

COLLAHUASI

COPPER FROM THE HIGH ANDES



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The giant Collahuasi open pit operation in northern Chile is the world's fourth largest copper mine: it aims to be a model for other operators in operational excellence, social responsibility, and safety

WRITTEN BY: **JOHN O'HANLON**
RESEARCH BY: **CANDICE NICE & ROBERT HODGSON**









Collahuasi, or to give it its full name Compañía Minera Doña Inés de Collahuasi SCM, is a joint venture owned by two equal mining majors, AngloAmerican and Xstrata, with 44 percent of the shares apiece. The remaining equity is in the hands of a group of Japanese interests led by Mitsui & Co Ltd, one of Japan's largest trading companies and including Nippon Mining & Metals and Mitsui Mining & Smelting. Not surprisingly, then, Japan is an important taker for the mine's products, mainly copper concentrate of which 417,282 tonnes were produced in 2011, with a smaller amount of copper in the form of 99.99 percent pure copper cathode, of which 36,002 tonnes were sold. In all this represents 8.6 percent of all the copper content produced in Chile over that year.

The Chilean, Japanese and Chinese markets together account for around 80 percent of Collahuasi's exports of copper concentrate while over 70 percent of its copper cathodes go to the Chinese market. In the case of the molybdenum, a by-product of which 6,659 tonnes were produced in 2011, 99 percent is sold within Chile and the remaining one percent exported to Thailand.

The mine is located in the Andean plateau 4,400 metres above sea level in the Tarapacá Region of the far north of Chile and close to the border with Bolivia. It is a poor but fertile region, with some of the most significant vineyards in Chile and a very long history of mineral extraction, best known in the past for its production of saltpetre. Copper has been exploited since

Compañía Minera Doña Inés de Collahuasi, Chile www.icv.cl

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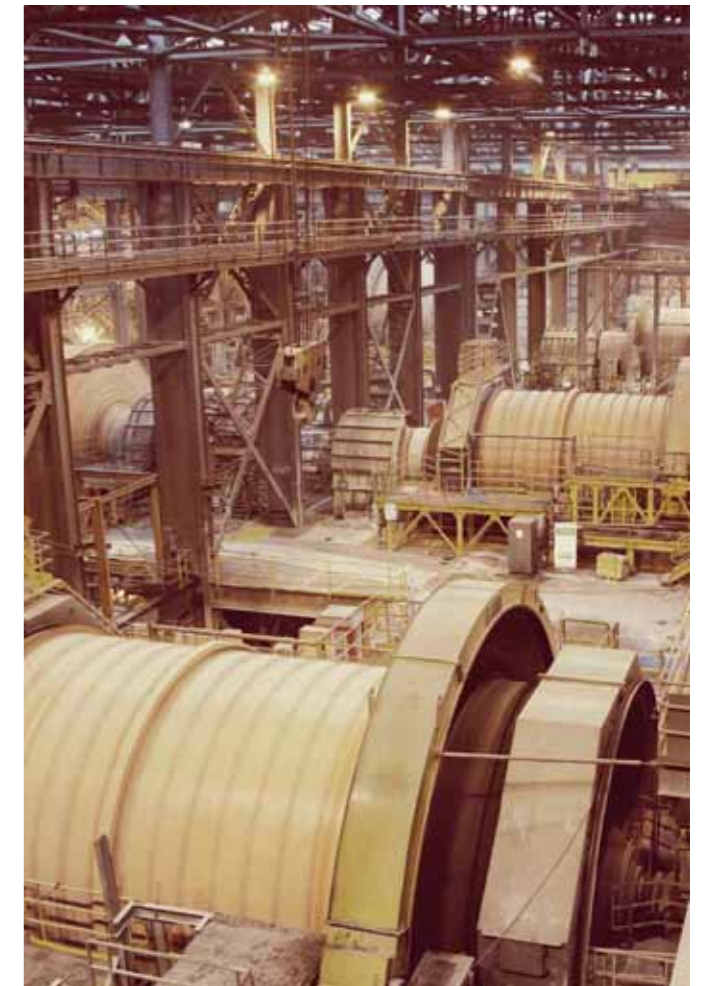
1880 when the Tarapacá systems of high-grade copper and silver veins began to be attract interest. Fast forward to 1991, when a combination of satellite, aerial photography and onsite studies, along with drilling activities, resulted in discovery of the Ujina deposit. From the concentrator plant in Ujina, a 203-km slurry pipeline leads down to the filter plant and loading facilities in Punta Patache, 65 km south of Iquique, Tarapacá's capital. The molybdenum plant is also located here as well as the port terminal from which processed products are shipped to markets around the world.

