

H2Brazil

Contextualization

The share of renewable energies in Brazil's energy matrix has been increasing in the last years: 46.1% of the Domestic Energy Supply in 2019 to 48.4% in 2020. The trend is that this number is expected to grow at the same time as production costs go down.

This positive scenario makes Brazil a promising country in the production of Green Hydrogen, both given its natural and climatic conditions, as well as its geography and low prices of renewable energy.

Green Hydrogen is produced through electrolysis from electricity and renewable sources, i.e. with zero emissions, and is therefore an important element of Vision 100, the complete decarbonization of energy production. In the future, Green Hydrogen will contribute to mitigating the effects of climate change and help achieve the goals of the Paris Agreement.

Currently, industry is the main hydrogen consuming source in the world - it mostly uses hydrogen produced from fossil fuels, emitting millions of tons of CO₂ per year into the atmosphere.

The Green Hydrogen produced in Brazil could be used in the transportation sector, where battery solutions are not expected to be an option in the future: aircraft, ships, long distance trucks, and heavy vehicles, such as those used in mining. It could also be used in the chemical industry, in oil and petroleum refineries, in the food industry (hydrogenation of fats), in metallurgy, and in cement and steel production. In addition, the Brazilian port infrastructure and logistics favor the export of Green Hydrogen, which could make the country a major exporter of the product.

Goal

Legal, institutional and technological conditions for the development of a green hydrogen market in Brazil have been improved.

Approach

The H2Brasil project aims to improve legal, institutional and technological conditions for the development of a Green Hydrogen market in the country. To that end, up to 34 million euros are

Title	H2Brazil
On behalf of	German Federal Ministry for Economic Cooperation and Development (BMZ)
Country	Brazil
Execution partners	MME, EPE, ANEEL, ONS, EPE, SENAI, AHK, companies, Brazilian and German universities across the country
Overall Term	2021— 2023
Investment	€ 34 million

allocated in five Outputs, called: framework conditions, dissemination, professional training, innovation and market expansion.

To improve the structuring conditions for the development of the Green Hydrogen market in Brazil, the project will elaborate energy planning scenarios, point out needs in the current regulatory framework, and analyze the implementation of an Green Hydrogen certification system in the country.

Through communication and information dissemination studies, actions and campaigns about the importance of Green Hydrogen production in Brazil will be carried out. In addition, H2Brasil will promote exchange of knowledge and experiences with key influencers.

The activities related to Professional Training encourages the development of educational content, the implementation of laboratories with infrastructure for learning, and professional training actions in Green Hydrogen technologies through the training of multipliers - with the perspective of gender inclusion.

H2Brasil also supports the development of innovative technologies for the production of Green Hydrogen and its PtX derivatives. Thus, it supports Brazilian universities through various activities, such as the installation of laboratories or exchanges with German research institutions and universities. In addition, innovation competitions are



Left picture: Photovoltaic plant.

Right picture: Wind farm.

planned in the area of Green Hydrogen involving research centers, enthusiasts and startups.

Finally, H2Brasil works to evaluate and support the improvement of the economic viability of the industrial application of Green Hydrogen in Brazil. Several actions are foreseen, such as the development of financing instruments to leverage the Brazilian Green Hydrogen market and the implementation of an application cluster for pilot projects along the H₂/PtX value chain that will be equipped with an electrolysis plant.

The MME is the political partner of the project, which also has the EPE, ANEEL, ONS, ANP, SENAI, companies, universities throughout the country and the Brazil-Germany Chamber of Commerce and Industry (AHK) as implementing partners.

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