
A GIANT IN
ITS FIELD
CODELCO

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Corporación Nacional del Cobre de Chile, more commonly known by its acronym, CODELCO, began life in 1976 following a law, passed five years previously, that allowed the government to nationalise the copper industry, transferring all copper deposits and production to the Chilean state.

After decades of strong growth and expansion, CODELCO is today recognised as the biggest copper producting company, to the extent that its vast copper reserves – established to be 20% of the planet's total reserves – yielded 11% of all copper produced last year. In addition to this, CODELCO is also a well-regarded producer of gold and silver, which is also an important area of business

CODELCO operates out of its headquarters in the country's capital city of Santiago, one of the largest cities in the Americas. Their mining operations span half the country from Rodomiro Tomic, an open pit mine situated 3000 meters above sea level in the Andes mountains, in Chile's Antofagasta region, to El Teniente, known also as the Lieutenant which is home to the world's largest underground deposit of copper - around 15.2 million tonnes of fine copper as well as reserves - close to the city of Rancagua in the Machali region.

CODELCO's near 18,000 employees are spread across four primary departments; each responsible for a separate aspect of the company's operations (Research, exploration, acquisition and development), and seven mining divisions extending across the country, located mainly in the northern lands of the Atacama Desert and Andes mountain range.

Although CODELCO is engaged in several mining operations outside of Chile, it is on home turf where they have achieved real success and where the vast bulk of their assets and capital are located.

Mining in Chile:

It is a well-established fact that the mining industry has long played Atlas to the Chilean economy, accounting for an estimated 10% of the country's entire GDP. Certainly, the sector has been the driving force behind much of the country's recent growth and development.

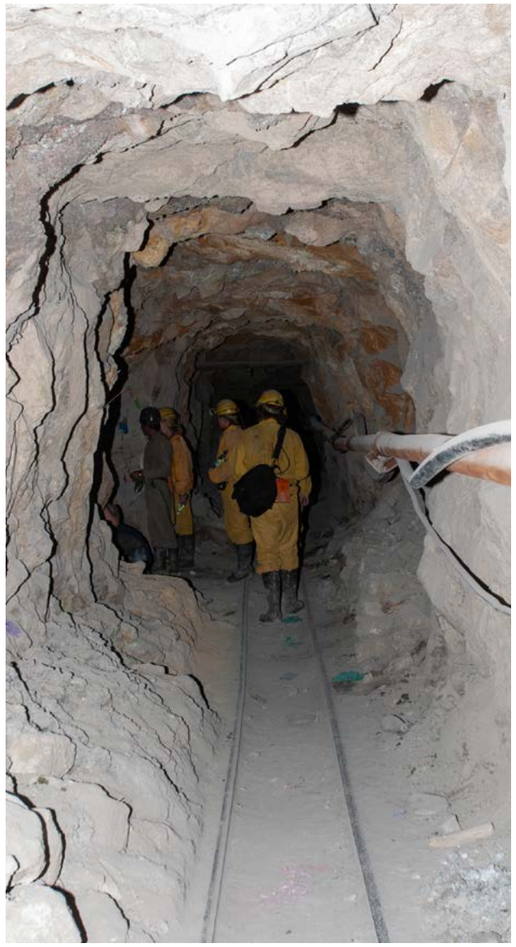
While, to the untrained eye, gold and silver might be seen as the most desirable metals, it is in copper that Chile have found their own 'gold mine'. Copper is a source of wealth from which they have both generated billions of USD in revenue and built a reputation as one of the foremost exporters of copper to the rest of the world – almost 50% of all Chilean exports.

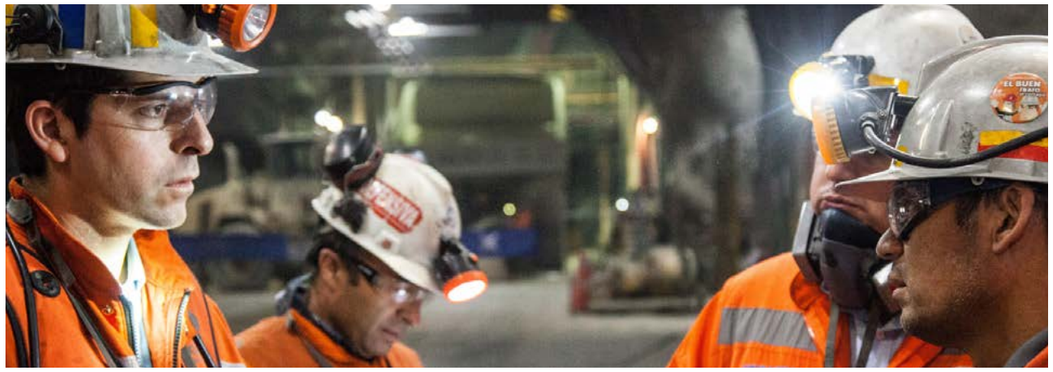
Due to this abundance of mineral riches, Chile has become a hot zone for foreign mining companies, but as a result of its monopoly over copper extraction and processing, CODELCO has ensured that the revenue from copper mining stays firmly within its borders, to the benefit of the Chilean people.

Current operations:

CODELCO currently operate a total of seven mining divisions (Andina, Chuquicamata, The Lieutenant, Gabriela Mistral, Minister Hales, Radomiro Tomic and Saviour) as well as a large-scale refinery and smelter.

