

Green hydrogen: Argentina's new market potential and applicable legislation

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The importance of green hydrogen comes from the goal of decarbonisation of the planet by 2050 by the Paris Agreement which, in its Article 4, invites "all Parties to strive to formulate and communicate long-term strategies for low greenhouse gas emission development, taking into account their common but differentiated responsibilities and respective capabilities".

Hydrogen is the most abundant and lightest element on earth, is not found free in nature and must be separated from its associated chemical elements by electrolysis. If this process is carried out with energy from renewable sources, then it is considered Green Hydrogen. Thus, for example, the hydrogen contained in water (H₂O) can be separated through this process. Moreover, it is sustainable, storable, versatile and transportable.

This element is responsible for a total of 2% of the planet's CO₂

emissions and its decarbonisation brings us closer to this goal.

I. LEGISLATION IN ARGENTINA

There is a common intrigue surrounding green hydrogen in the legal sphere: What regulations govern it? What is the applicable legislation?

Law 27.520 establishes minimum budgets on climate change adaptation and mitigation. In addition, the country has committed to reducing carbon dioxide emissions by 25.7%. Let us remember that no carbon dioxide is emitted to produce green hydrogen and that Argentina is a member of the International Renewable Energy Agency.

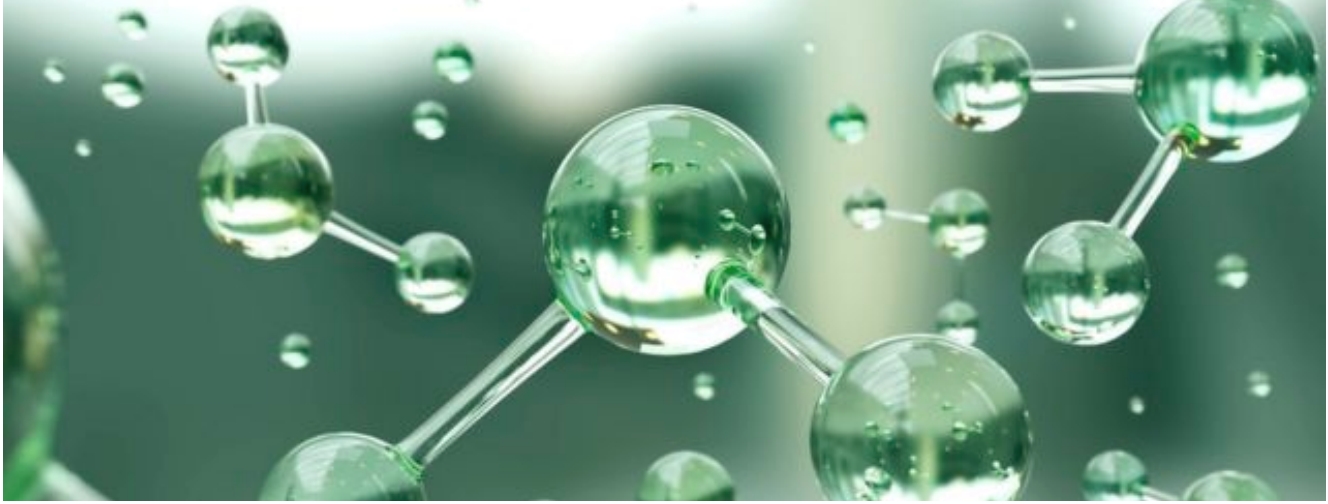
At present, there is no specific regulation on the production of green hydrogen, but we will briefly detail the regulations and similar general procedures that regulate this type of industry.



1. Environmental Impact Statement. An environmental impact statement must be issued by the competent environmental authority of the province, preceded by a public audience, where the citizens of the region may issue their respective statements.

2. If a company contemplates joining the national electricity supply, it must apply to become an agent of the Wholesale Electricity Market, for which it must comply with Annex 17 of the Procedures: "Ingreso De Nuevos Agentes Al Mercado Eléctrico Mayorista" and Annex I regarding technical requirements.

