructure, trademark, logos and designs (“corporate identity”), contact lists, etc. to the Association. The Association will reimburse Siegfried Huegemann for the expenses.

## **2.) Topics**

A summary of key topics discussed during the conference follows:

### **a) The African factor**

Green hydrogen technology is currently the only feasible energy system for replacing fossil fuels on a large scale quickly.

In many regions of the African continent, renewable electricity could be produced for less than US\$ 20/MWh. Considering the cost of electricity alone, one kg of green hydrogen could be produced for US\$ 0.9 or less. Africa offers vast non-agricultural lands for setting up large-scale renewable electricity farms, combined with facilities for the production of green hydrogen. This, alongside sufficient regulatory flexibility, will allow us to kick-start large scale programmes. The conference agreed that Africa offers a “Green Field for Green Hydrogen Deals”. Additionally, since the import of fossil fuels is a significant economic burden for most African nations, domestic value creation chains for producing green hydrogen based fuels are an exceptionally attractive economic proposition for most African governments. This should help expedite the change from polluting oil to clean hydrogen.

Utilizing the potential for producing green hydrogen in Africa is of vital importance for decarbonizing economies globally.

#### **b) Export of Green Hydrogen and other hydrogen-derived chemicals**

African economies could greatly benefit from exporting green hydrogen and hydrogen-derived chemicals (such as ammonia, methanol and other liquid organic hydrogen carriers) to non-African nations. For example, natural gas pipelines between Europe and North Africa could be re-used for exporting low cost green hydrogen produced from solar and wind electricity. Eastern and Southern African nations could export hydrogen by sea to Asian countries such as Singapore, Japan, Korea and China. Japan has clear cost targets for imported hydrogen (\$3/kg by 2030 and \$2/kg by 2050) which can only be achieved by using resources from Africa or similar regions.

#### **c) Access to energy (electricity)**

More than 500 million Africans still lack access to electricity and clean cooking fuels today. Due to rapid population growth in Africa, it is unlikely that this number can be quickly reduced without new approaches.

Synergies between hydrogen export, hydrogen production for transport fuels and access to clean electricity and cooking fuels are possible today, and should be pursued for the benefit of remote communities. For example, hydrogen production in remote areas for mining transportation vehicles or for hydrogen fuelling stations could simultaneously provide reliable 24/7 access to clean electricity and clean cooking fuel to remote communities. Hydrogen for cooking has no effects on air quality as its combustion only produces water. Also, hydrogen fuel cell powered vehicles (2-wheelers, 3-wheelers, cars, (mini)-buses and trucks) can produce electricity when parked, and can provide reliable clean electricity in remote areas and for homes during the night.

#### **d) Leapfrogging to hydrogen economies**

African economies and populations are some of the fastest growing in the world. As Africa's infrastructure needs to be expanded, there is the unique opportunity to leapfrog over carbon intensive applications and build up a zero emission infrastructure. Currently, Africa produces less than 3% of global annual carbon dioxide emissions. This "green field" uniquely allows us to fast-forward to new sustainable economies based on green, renewable hydrogen.

Replacing costly imports of refined fossil fuels (including diesel and petrol) and chemicals (such as ammonia for fertilizer) supports domestic value creation chains for producing green fuel locally. At the same time, this will improve trade balances and significantly strengthen national African economies.

Using financial innovations, like Green African Hydrogen Bonds, could provide funds for financing long-term programmes and give access to international capital markets as well as direct foreign investment.

Africa can step up directly to green hydrogen economies and derive substantial economic, environmental and social benefits.

### **e) Preparing for regulatory changes**

Globally, new regulations for reducing carbon dioxide emission are increasing rapidly. Private, public and administrative bodies will have to comply with very strict rules which might undermine their competitiveness if they do not act early enough.

For example, the shipping industry is shifting towards green ammonia or hydrogen as a replacement for marine fuel oil and diesel. Producers and distributors of consumer goods and beverages are already gaining experience around the world in using zero emission hydrogen fuel cell trucks and vans. Due to global regulations and self-imposed targets, the global industry will need these clean fuels and infrastructure to be available in Africa.

### **f) Large African metropolitan regions - “Hydrogen Landing Zones” and “Hydrogen Corridors”**

The Association plans to focus primarily on coastal regions with large metropolitan areas and harbours, including, but not limited to:

South Africa (Durban Port), Tanzania (Dar es Salaam), Djibouti (Djibouti), Nigeria (Lagos), Egypt (Cairo), Morocco (Casablanca)

These regions would have corridors connecting them to countries including Botswana, Zambia, Zimbabwe, Namibia, DR Congo, Mozambique, Rwanda, Uganda, Kenya, Ethiopia, Ghana and Ivory Coast.

The first large-scale programmes should start with hydrogen fuel cell buses, trucks and lightweight transportation vehicles plus green ammonia production and fuel cell equipment for the transportation, maritime, fertilizer, power and telecom sectors as well as harbours.

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