Through the output of its array of mining assets, the company produces a vast amount of unrefined and fine copper to the tune of millions of tonnes per annum. In the first six months of 2021, CODELCO produced around 796 million tonnes of copper, a 7% increase on the same period of last year (744 million tonnes). In the same period their available surplus rose to US$3.675 million, an increase of 10% from the first six months of 2020. CODELCO anticipates that this growth will continue going forward as to the company further expands its operations over the coming years.





Looking to the future:

A famous bon mot asserts that "Nothing wilts faster than a laurel that has been rested upon"; a sentiment that CODELCO has certainly chosen to integrate into their ideology.

As a company, CODELCO is looking to the future and planning how to expand their operations, with several of these projects already under way.

Perhaps the most ambitious of their undertakings is the underground mine currently under construction at the site of the open pit Chuquicamata mine, located 2,850m above sea level, several hundred kilometres from Antofagasta and around 1,200 km North of their headquarters in Santiago.

The Chuquicamata mine is, at present, the largest mine by excavated volume anywhere in the world. It has been in production since 1915 and last year was responsible for 400,000 metric tonnes of fine copper production. Over recent years the mine has seen a decrease in its profitability and so it was proposed that, in order to access the wealth of minerals beneath the pit, the company would initiate works that would see the mine transformed from a traditional, open pit mine into one of the most substantial underground operations anywhere in the world.

Due to its size, construction of the mine has been split into 3 separate stages; The project began its 'initial exploitation' phase in 2019 with the construction of the infrastructure necessary to begin operations. The second (Infrastructure 1) and third (Development of mining works) phases were authorised in 2020.

Codelco

Proud to be aboard

The German company ScrapeTec Trading GmbH has been on the market with its innovation AirScrape for 4 years. Wherever bulk goods are moved. This patented, special conveyor belt side seal for transfer points works according to a unique suction principle, the Venturi effect: the seal hovers a few millimeters above the belt without any contact. The running speed of the conveyor belt creates a vacuum which sucks in the air from outside the seal and thus guarantees that no fine material or dust can get loose. This is also supported by the special lamellas of the conveyor skirting, which at the same time always guide the bulk material to the middle of the belt. According to the manufacturer, this eliminates the development of dust at the transfer points of the conveyor belts and reduces dirt from spills to zero.

This year ScrapeTec GmbH was proud to announce that it is now on Codelco's supplier list. The first shipment of AirScrape conveyor skirtings went to the Codelco mine in Chuquicamata. That was just the first step. There is a plan according to which all Coldeco mines at the transfer points of the conveyor systems are to be retrofitted with the AirScrape over the next few years. Because the sum of the advantages of this contactless conveyor seal skirting completely convinced the decision-makers: no contact, no friction, no wear, no maintenance, no more dust and no more spills - the tenor is "unbeatable".

ScrapeTec Trading GmbH is based in Kamp-Lintfort, a former mining town in Germany. Company founder and owner Wilfried Dünnwald is a former engineer in hard coal mining and developed the AirScrape. Thanks to his experience with underground loads, he was looking for a solution that would switch off the extreme dust and dirt development at transfer points, reduce maintenance and repair costs and thus ensure greater profitability. At the same time, the working conditions for employees in this area should be greatly improved in terms of health and safety. In Codelco, ScrapeTec found a customer who shares exactly these goals. During the test phase of an AirCrape installation, the engineers at Codelco were able to convince themselves of the mode of action and the advantages. This ultimately led to the listing as a supplier.

Solutions around the transfer points - ScrapeTec has meanwhile expanded its product range. The TailScrape complements the AirScrape as a conveyor belt seal skirting in the same way at the rear of the transfer. The DustScrape also offers additional open dust protection in the settling area. And the PrimeTracker stabilizes and centers the run of the conveyor.

"We are proud to be able to support Codelco as one of the largest mine operators in South America with our solutions," says ScrapeTec sales manager and co-owner Thorsten Koth, who also looks after Codelco personally. "Four years ago we would not have thought that we would someday play a role in mining worldwide. Many customers are discovering more and more the relevance of preventing dust development and spillage on conveyor systems - in Europe, Africa, Australia, North America and now also here in South America. We look forward to the coming challenges with Codelco. "

SCRAPETEC

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Project manager Andrés Avendaño stated that the 3 stage plan was necessary as, *"It is a highly complex and long lasting project". He also said that due to the complexity it would be "a challenge to execute the engineering, construction and commissioning of this project while maintaining strategic continuity almost 20 years from its first conceptualisation."*

One of the biggest challenges facing the project is the difficulty associated with making the change from open pit to underground mining. Not only in terms of the construction but also with regard to retraining workers who have only experienced open pit mining. Underground mining is not as common in Chile as open pit and many of those who are now running the underground operation had to be retrained in order to prepare them for the unique challenges presented by operating underground.

The project is expected to create around 2,200 jobs once fully operational it is anticipated that it will achieve daily production of 140,000 tonnes per day by 2026, resulting in a fine copper output of 320,000 tonnes yearly with an estimated worth of US$2.5 billion.

While The Chuquicamata mine expansion is currently the most ambitious project currently under way, CODELCO is busily engaged in other major undertakings such as the New Andean Transfer System.

Aiming to replace the current primary crushing and ore transportation system for the Andina copper mine, located 80km north-east of CODELCO's headquarters in Santiago. The primary goal of the project is to replace the current system of ore transfer which has been affected by recent expansions to the mine.

Investment in such works on the part of CODELCO are a clear demonstration of CODELCO's unwavering dedication to the expansion and development of Chile's copper mining capability, as the company strives to generate further wealth and economic advantages for Chile and its people.

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