What is the future of green hydrogen in Latin America?

Green hydrogen is a key element in transforming the global energy landscape. In Latin America, a territory that has abundant natural resources, many countries are implementing development strategies and planning for large infrastructures.

Hydrogen produced in a renewable manner has the potential to become a fundamental agent of the global energy transition. As Javier Brey, President of the Spanish Hydrogen Association explains, its versatility makes it a solution for strategic and historically polluting sectors, such as transportation, large industry or construction. While **developing globally,** there are regions with a long way from their full potential, such as **Latin America,** with unbeatable natural resources and a rich renewable matrix that would be able to support the generation of green hydrogen, as economic growth necessarily must go in parallel. In fact, the region's largest wind project–onshore–being built in Magallanes (Chile)–is primarily intended for H_2 production. While not yet commercially produced, both governments and industry professionals are committed to driving this vector forward on the continent and, on its path to consolidation in this industry, **the region already has 13 operational projects and more than 70 under development.**

The countries leading this transformation today are **Chile, Colombia and Brazil,** although also contributing significantly to this evolution are many others such as Argentina, Uruguay and Costa Rica. According to a report published by H2LAC–a collaborative platform aimed at driving the development of green hydrogen and its derivatives in Latin America and the Caribbean with the support of institutions such as the World Bank or the ECLAC–shared efforts and the pre-existing conditions are enabling them to achieve "very competitive production costs and a growing political will that has been incorporating H_2 as one of the most viable energy sources in the region."

Regional drive

During the second Latin American Hydrogen Congress, held at the end of 2022 in Cartagena de Indias, the Inter-American Development Bank emphasized the positive impact that strengthening of the industry would have on the region, both in economic and social terms, as it could supply energy markets in North America, Europe or Asia. According to a recent report from Global Energy Monitor, a non-governmental organization that analyzes renewable energy projects, **the export of H_2 has a very significant potential benefit** and its production has already "become a motivating factor in economic terms for Latin American wind development" and "green hydrogen agreements, such as those that Chile signed with ports in the European Union, are a way to ensure that Latin America is able to secure a share of this growing market."

Apart from commercial networks and renewable spaces already being structured around this

industry, green hydrogen requires a regulatory framework that ensures **stable growth in production**. In this regard, H2LAC has published some of the institutional **advances** that had been achieved as of 2022:

In Colombia, green hydrogen is defined as an unconventional source of renewable energy and production projects would attract tax benefits.
In Costa Rica, policies have been approved for the use of surplus resources in the National Electricity System for the development of an H2V economy, and there already is a green transportation incentive law on the statute books.
In Argentina, a bill for the promotion of low-emission hydrogen has been introduced.
In Brazil, at the 2022 National Energy Policy Council, a national program was signed to develop the hydrogen economy in the region, which is already working on a national roadmap.
Bolivia plans to publish its hydrogen roadmap in 2023, defining supply and expected demand.

Regional challenges

According to the International Energy Agency (IEA), there are **five areas of action** where Latin America can boost green hydrogen production.

Immediate opportunities, which go through the route of decarbonizing existing production. Profuse demand for hydrogen in some countries could be a starting point for “the deployment of low-emission hydrogen” based on the deployment of research and innovation in the field. In addition, the agency stresses that in countries without significant production, pilot projects could be implemented.
Investment and financing plans that encourage “specific business models” that contribute to infrastructure creation. In this regard, private investment and government direction is critical, as well as final coordination between researchers, entrepreneurs and public institutions.
Technological development and commercial competence are also essential starting points for the long-term establishment of this industry as together they promote pilot projects that subsequently give rise to greater opportunities. They also “create convergence spaces where different actors join forces to develop solutions tailored to the needs and circumstances of the region.”
Regulatory advances establishing standardization, source guarantees and certification programs that represent the “missing strategic link between incentive structures and the emergence of markets or, at the very least, the broader use of hydrogen.”
Regional and international collaboration that ensures that hydrogen does not develop in isolation within the region or disconnected from global advances, as this would imply the stagnation of its technological

development and its internationalization. “Latin American energy systems are currently interconnected rather than integrated, and interconnected infrastructures tend to have low utilization rates, especially in South America.”

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