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The feasibility and environmental impact studies for the Collahuasi Project were approved in 1995 and at the end of 1996, once financing of Collahuasi's environmental impact studies was approved in 1995, construction and development began by the end of 1996, and commercial production commenced in 1999. Since then it has grown into one of the biggest players within Chile and internationally. Nevertheless it has a future that promises to eclipse its past. An ongoing pre-feasibility study for the company's proposed \$6.5 million Phase III



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Perú
 ARCADIS Perú S.A.C.
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“WE CONSIDER THE CONTRACTORS AND THEIR STAFF A KEY ELEMENT OF OUR OPERATIONS”

expansion project will pave the way towards a total copper production target of more than a million tonnes per annum (tpa) by 2017, which would make it the biggest mining project in Chile.

It should be noted that the company's Phase III expansion project, which envisages an investment of US\$6,500 million, has reached the pre-feasibility stage. Following this initiative, Collahuasi hopes to be producing over one million tonnes of copper content annually by 2017, positioning it as the largest mining project in Chile. The impact across the Tarapacá Region in terms of job creation, goods and services driven by the supplier base

and contractors would also be a great boost to the region. When it is considered that in 2011 more than 9,000 contractors' personnel were working alongside Collahuasi's 2,600 direct employees, the contribution of this project alone to the economy of the region can be seen clearly. The expansion embraces some significant improvements in water efficiency, so vital in Chile's uplands. The Phase III development will see the implementation of tailings thickening, increased water recycling and the use of desalinated water at the mine.

In 2011, Collahuasi invested more than US\$14 million in environmental projects of which over 40 percent was devoted to the

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treatment and disposal of waste. The efficient use of the water is a key objective of Collahuasi's sustainable development strategy and this is reflected in its high water management standards. The company has developed a sustainable water extraction policy with demanding targets – a good example of

the best practices being implemented is shown in the impact of mining activity on the Jachucoposa Wetland and Spring, the main water source affected by extraction for Collahuasi's operations.

The company undertook to contribute to the restoration of the natural water flow. Thanks to the measures it has taken, water flow in the Jachucoposa Spring has shown a sustained increase from 12.6 litres per second in December 2007 to 39.2 in December 2011 – in other words, water flow increased more than threefold in just four years. Additionally that year the company reduced its unit consumption of raw water for the fourth consecutive year. This not only reflected the greater efficiency it achieved but also positioned Collahuasi as an industry leader in the field of water management.

But people come first. “We consider the contractors and their staff a key element of our operations,” remarked CEO Giancarlo Bruno. “We therefore, seek to ensure that their working conditions are similar to those of our own employees.” In 2011 the company made a number of infrastructure improvements, principally regarding living conditions, canteens and recreation facilities. It has also been implementing a supplier development programme, co-financed



by the Chilean government's Economic Development Agency (CORFO).

From the start of its operations, one of the values to which Collahuasi has given most emphasis is its commitment to the development of the communities of the Tarapacá Region. This is reflected in a range of initiatives that seek to enhance the quality of life of their inhabitants in such fields as arts and culture, entrepreneurship and job creation, education, social development as well as health and sporting activities. In 2011, its investment in community relations projects amounted to more than \$13 million.

For Collahuasi, its people are the company's principal asset and their commitment and collaboration are essential for its sustainability. For this reason, it constantly develops initiatives that contribute to the welfare and progress of its workers and their families. These initiatives include the company's training programme, its policy of local hiring, its Apprentices Programme and the pension, health, educational and housing benefits it provides. They also include imaginative social programmes. For example, in July 2009, Collahuasi signed the historic Techos para Tarapacá (Roofs for Tarapacá) alliance with the Un Techo para Chile (A Roof for Chile) Foundation, the



Ministry of Housing and Urban Planning (MINVU) and the También Somos Chilenos (We are Chileans too) Leaders' Corporation, an organisation that represents shanty-town inhabitants. The goal of this four-year project is to overcome the harsh housing conditions and social exclusion of the Tarapacá Region's most vulnerable families, building definitive housing for 1,477 families from the 13 shanty towns that still exist in the region.

Education is the way out of the cycle of deprivation in this community. "In our relations with the Tarapacá Region," says Bruno, "and as part of our undertaking to contribute to educational improvement, we continue to work through the Collahuasi Educational Foundation. We know that better education is one of the great aspirations of the people of the Tarapacá Region and, indeed, of all Chileans. Through the Foundation, we can help to improve the quality of life of children and young people and we continue to see progress in the attainment of pupils at the 18 schools that form part of our programmes." In 2011, the company's direct employees received a total of 302,102 hours of training, equivalent to an average of 108 hours for each person.

With a 50 year estimated mine life Collahuasi is certain to play a vital part in northern Chile's continued economic development. As Giancarlo Bruno puts it: "We know that mining is one of the economic sectors with the highest short, medium and long-term growth prospects. That implies great challenges which we must manage correctly in order to transform them into opportunities for our company's growth and the development of our collaborators and a better future for the Tarapacá Region and our country." ■

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