

 NEWS

# Why the world is taking note of Colombia's hydrogen revolution

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Onshore Wind

Offshore Wind

Photovoltaic

Wind

Green Hydrog...



Colombia has become one of Latin America's clean hydrogen pioneers as it reaps the benefits of a clear government growth plan, incentives for investors, optimal conditions for renewable energy generation and port access to two oceans. Here is a snapshot of the latest developments in Colombia's green and blue hydrogen buildout.

## ROADMAP

Colombia's mines and energy ministry unveiled its long-term blueprint for clean hydrogen last year, outlining plans for up to 3GW of electrolysis capacity by 2030 and envisaging wide-scale adoption of fuel-cell vehicles.

In addition to citing the vast potential for green hydrogen production from renewables – via water electrolysis – the roadmap sets a target of 50 kilotons of blue hydrogen capacity derived from natural gas over the same period.

Investments in the segment are seen ranging from US\$2.5bn to US\$5.5bn, while 10,000-15,000 jobs are expected to be created.

## REGULATIONS

In April, the government published a [draft decree](#) outlining regulations for the use and production of hydrogen. The document establishes mechanisms, conditions and incentives aimed at promoting investment in local development, innovation, research, production, storage, transportation and distribution.

It also provides guidelines related to the use of hydrogen for electricity, energy storage and the decarbonization of industries.

Both the energy and environment ministries will be tasked with overseeing taxonomy, certification, conditions for carbon capture, utilization and storage, hydrogen for vehicle use

certification, conditions for carbon capture, utilization and storage, hydrogen for various uses, production of synthetic fuels with hydrogen and derivatives, a value chain information system and a "regulatory sandbox" for hydrogen pilots, according to the decree.

## TAX BREAKS

In early June, the energy ministry signed off on a [slew of tax incentives](#) for clean hydrogen projects. The document states that blue and green hydrogen initiatives will be eligible for the same tax breaks as non-conventional renewable energy developments.

They include income tax deductions for up to 50% of investments, an exemption from value-added tax on equipment and services, and accelerated depreciation.

A resolution outlining criteria related to investments in goods and services and procedures to request additional benefits can be seen [here](#), in Spanish.

## EXPORTS, ALLIANCES

Colombia and Germany this month advanced plans to [jointly develop clean energy initiatives](#) with the goal of turning the South American country into a hydrogen export hub.

Public and private entities from both countries participated in talks aimed at identifying financing options and fast-tracking production.

"What we want is to have competitive costs by 2030 in the local market and 2050 in the international market so we can generate value chains," Colombian foreign trade minister Germán Umaña said.

A report published by the International Energy Forum (IEF) in June cited Colombia as one of four probable exporters of hydrogen in Latin America, alongside Brazil, Chile and Argentina.

In a separate report, the International Renewable Energy Agency (IRENA) said Colombia had the potential to have the world's fourth lowest green hydrogen price in 2050, bettered only by China, Chile and Morocco.

## FINANCING

The government is [financing feasibility studies for 10 hydrogen projects](#) as part of a wider plan to kickstart investment in the nascent sector.

The developers selected in a competitive bidding process are VATIA, Busscar de Colombia, Energal BioGas, Solenium, H2NOSTRUM, H2 Andes, TE H2, Sociedad De Gestión Grupo TW Solar Colombia and Universidad de Antioquia, according to a mines and energy ministry statement.

The developers will be responsible for delivering pre-investment studies for the green and blue hydrogen value chain, with funding provided by the government's Fenogre renewable energy program.

Support has also been forthcoming from the international banking community.

The World Bank this month approved a [US\\$4bn loan](#) to finance renewable energy capacity

The World Bank this month approved a [US\\$1.1bn loan](#) to finance renewable energy capacity expansions and develop a green hydrogen industry.

And in November, the Inter-American Development Bank (IDB) called for expressions of interest in a consultancy services contract for urea production from green hydrogen.

## **ECOPETROL**

Earlier this month, state oil company **Ecopetrol** outlined plans to invest up to [6.8tn pesos \(US\\$1.4bn\)](#) in renewable power, hydrogen and energy efficiency projects next year.

The figure forms part of a 25.3tn to 29.8tn-peso 2023 organic investment plan.

In July, **Ecopetrol** and Toyota signed a three-year deal to carry out mobility tests on vehicles that run on green hydrogen.

And in May, France's Total Eren, Germany's Siemens Energy and Japanese group Mitsui were among six companies selected by **Ecopetrol** to jointly develop clean hydrogen projects in the country. Spanish company H2B2, UK-based Empati and French utility EDF were also chosen "as strategic allies" for Colombia's proposed hydrogen buildout.

**Ecopetrol** this year began producing 20kg/d of green hydrogen from a 50kW electrolyzer plant at its Cartagena refinery.

## **PROMIGAS**

Also in May, local gas transporter Promigas and Japan's Sumitomo signed an agreement to [jointly invest in hydrogen mobility](#). In the first phase, the alliance will focus on studies to determine opportunities and challenges for the production, distribution and sale of hydrogen for electric vehicles in Colombia and Peru.

"This agreement ... seeks to identify market segments and companies in the region for the implementation of commercial pilots for electric mobility with hydrogen, an energy source that is increasingly relevant in the global economy due to its potential to reduce CO2 emissions from the transport sector," Promigas president Juan Manuel Rojas said.

Earlier this year, Promigas announced the start of a pilot project to combine hydrogen with gas in its pipeline network.

## **GEB**

Grupo Energía Bogotá (GEB) is another company to make a foray into the hydrogen segment. In September, [CEO Juan Ricardo Ortega met with German officials](#) and business leaders to exchange knowledge and discuss future cooperation.

And earlier this month, GEB [signed a memorandum of understanding](#) with **Ecopetrol**, Promigas and the energy ministry to jointly work on sustainability projects, including hydrogen.

"The entities will work together to strengthen scientific exchange to mitigate the technical

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Ecopetrol announces the constitution of a new subsidiary that will be part of its Business Group



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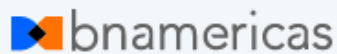
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