CÁMARA
CHILENO BRITÁNICA
DE COMERCIO

Doing Business in Chile
Guide 2025

GREEN HYDROGEN

Executive Summary

In recent years Chile has experienced a revolution in its energy sector. This is clearly demonstrated by the rapid growth and successful incorporation of renewables over the past decade. This makes a great launch pad to push ahead with the inclusion of Green Hydrogen within the matrix to help deliver the country's' goal of becoming carbon neutral by 2050.

In 2020 Chile developed a National Green Hydrogen Strategy to create a road map for setting and achieving its objectives, which has been ratified and reinforced by successive governments. Chile has also been implementing actions to create a modern regulatory framework, and the appropriate incentives to promote the development of the industry. The plan includes growing sufficient supply capacity for domestic use, and to become a relevant producer in the global marketplace.

GREEN HYDROGEN PROJECTS IN CHILE

Chile's Energy Ministry goal to becomes carbon-neutral by 2050 is enshrined in Law No. 21,455, effective in June 2022, known as the Climate Change Framework Law[1].

As an important part of the strategy to achieve this goal, Chile plans to create capacity to produce significant volumes of green hydrogen to replace fossil fuels.

In 2020 the government released its "National Green Hydrogen Strategy"[2], as a first regulatory milestone. It sets objectives such as:

- **(i)** to have an equivalent of 5 GW electrolysis capacity either constructed or under development.
- **(ii)** to be the most competitive global green hydrogen producer by 2030.
- **(iii)** to be one of the top three major exporters of green hydrogen by 2040.

These objectives were reinforced in the "2022 – 2026 Energy Agenda"[3] published by the Energy ministry in August 2022.

According to the Chilean Energy ministry, the energy sector is responsible for 78% of the country's CO_2 emissions. Therefore, innovation in this sector is crucial for addressing the challenge of reducing emissions. Additionally, the Ministry estimates that Chile has the potential to increase its renewable energy capacity by 70 times the current level. Given that Chile is a relatively small energy market, green hydrogen presents a significant opportunity to export the excess renewable energy that the country can produce but may not consume domestically.

Chile has two major hubs for green hydrogen development. The first is in the North, where the Energy ministry has identified over 300,000 hectares available for green hydrogen projects, benefiting from exceptional solar radiation. The mining sector, located in the region, could serve as a key off-taker. The second hub is in the South, where over 380,000 hectares have been designated for green hydrogen production, capitalizing on excellent wind conditions and existing infrastructure.

Both the Energy Ministry and the Public Land Ministry have signed agreements to facilitate these projects. Public land is to be made available for renewable energy and green hydrogen development.

Additionally, Chile has begun to see the emergence of green hydrogen projects aimed at domestic consumption in key industries such as mining, ports, distribution centres, and others.

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1 Ley-21455_13-JUN-2022.pdf

2 https://energia.gob.cl/sites/default/files/estrategia_nacional_de_hidrogeno_verde_-_chile.pdf

3 agenda_energia_2022_-_2026.pdf

As part of the Green Hydrogen National Strategy, the Energy ministry identified certain objectives to promote the green hydrogen industry. A first objective was to develop a regulatory framework for the green hydrogen industry. Previously there was no specific regulation regarding the use of hydrogen as a fuel, or about the facilities that are required to produce, store, transport and dispense hydrogen.

Law No. 21,305 relating to Energy Efficiency was published in the Official Gazette on February 13, 2021. This law grants the Energy ministry the powers to enact the needed regulation, and recognises hydrogen as a fuel, including its derivatives. Since its enactment, the ministry has been working to prepare and improve the regulatory framework, including safety and quality standards.

To enable Chile to become an important player in the global hydrogen marketplace, and to capitalise on its significant resources, it has already signed Memorandums of Understanding with the most important ports of the world, such as, Hamburg, Rotterdam and Antwerp.

GREEN HYDROGEN REGULATORY FRAMEWORK

(i) Public Policies.

