Sector Report

MINING

CHILE

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OVERVIEW

Mining is crucial to the Chilean economy. It accounted for more than 60% of Chilean exports in 2008 of which copper alone was 51.8%. Chile hosts a wide variety of minerals including gold, silver, molybdenum, lithium, zinc, iron ore and, most importantly, copper. Chile is the world's largest copper producer. It accounted for 36% of global production in 2008. It is also the world's third largest producer of molybdenum.

Figure 1

	Millions of $US F.O.B	% of total exports
Total copper exports 2008	32,807.5	51.8
Total mining exports 2008	38,190.9	60.4
Total Exports 2008	**63,281.7**	**100**

Source: Banco Central de Chile, May 2009

Chile's mining is largely surface mining, however companies are involved in deep mining and Chile boasts the largest underground copper mine in the world – the El Teniente Mine belonging to Codelco (see page 5).

OPPORTUNITIES

Large multinational mining companies dominate the mining sector in Chile. There are a number of Chilean owned companies, the largest of these local players are Antofagasta Plc (a company listed in London) and Codelco (the State owned mining company). Set out below is an overview of future proposed projects from these large players. These projects provide opportunities for companies that support the mining sector (machinery suppliers, consultants, etc.).

ANGLO AMERICAN

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In response to the financial crisis Anglo American announced a reduction in capital expenditure on its base metals projects in 2009 to US$1.4 billion. This has affected the commissioning date of the Los Bronces Copper Expansion Project in Chile by eight months. The project aims to take production to an average initial level exceeding 400,000 tonnes per annum and reduce water use by 40% per lb of copper. First copper production is now expected in the fourth quarter of 2011.

Investigations are taking place into Anglo American's potential investment in phase 1 of the expansion of the Collahuasi copper mine. (As discussed in Xstrata's section below.)

ANTOFAGASTA PLC

Av. Apoquindo 4001, 18th Floor
Las Condes
Santiago
Chile

Tel: (56 2) 798 7000
Website: www.antofagasta.co.uk
Antofagasta Plc's largest future project is the Esperanza Project, which is estimated will produce around 195,000 tonnes of payable copper per year (in the first ten years) and represents a total estimated investment of US$1.9 billion. It is also expected to produce 230,000 ounces of gold from 2011 onward. Production is expected to begin in the final quarter of 2010.

BARRICK GOLD CORPORATION

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Providencia
Santiago
Chile
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Website: www.barrick.cl

Barrick has an early stage project being the Pascua-Lama gold-silver project on the Chilean-Argentinean border. According to their annual report, the project has 'almost 18 million ounces of proven and probable gold reserves and more than 700 million ounces of Silver contained within gold reserves'. Significant progress has been made on securing the remaining sector permits and approvals for this project as well as on fiscal matters at the federal level including the cross-border taxation arrangements between Chile and Argentina.

Barrick has also announced a US$30 million expansion of the Punta Colorado wind farm project near Pascua-Lama, increasing their investment to US$70 million and its generating capacity from 20 to 36 megawatts.

BHP BILLITON

Avda. Américo Vespucio Sur 100, 9th Floor
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Chile

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Website: www.bhpbilliton.com

BHP is supporting the construction of an LNG facility to supply gas to the northern grid system, that supplies its mines. This is scheduled to be completed in 2010. BHP have also signed off agreements underwriting the construction of a 460 mw coal-fired power station, which is scheduled for completion in 2011.

At Escondida two projects are currently being undertaken:

- A pre-feasibility study into the building of a third concentrator plant.
- Extensive exploration of the Escondida lease, with an estimated US$327 million to be invested in drilling, assaying and metallurgical test work following early drilling results that suggested extensive additional mineralisation in close proximity to existing infrastructure and processing facilities.

CODELCO
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During 2008 Codelco invested more than US$50 million into research and development and US$1,962 million for the development of projects that will permit the maintenance or enlargement of its production across all operations.

