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Chile: Trends & Developments

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Trends and Developments

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Regulation of Glaciers in Chile; New Bills and their Possible Impact on the Mining Industry

Introduction

Mining is the economic engine of Chile. Indeed, Chile is the world's number-one producer of copper, iodine, rhenium and molybdenum. Chile is also the world's number-two producer of lithium, which is forecast to increase in the years ahead. The mining sector accounts for approximately 10% of Chile's GDP.

Most of the mining projects in execution or that intend to be executed in Chile are located in areas close to glaciers; for this reason, the regulation or legal protection of these is very relevant for the industry.

This article will examine the current situation of glaciers in Chile, the existing regulations and the bills in process and the possible impact that these would have on the mining sector.

General Framework

Glacier concept

According to the Glaciology Manual of Chile's Water Directorate (DGA) of 2008, "glaciers are large masses of ice, with or without interstitial water, with well-established limits, originated on land by metamorphism into ice from accumulations of snow (a process called snow synthesis), and they flow slowly". Conversely, in the glossary of the National Ice Snow and Data Centre (NSIDC), the word "glacier" provides a definition that is practical and easy to apply, indicating that a glacier is "Any surface of permanent ice and snow generated on the ground, which is visible for periods of at least two years and of an area equal to or greater to 0.01 square km (one hectare), or any surface of land with superficial evidence of viscous flow, product of a high current or past ice content in the subsoil".

As is evident, there is no single definition of glaciers, due to the complexity and various forms in which they are presented.

Glaciers in Chile and their impact as a result of climate change

The detail of the quantity and surface of glaciers in Chile is established in different official documents, including the "National Glacier Strategy, Fundamentals" (2009), "Glaciers of Chile" (2014) and the "Water Atlas" (2016): all of them published by the *Dirección General de Aguas* (General Water Directorate) (DGA).

According to figures of the DGA, Chile has more than 3,500 inventoried glaciers and a total glacier area that exceeds 23,000 square km, including a significant number of rocky glaciers which are monitored by the Glaciology Unit of the DGA (created in 2008 by the Ministry of Public Works). Taking this into account, Chile is one of the countries with the largest glacial surfaces in the world, representing 3.8% of the world's glacial surface and the largest in the southern hemisphere, with 76% of the glacial surface.

During the last few years, a sustained retreat of most of the glaciers in the world has been observed and Chile does not escape this condition. Indeed, the retreat of some glaciers in Chile in recent years has been significant.

There are emblematic cases, such as the Juncal Sur Glacier, San Rafael, Jorge Montt, which from 1898 to 2011 registered a frontal variation of 19.5 km, and Marinelli, as well as particular events that arose in the O'Higgins and Gray glaciers through large landslides, and a large fracture in the Southern Ice Field. In addition, specialised literature shows that the decline in the central Andes and the Northern Ice Field is due to climate change.

Regulation of Glaciers in Chile

Existing regulation

In this section, the existing and applicable legal regime for glacier protection in Chile will be reviewed. For this, the existence of international treaties on the matter and current local regulations are defined, in particular, regarding environmental assessment procedures when there is a possible impact on glaciers because of economic activities, such as mining.

International treaties: although there are some treaties that indirectly refer to the protection of glaciers - such as the Antarctic Treaty, Washington Convention, the Ramsar Convention and the United Nations Framework Convention on Climate Change - there is no international treaty ratified by Chile of which the specific object is the protection of glaciers.

Local regulation: the Chilean Political Constitution does not expressly mention glaciers in any of its norms, but establishes "The right to live in a pollution-free environment. It is the duty of the State to ensure that this right is not affected and protect the preservation of nature". From this section, it is possible to interpret that there is protection with respect to an environ-

mental component such as glaciers, but the perceived view is that it should be restrictive, since the object of this constitutional guarantee is rightly to "live" in an environment free of contamination and not "per se" the protection of the natural resource, which has been confirmed by jurisprudence of the Constitutional Court and the Supreme Court.

Water Code: the Waters Code (CA), published in the Official Gazette on 29 October 1981, indicates in its General Provisions the scope of its application, specifically in its Articles 1 and 2, dividing waters into land and sea, regulating only the terrestrial waters, which in turn can be underground or superficial, and the latter either currents or stopped.