To achieve the objectives highlighted in the National Green Hydrogen Strategy, Chile has enacted several public policies, which are summarized in the following chart:

- Green Hydrogen National Strategy (November 2020)
- Long Term Energy Planning (2023-2027)
- 2022 – 2026 Energy Agenda (August 2022)
- Green Hydrogen Action Plan (2023-2030)

These public policies are soft laws that have served for setting a roadmap with clear steps and priorities for the development of the industry. They include the preparation and enactment of the proper legal and regulatory framework, the generation of strategic partnerships and alliances, and the implementation of financing mechanisms to foster pilot projects, among others.

(ii) Hydrogen Facilities Safety Regulation.

A key milestone in the implementation of a modern regulatory framework for the industry, the "Hydrogen Facilities Safety Regulation" was finally enacted in June 2024. This regulation sets forth the minimum safety requirements for all stages of hydrogen installations intended for use as energy resources. It also establishes the obligations and responsibilities of the individuals and entities involved in these activities, whether they are owners or operators. The primary goal is to ensure that all activities are conducted in a safe and risk-controlled manner, thereby preventing danger to people or property.

(iii) National and International Technical Standards.

Another key workstream in creating a robust regulatory framework is the development of Technical Standards. In recent years significant progress has been made to regulate the technical aspects of hydrogen fuel quality, storage, and transportation systems, amongst others.

Specific technical standards have also been defined to cover seismic activity, which is especially relevant in Chile. Other regulations cover the transportation of dangerous substances, fire prevention, and the mitigation of various risks during the construction and operation of hydrogen facilities.

Finally, recognizing that the Chilean regulatory framework for green hydrogen projects is still evolving, the authorities are open to adopting and applying several international technical standards for hydrogen facilities.

ADDITIONAL INITIATIVES TO FOSTER GREEN HYDROGEN PROJECT IN CHILE

As indicated in the Introduction, pursuant to the Green Hydrogen National Strategy, Chile has implemented different initiatives to foster the industry. Some of non-regulatory initiatives already implemented are: (i) Strategic Alliances, (ii) the Chilean Development Agency Financing (CORFO) program, and (iii) Public Lands Tender Process.

(i) Strategic Alliances.

In pursuit of its aim of making Chile a key global participant in the production and exportation of green hydrogen, the Government of Chile has entered several International Memorandums of Understandings (MOU's), with relevant countries and strategic partners, such as Singapore (2021), Germany, Port of Rotterdam, Port of Hamburg, Port of Antwerp, among others.

(ii) CORFOs Green Hydrogen Financing Programs.

Another example of Chile's interest in promoting this industry is the role played by CORFO, which in the year 2021, made the "First call for green hydrogen projects in Chile", a financing program oriented to select one or more projects that intends building electrolysers greater than 10 MW and with expected commissioning no later than December 2025. The amount of the financing program was US$50,000,000. After a competitive process, 6 projects were selected by CORFO to receive financing.

(iii) National Plan to Foster Green Hydrogen in Public Lands.

One of the key factors for the development of Green Hydrogen projects is to secure the surface land rights. In this context, the State of Chile has also been active in the implementation of mechanisms to facilitate access to public lands by project developers. By way of example, in March 2022, the National Land Ministry issued the Exempt Resolution No. 998 which approves the "National Plan to Foster the Green Hydrogen Production in Public Lands". The purpose of the plan was to create a centralized system, during a defined period, for interested companies to apply for Onerous Use Concessions ("CUO") to develop green hydrogen projects in public lands.

In addition, the National Land Ministry is constantly calling for International and National Tender Process's to award

CUOs over public lands for the development of energy projects, including green hydrogen projects. In fact, according to the National property ministry statistics, 26.76% of the public lands tendered during the 2018-2022 period were destined to energy projects.

ENVIRONMENTAL ASSESMENT OF GREEN HYDROGEN PROJECTS

(i) Environmental Assessment.

One of the key regulations to consider during the development stage of any green hydrogen project in Chile is Law No. 19,300, the General Environmental Framework Law, with reference to the Environmental Impact Assessment System (SEIA).

Since 1997, details of those projects or activities which qualify must be submitted to the SEIA to obtain an environmental license ("RCA") prior to their execution. The objectives of the SEIA are:

- To ensure that the project complies with the environmental regulations.
- To verify compliance with the environmental sectorial permits required for the project.
- To identify any environmental impacts caused by the project.
- To determine any mitigation or reparation measures necessary to offset the impacts, or any compensation due.