2008 saw the end of project Gaby and the start of operations of Codelco's 100% owned Gabriela Mistral mine. The project was a US$1,268million investment. It has the capabilities to produce 150,000 tonnes of refined copper a year.

Coldelco is currently undertaking, project Gaby phase II. This has the aim of increasing the capacity of production at the Gabriela Mistral mine to 170,000 tonnes of refined copper by 2011.

At Codelco Norte a feasibility study has been started to evaluate the Chuquicamata Subterránea project. This will extract mineral resources located below the current pit, that will cease to be profitable in the next decade. The estimated investment for the project is US$ 2000 million and will produce approximately 340,000 tonnes of copper ore every year for the next 50 years.

RIO TINTO
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Santiago

Tel: (56 2) 203 1122
Website: www.riotinto.com

The Rio Tinto Group combines Rio Tinto plc, which is listed on the London Stock Exchange and headquartered in London, and Rio Tinto Limited, which is listed on the Australian Securities Exchange and has executive offices in Melbourne. In Chile Rio Tinto has a 30% interest in Minera Escondida (described in the BHP section above).

XSTRATA COPPER
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Las Condes
Santiago
Chile

Tel: (56 2) 478 2200
Website: www.xstrata.com

At Collahuasi Xstrata has secured US$183 million to aid in phase 1 of the expansion plans. This is intended to increase annual copper production capacity to 600,000 tonnes from the second half of 2010.

At Lomas Bayas a US$70 million budget was approved in November 2008 for an expansion project to increase production by 15% to 75,000 tonnes per annum. A diamond drilling campaign totalling 6,000 meters was also approved for initiation in 2009.

At Altonorte phase IV expansion to 1.2 million tonnes per annum of smelter feed was successfully commissioned in October 2008, comprising the construction of the new no.1 acid plant that will increase annual acid capacity to 1.1 million tonnes.

BUSINESS OPPORTUNITIES IN THE MINING SECTOR

UKTI publishes international business opportunities gathered by our network of British Embassies, High Commissions and Consulates worldwide. These opportunities appear in the Opportunities portlet on the relevant sector and country pages on the UKTI website. By setting up a profile you can be alerted by email when relevant new opportunities are published. New or updated alert profiles can be set in My Account on the website.

CHARACTERISTICS OF MARKET

Chile has 36% of the total global reserves of copper, being the largest known copper reserve in the world. Codelco, Chile's state owned copper company, has 170 million tonnes in its active reserves, including known and suspected deposits.

Figure 2

Mineral	Chilean Reserves base1 (thousand metric tonnes)	World Reserves base (thousand metric tonnes)	Chilean % of World Reserves
Copper	360,000	1,000,000	36%
Lithium	3,000	11,000	27.3%
Gold	3.4	100	3.4%
Molybdenum	2.5	19	13.2%

Source: U.S. Geological Survey, Mineral Commodity Summaries, January 2009

Chilean mining consists primarily of open pit, hard rock mining. Most of the large-scale mines are located in the Atacama desert in the north of the country. Some, close to the Andes Mountain range, are at altitudes exceeding 4,000 metres, which makes exploitation difficult, particularly in winter months.

Contracts for large-scale projects are invariably placed with international consulting engineering companies for "fast track" exploitation. These projects are usually Engineering, Procurement, Construction and Management. Companies who typically obtain this work are Bechtel, Fluor Daniel and Kvaerner Metals.

Even up to 15 years ago the mining industry in Chile was dominated by the state owned company Coldelco, however with the introduction of new laws in the 1980s Chile began to see more and more foreign investment. Mining laws in Chile are more geared towards foreign investment than those of other Latin American countries. The Organic Constitutional Law on Mining Concessions (1982)2 and the Mining Code[3] of 1983 together with environmental directives comprise the key regulatory mechanisms for mining activity.

[1] The reserve base is the in-place demonstrated (measured plus indicated) resource from which the reserves are estimated.
[2] Link for English version
http://www.cochilco.cl/english/normativa/descarga/organic_constitutional_lawon_mining.pdf
[3] This implemented a reliance on market mechanisms for the allocation of land use. In effect, concession holders have private rights which are transferable and transmittable, liable to mortgage and other real property rights, and in general, are subject to the same civil laws applying to real property.

