

Hydrogen

ENABLING A ZERO-EMISSION SOCIETY



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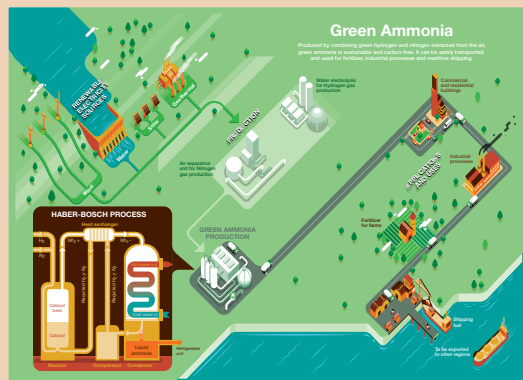
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The East Africa Hydrogen Corridor

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We are getting closer to realising the potential
of green hydrogen in Africa.

The world
cannot
decarbonise
without green
hydrogen from
Africa

01

Introducing the Africa Hydrogen Partnership

The [African Hydrogen Partnership \(AHP\)](#) is the only continent-wide African umbrella non-profit association dedicated to the development of green and natural hydrogen that is sourced in Africa. AHP also

helps advance the development of hydrogen-based chemicals, fuel-cell technologies and hydrogen-related business opportunities in Africa.

Including a broad range of stakeholders, hydrogen associations have emerged around the world to speed up the green hydrogen revolution and make it happen as efficiently as possible. AHP focuses

on promoting green hydrogen in Africa and is committed to sourcing hydrogen produced from water by electrolysis powered by renewable energy. This 'green hydrogen' is clean to produce and to consume, with the only emission being water.

In early 2021, AHP started taking in members and only accepts corporate or institutional members (not

individual members) but accepts members from anywhere in the world. AHP maintains that the world cannot decarbonise without green hydrogen from Africa, and believes that if the countries in Africa that are able to produce green hydrogen at a competitive cost can do so, then they will become significant energy producers which will revolutionise their economies. The realisation is fast gaining traction.

Matching Supply and Demand for Hydrogen

In 2022, the [International Renewable Energy Agency \(IRENA\)](#) published a world map showing the potential of various regions around the world for producing green hydrogen; and Sub-Saharan Africa is shown to have, by some margin, the best potential of all.

Historically, there has been a perception that a gap exists between supply and demand for carbon-free hydrogen, with both sides lacking 'secure volumes' from the other, and that this central problem needs to be overcome before large-scale commercialisation of green hydrogen can get underway. But the real issue is that the commercialisation of low carbon hydrogen will not be possible until green hydrogen can be sold at a competitive price (in relation to fossil fuels) and once this happens then the 'chicken-and-egg' impasse will disappear.

Once green hydrogen can be sold at a competitive price, supply and demand of the market will develop automatically. In the first instance, we will see this happen where green hydrogen can be provided at the right price for domestic consumption in Africa. At a later date, this will happen in relation to green hydrogen produced for export as well. Whether green hydrogen can be provided at a competitive price depends on where the green hydrogen is going to be consumed: broadly speaking, whether that price is equal to or less than the price at which fossil fuels are sold in the same place, while considering the cost of transportation.

Although it may not make economic sense to export large amounts of green hydrogen to Europe in 2022 (even assuming that the necessary infrastructure had been created) there are a number of scenarios where green hydrogen can be produced profitably and delivered in Africa for domestic consumption. For instance, in many parts of Africa green fertiliser locally produced from green hydrogen will be



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significantly cheaper than imported grey fertiliser made from natural gas. This is principally because of the high cost of natural gas and the high cost of transportation internationally and within Africa.

Making fertiliser more sustainable

Some of the best agricultural land in the world is in Africa but it is not as productive as it could be. Some of this is political, but it is also because the land is simply under-fertilised. As a continent, Africa is shockingly under-fertilised, in comparison to other parts of the world. For instance, the fertiliser per hectare of cropland in Africa is five times less than the global average. And because the inherent demand for fertiliser is already there, fertiliser plants in those parts of Africa should be capable of being financed and built today.

01 Tsavo East National Park Kenya, Kenya.
Source: Damian Patkowski / Unsplash

02 Boy playing 'cat's cradle'. Uganda.
Source: Alex Radelich / Unsplash

03 Maasai Mara, Kenya.
Source: Pop & Zebra / Unsplash

As a continent, Africa is shockingly under-fertilised, in comparison to almost all of the rest of the world.

Technical Potential for Producing Green Hydrogen