There is no mention of glaciers in the CA, and the prevailing view is that it is not possible to include them in any of the categories regulated by the Water Code, considering their nature and characteristics. However, from the point of view of their protection, it would be inconvenient to regulate glaciers in the CA, as this normative body established the concession of the rights to use water in addition to granting freedom for its use. In this way, trying to regulate glaciers in the CA would mean unprotecting them, given the object and the spirit of this legal body.

Law No 19,300 on General Bases of the Environment and Regulation of the Environmental Impact Assessment System (LBGMA), published on 9 March 1994, regulates "The right to live in an environment free of contamination, the protection of the environment, the preservation of nature and conservation of environmental heritage". In addition, it contemplates and regulates various environmental management instruments, including the Environmental Impact Assessment System (SEIA), which consists of the procedure in charge of the Environmental Assessment Service (SEA), which, based on an Environmental Impact Study (EIA) or Environmental Impact Statement (DIA), determines if the environmental impact of an activity or project complies with current regulations.

The LBGMA establishes in its Article 8 that "The projects or activities indicated in Article 10 may only be executed or modified after evaluation of their environmental impact, in accordance with the provisions of this law" and Article 10 indicates which are the projects to be activities likely to cause environmental impact, and that must be submitted to the SEIA (which is specified by the SEIA Regulations).

In this regard, Article 3 letter a) of the SEIA Regulation states that "Aqueducts, reservoirs or dams and siphons that must be subject to the authorisation established in Article 294 of the Water Code. Dams, drains, desiccation, dredging, defence or alteration, significant, of bodies or natural water courses including glaciers that are incorporated as such in a Public Inventory in charge of DGA". This activity understands significant changes when it comes to "The execution of works or activities that imply alteration of the characteristics of the glacier".

In this context, it is clear that a project or activity that contemplates these kind of works and causes a significant alteration to glaciers - that is, alters the characteristics of a glacier - must be submitted to the SEIA to the extent that it is incorporated into a Public Inventory managed by the DGA.

However, Article 3 letter p) of the SEIA Regulation contains another typology that includes the possibility of impacts on glaciers, making it mandatory to enter the SEIA for the "Execution of works, programmes or activities in national parks, national reserves, monuments natural reserves, virgin areas, nature sanctuaries, marine parks, marine reserves, urban wetlands or in any other areas placed under official protection, in cases where the respective legislation allows it".

Article 36 of the LGBMA establishes that which will be part of the National Protected Areas System (SNASPE) "The portions of the sea, beach lands, sea beaches, lakes, lagoons, glaciers, reservoirs, streams, swamps and other wetlands, located within its perimeter".

In this context, the SEA Ordinary No 130844/2013 must be taken into account, which standardises the criteria and technical requirements on areas placed under official protection and protected areas for the purposes of the SEIA, placed "protected areas" under official protection, and Article 36 of the LGBMA includes within the protected areas of the SNASPE the glaciers that are within its perimeter. Therefore, if one or more glaciers exists in any of those areas in which a project is intended to be developed, they must be considered "protected areas" by law for purposes of entering the SEIA.

In terms of specific numbers, 86% of glaciers in Chile are included in "protected areas" according to SNASPE (they are part of a National Park, National Monument, or in a Reserve). Therefore, currently, most of the projects that are intended to operate in a glacier area must evaluate their impacts on the SEIA.

Considering this, the principle that governs Chile is that - in the case of interventions for activities located in environmentally sensitive areas or zones such as glaciers - there is a need to assess their environmental impacts, under the prism of a "case-by-case" analysis (which is in accordance with the vast majority of comparative law).

In Chile, a clear and successful example that it is possible to carry out mining activities without affecting the glaciers that

could surround an activity - prior to a complete environmental assessment in the SEIA - is the mining project "Los Bronces Integrado", owned by Anglo American, which has placed special emphasis on the care of glaciers during the construction and operation.

Is it necessary to create a specific regulation for the protection of glaciers?

International experience in countries with a presence of glaciers, such as Norway, Sweden, Austria, France and Canada, is that for many years various activities - such as tourism, hydroelectric generation and mining - have subsisted alongside glaciers without a specific glacier-protection law being necessary, adopting measures to protect the glaciers or the surrounding populations, depending on the merits of each particular case.

In the particular case of Canada, there has always been significant mining activity, especially in peri-glacial areas, and the environmental institutions of that country have approved or rejected projects with glaciers through a case-by-case analysis, establishing strict measures for the care of glaciers but allowing sustainable development.

Otherwise, the only country in the world that has a specific glacier-protection law is Argentina, a country that does not have a strong institutional framework in comparison with the aforementioned countries of the northern hemisphere.