The UK is the fourth largest foreign investor in Chile and the majority of this investment has been in the mining sector. Mining and quarrying represent 73.15% of the UK's materialized investment in Chile between 1974 and 2008. The major UK investors in the Chilean mining sector are Anglo American, BHP Billiton and Rio Tinto PLC.

As a result of the financial crisis, a study by CESCO states that investments in the Chilean copper sector have fallen by 25% since September 2008. According to Business Monitor International's 2009 Chilean mining report, approximately US$7bn of this postponed investment, is attributable to the world's largest miner, BHP Billiton, the majority holder of the largest copper mine in the world at Escondida.

CHALLENGES:
In addition to the challenges facing the mining industry through the global economic downturn, one local problem affecting the industry is the unstable supply and pricing of power and water. Referring to Chile, Anglo American stated in its 2008 annual report that; 'power supply constraints were a major inhibitor of the mining industry's ability to expand to meet demand levels'. These comments are echoed by other major international mining players. In several cases the companies have undertaken projects to help alleviate the problem. For example Barrick Gold is working to improve the Punta Colorado wind farm project near its Pascua-Lama site to increase its generating capacity.

The problem of water supply, a result of Chile's geography, has been generally handled by careful management of its use by individual companies. The Luksic Group, majority shareholders of Antofagasta plc, announced plans in March 2009 to become directly involved in the supply of water in the north (around the city of Antofagasta). Through their subsidiary Aticama, Agua y Tecnología Luksic have acquired the water supplier Desalant for US$52 million from Spanish company OHL Inima and have plans to expand and supply, not just Desalant's current domestic consumers, but also the local mining industry. This will be achieved through building one large desalination plant.

A report on the Power sector in Chile is available by registering as a user on the UK Trade and Investment website (www.uktradeinvest.gov.uk).

KEY METHODS OF DOING BUSINESS

Other background information on doing business in Chile can be found on UKTI's website. Simply go to the Chile country page where you will find information on:

- Economic background and geography
- Customs & regulations
- Selling & communications
- Contacts & setting up
- Visiting and social hints and tips

MORE DETAILED SECTOR REPORTS

Research is critical when considering new markets. UKTI provides market research services which can help UK companies doing business overseas including:

- **Overseas Market Introduction Service** (OMIS). Bespoke research into potential markets, and support during your visits overseas
- **Export Marketing Research Scheme**. In-depth and subsidised service administered by the British Chambers of Commerce on behalf of UKTI

Contact your local International Trade Advisor if you are interested in accessing these services, or for general advice in developing your export strategy.

EVENTS

There are two main mining exhibitions in Chile: ExpoMin (www.expomin.cl) and ExpoNor (www.exponor.cl).

ExpoMin is held biannually in Santiago. The next ExpoMin will be held within the context of the Bicentennial celebration of Chile's Independence from 13th to 16th April 2010.

ExpoNor is the country's second largest mining trade fair, held during the off-year of ExpoMin in Antofagasta. The next exhibition will held in 2011. This is a smaller event than ExpoMin, however, it has been growing in importance given its key location.

UK Trade & Investment's Tradeshow Access Programme (TAP) can help eligible UK businesses take part in overseas exhibitions. Attendance at TAP events offers significant benefits:

- possibilities for business opportunities both at the show and in the future
- a chance to assess new markets and develop useful contacts
- grants are available if you meet the criteria
- UKTI staff overseas will be available to assist delegates

Find out more about the support UKTI can offer.

Details of TAP events can be found in the **Events** portlet.

Other **Market Visit Support** may be available via your local International Trade Advisor.

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For new and inexperienced exporters, our Passport to Export process will take you through the mechanics of exporting. An International Trade Adviser will provide professional advice on a range of services, including financial subsidies, export documentation, contacts in overseas markets, overseas visits, translating marketing material, e-commerce, subsidised export training and market research.