3. The generation of renewable energy using renewable sources is regulated by Law 27.191 which provides that by the year 2025 a contribution of



renewable energy sources of 20% of the national electricity consumption must be reached.

4. It is clear that the implementation of a green hydrogen production industry requires the granting of permits for the discharge of liquid effluents, the discharge of gaseous emissions and registration as a generator of hazardous waste, in order to carry out production and separation operations.

5. It is necessary to have the authorizations concerning interjurisdictional transport issued by the National Transport Regulatory Commission, and it is also necessary to have an environmental insurance policy.

6. The company must be registered as a chemical precursor with the Secretariat of Integral Policies on Drugs of Argentina (SEDRONAR) and as an importing agent to obtain all

the materials necessary for production and also as an exporter if it intends to export the hydrogen produced.

II. MARKET POTENTIAL IN ARGENTINA

The industrialisation of green hydrogen puts Argentina in the spotlight. Our country has an abundance of two fundamental requirements to produce this type of energy: sun and wind.

In the words of the H2ar Consortium, a collaborative workspace for companies to innovate and promote the development of the hydrogen economy in the country, Argentina has a historic opportunity driven by the acceleration of the global energy transition, to consolidate an export platform of scale in low-carbon energy.

The Consortium presented the report on scenarios for the next decade conducted under the leadership of the Y-Tec group

and assures that the country has competitive costs and sufficient power to produce clean hydrogen in a dual manner. Moreover, according to figures recorded in the report, it is currently possible to achieve a levelised cost of clean H2 from natural gas reforming with CO2 capture and storage of 1.4 to 1.8 US\$/kg in the country, considering natural gas prices between 3 and 5 US\$/MMBTU. Meanwhile, it is expected that clean hydrogen produced by renewable electrolysis of water could be between US\$1.5/1.6/kg by 2030.

Rystad Energy says that if production can be increased to 10 million tonnes by 2030 over the next decade and costs are reduced to \$1.5/kg or less, then the industry will become a permanent fixture in the global energy mix. This coincides with the production costs detailed in the H2ar Consortium report, placing Argentina as a potential investment focus.



So much so that the president of the company Energía Argentina (Enarsa), Agustín Gerez, signed an agreement to supply green hydrogen to the Port of Rotterdam, the most important port in Europe, where a large-scale supply centre is being built that will supply the old continent with 4.6 million tonnes per year by 2030.

Also the governor of Tierra del Fuego, Antarctica and South Atlantic Islands, Gustavo Melella, announced after a meeting with representatives of the company MMEX Resources Corp, that the company presented an investment project for more than 500 million dollars to generate green energy in the province. They will install a wind farm in the north of the province and an electrolysis plant that will generate 55

tonnes of hydrogen per day.

On the global scene, the United States has announced an investment of \$9.5 billion and will allocate \$8 billion to create regional green hydrogen plants, and in the European Union cumulative investments in renewable hydrogen could reach between 180 billion and 470 billion euros by 2050.

The altered global context is bringing with it an energy crisis for some European countries that used to source gas and energy from Russia, given the economic sanctions that have affected bilateral relations. Thus, during Alberto Fernández's last visit to Germany, the possibility of supplying green gas and hydrogen from Argentine sources to the country governed by Frank-Walter Steinmeier was raised.

That is why the Minister of Productive Development, Matías Kulfas, participated in the Global Assembly and Exhibition of Green Hydrogen that took place in Barcelona last May, where he shared the hydrogen strategy 2022-2050, as well as the opportunities presented by our country to position itself as a leader in the production of green energy.

The demand for renewable energies and, above all, for green hydrogen throughout the world has brought a market that was not so visible to the eyes of investors. Argentina is in a key and very favourable position to receive investments from the energy sector and position itself as a key supplier of this resource.

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