Chile has a strong environmental institutional framework that currently requires an environmental evaluation in the SEIA of activities that cause significant impacts on glaciers, which must be done on a case-by-case basis. However, one view is that the current institutional and regulatory framework can be improved and strengthened, but that it does not imply the creation of a special glacier-protection law.

Argentina's regulatory framework: Argentina is the first and only country in the world that has a specific law in force for the protection of glaciers, called Law No 26,639 Minimum Regime for the Preservation of Glaciers and the Peri-glacial Environment (Law No 26,639).

Article 1 establishes the object of the law, stating that it corresponds to the preservation of glaciers and the peri-glacial environment as "strategic reserves of water resources for human consumption; for agriculture and as water-providers for the recharge of hydrographic basins; for the protection of biodiversity; as a source of scientific information and as a tourist attraction", later emphasising its nature as a public asset.

Article 6 establishes as prohibited activities in glaciers those that "may affect their natural condition or the functions indicated in Article 1" and "those that imply their destruction or transfer or interfere with their advance". It immediately records specific cases of prohibition, consisting of the construction of architectural or infrastructure works, with the exception of those necessary for scientific research and risk prevention, and the installation of industries or development of industrial works or activities.

The sanctions for non-compliance with this law include warnings, fines, suspension or revocation of authorisations and definitive cessation of activity, establishing increases in the case of recidivism. In addition, the fact that if the offender is a legal person, those who are in charge of the direction, administration or management will be jointly and severally liable, which is considered a very sensitive element of this Law.

Law No 26,639 application difficulties in Argentina: Law No 26,639 has had serious application difficulties, since the constitutionality of the norm has been questioned by different entities since 2011, including mining companies and the Province of San Juan, as part of the federal government.

The main arguments were that Law No 26,639 violates the original domain of the provinces and conflicts with the "Mining Integration and Complementation Treaty", violating their acquired rights of exploration and exploitation, prohibiting the development of new activities by subjecting them to new environmental impact studies.

Those legal arguments were dismissed in June 2019 - after eight years of litigation - by the Argentine Supreme Court. Indeed, the Court considered that there was no judicial case and stated that the claimants "had not demonstrated that the system for the preservation of the glaciers established by Congress caused them any kind of damage to their mining rights", concluding that the National Constitution establishes that the protection of the environment is a joint task of the national Government and the provinces, establishing that this legal position "is part of the international consensus approved by the Paris Agreement in 2015, ratified by the Argentine Republic in 2016, on global warming".

Beyond the legal doubts left by this ruling, the Court's decision not only poses a problem for projects currently in operation in Argentina, but will also define the fate of 44 other mining projects that, due to their location, according to a report from the Ministry of the Environment, affect glacial or peri-glacial areas (mainly located in Santa Cruz, Chubut, Mendoza, San Juan, La Rioja and Catamarca provinces). Additionally, according to data from the Argentine Chamber of Mining Entrepreneurs, the sector employs more than 80,000 people and with the law in full

force, possible investments of USD18 billion could be stopped or diluted.

Comment on the New Bill on Glaciers

In Chile, the legislative process for the protection of glaciers has had various initiatives. Since 2005, six projects have been presented, three of them in the Chamber of Deputies and three initiatives by the Senate (among other bills that dealt with the issue indirectly).

Of these bills, the one that made the most progress in its discussion and processing was the 2014 Bill (Bulletin No 9364-12), but it was banned by the Government in June 2018, arguing that the way to protect glaciers it is through the promotion of a strong system of protected areas, and not the specific protection of glaciers.

The New Bill on Glacier Protection (Bulletin No 11.876-12) began its processing in July 2018, is in its first constitutional process, and must be voted by the Senate Mining and Energy Commission (voting has already been suspended on different occasions for different reasons).

The Bill – which replicates, in practically everything, the Argentine Law No 26,639 - states that law "aims to protect glaciers, peri-glacial environment and permafrost in order to preserve and conserve them as strategic reserves of water resources, as water-providers for the recharge of hydrographic basins, for the protection of biodiversity, as a source of scientific information and for sustainable tourism". It also delivers a series of definitions and recognises the legal nature of national assets for public use that, due to their environmental value and function, are protected for conservation purposes.