There are two stages involved in defining the approach to be taken by project developers. The first is to carry out an initial analysis to see if the specific project needs SEIA approval or not. If approval is necessary, the second step is to define which assessment instrument will be necessary; either the simpler Environmental Impact Declaration ("DIA"), or the more complex Environmental Impact Study ("EIA").

(ii) Environmental Assessment of Green Hydrogen Projects.

The reality is that most of the Green Hydrogen projects to be developed in Chile will have to be submitted to the SEIA. The exception will be pilot or small-scale projects.

Large-scale green hydrogen projects typically consist of multiple interconnected facilities, such as power plants, electrolysis plants, ammonia production plants, ports, desalination plants, and more.

This complexity poses challenges for the environmental assessment process, as it must balance the need to evaluate all components and impacts of the entire project (in line with the prohibition against project fragmentation) while allowing for the flexible development of each individual facility.

In March 2023 the Chilean Environmental Assessment Service strove to provide guidance in this area by issuing a document

entitled "Evaluation Criteria in the SEIA: Integrated description of projects for the generation of green hydrogen in the SEIA"[4]. This document recognizes the complexity of the different processes and sub processes which form the complete value chain of green hydrogen production. It allows the owners of the different components to evaluate their stages independently.

(iii) Environmental Monitoring.

Law No. 20.417 created the Environmental Superintendency, the institution in charge of overseeing compliance with the environmental laws and regulations for projects from all sectors, including the obligations defined in the specific projects' RCA.

The Superintendency has a wide range of possible sanctions for non-compliance, which can go from written warnings up to revocation of the RCA, in conjunction with fines of up to 10.000 UTA (Unidad Tributaria Anual) which is approximately equivalent to US$9Million. If necessary, it can also force a project to be submitted to the SEIA for environmental authorization.

OTHER RELEVANT PERMITS: MARITIME CONCESSION

If a green hydrogen project includes a port or desalination plant, it will need to obtain additional sectorial permits. Among the most important is the maritime concession required for the construction and operation of facilities located on the coast and in the water. This concession grants the right to use state owned land such as beaches for port facilities, effectively serving as a land title, and used in place of a lease agreement.

Beachfront land, the beach itself, the seabed, and the adjacent waters are assets managed by the Ministry of National Defence and may be granted in concession to individuals or legal entities. Accordingly, any person, company, organization, or public service that wishes to develop a project in these areas must previously have an authorization called a "Maritime Concession". This is granted by the Ministry of National Defense through the Undersecretariat of Armed Forces.

The Ministry of National Defense has exclusive powers to allow the use and enjoyment of areas of fiscal beach land (a strip of up to 80 meters measured from the highest tide line), the beach (between the low and high tide line), the seabed and sections of water.

PROPERTY RIGHTS FOR HYDROGEN PROJECTS

Chilean Property regulation is based on an ownership registration system, which means that the owner of a property will always be the person or entity registered in the appropriate Property Registry ("CBR"). There are CBR's in different regions of the country. Each one manages a Property Registry, a Mortgages and Liens Registry, a Prohibitions Registry, and a Disputes Registry, among others.

4 https://www.sea.gob.cl/sites/default/files/imce/archivos/2023/03/29/DT-Hidrogeno-Verde.pdf

The most relevant legal issues relating to a property, such as purchases and sales, mortgages, prohibitions, and other encumbrances, are covered by contracts. The contracts are held in public deeds signed before a Public Notary and must be registered in the relevant CBR.

Any energy or green hydrogen projects must have the right to use the property where the project is located. This right may be effective by having direct ownership of the property or by having a long-term lease or easement agreement, executed by public deed, duly registered in the appropriate CBR.

In the case of land owned by the State, the Ministry of National Assets will grant an Onerous Use Concession ("CUO") in favor of the project holder so that the latter may use the land for the development of the project. After the authorization is approved, a CUO contract is executed, which should be registered in the appropriate CBR.

Importantly, the project developer may combine different rights to secure the land needed for the facilities of the project (i.e.: Purchase agreement plus lease agreement).