The Bill defines "glacier" as "any stable or slowly flowing perennial ice mass, with or without interstitial water, formed by the recrystallisation of snow, located in different ecosystems, whatever their shape, size and state of conservation. The rocky detrital material and the internal and superficial water courses are a constituent part of each glacier (...)". It also defines "periglacial environment" as the "high mountain area with frozen soils that acts as a water resource regulator. In the middle and low mountains to the area that functions as a regulator of water resources with soils saturated in ice (...)", and "permafrost" as a "type of soil or rock with a permanently frozen fraction, with ice and organic matter, including dry-frozen soil and wet-frozen soil that remains below 0 ° C for two or more consecutive years (...)".

At the same time, it establishes a list of prohibited activities on glaciers - including exploration and exploitation mining activities - that imply their destruction or transfer or interfere with their advance, determining penalties of minor imprisonment and fines of up to USD65,000.

In conclusion, the most complex things regulated by the Bill are:

- the definitions of glacier, peri-glacial environment and permafrost are too broad and implies that it covers very large geographic areas generating a lack of clarity for investors and project-owners when the design process of a project is carried out;
- it includes a transitory norm that establishes that "activities, of any nature, which affect or may affect glaciers at the time of the validity of this law must cease and require authorisations from the competent authorities that proceed according to the law".

Both are elements that could represent in the future problems of normative application and even of constitutionality of the norm, as in the Argentine case.

Final Comments

Recent studies published by the Chilean Copper Commission (COCHILCO) indicate that, if the New Bill on Glacier Protection succeeds, a 2.4% drop in GDP and the lost of 42,000 jobs is estimated, strongly affecting the mining industry, forcing it to stop at least five major operations. This, at the mining production level, would entail a reduction that ranges between 22% and 28% in the next decade.

The prevailing view is that this New Bill, instead of seeking a sustainable development approach that allows the harmonising of all the interests involved, establishes an absolute and ex ante prohibition to developing all kinds of investment projects and activities -not only for miners- in areas close to glaciers.

In addition, there is a conceptual ambiguity that generates uncertainty in different sectors of the economy - mainly the mining sector - and even, in the words of Chilean glaciologist Pablo Wainstein, that the legislative proposal is not operationally applicable in its current form since the project "has an error, which is to mix something that can be identified spatially [the glaciers] with what you cannot spatially identify [the permafrost]", and not being able to trace the limits spatially of where activity can and where it cannot take place, a serious operating error of the standard is generated.

Regarding the efforts that other countries are making in this matter, it should be noted that only one country in the world has specific legislation for the protection of glaciers (Argentina) and it has shown many problems in its application and has prompted constitutional questions, even from provincial governments.

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The vast majority of developed countries -including Canada, Switzerland, Norway, and Sweden - have chosen to analyse projects on a case-by-case basis. The belief is that the way to protect glaciers harmoniously in accordance with "sustainable development" is to strengthen the environmental assessment of projects that could affect glaciers.

In Chile, the SEIA is a sufficient and adequate tool to achieve the protection of glaciers in their entirety, by virtue of the specific case, taking into account the characteristics of the type of glacier in question, as well as the circumstances of its environment, through a case-by-case analysis. However, it is a perfectible system; the following improvements are proposed: (i) strengthening the SEIA with a new sectoral environmental permit (PAS) that allows glacier protection coverage, with respect to projects that do not enter the SEIA or that enter through an DIA or EIA, and (ii) strengthening the SEA, as an administrative body, from a technical point of view, eliminating or limiting the political components that exist today.

Today, 86% of glaciers in Chile are included in protected areas, according to SNASPE. Therefore, the reality is that most projects that intend to operate on a glacier area must assess their impacts on the SEIA. It is believed that this percentage could be even higher and would thus have a more solid institutional framework that regulates protected areas.

It has been suggested that evaluating the possibility of creating a new public body with a legal hierarchy, which is autonomous, and attached to the Ministry of the Environment, for the study and monitoring of glaciers.

After years of progress and transversal efforts, Chile has an environmental institutional framework that, although it can always be improved, is adequate to carry out good management and management of environmental protection. Therefore, the belief is that what Chile needs is to improve current laws, not process parallel and inorganic laws that weaken the existing institutional environment framework, like the Bill.

It will be necessary to pay attention to the development and result of this Bill, which in complex times - from the economic and social point of view - such as the ones Chile is currently experiencing, goes unnoticed, but the reality is that its eventual approval - in the terms in which is conceived today - will have a very strong effect on the Chilean economy and on the development of its main activities, such as mining.

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