**Business Review** 

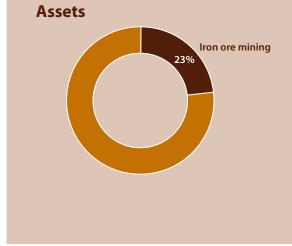
# Iron Ore Mining



# **Key operational highlights**

- Construction of key infrastructure progressing well
- Close to 3,000 contractor employees on site
- Over 50 million tonnes of material removed from the mine pit
- All key government environmental and heritage approvals in place

HK\$ million	2009	2008	Change
Assets	36,026	24,187	49%
Liabilities	25,977	16,112	61%
Capital expenditure			
Iron ore mining	9,742	8,479	15%
Ships	291	1,531	(81)%





In 2009, construction activity increased substantially in order to meet first mill line production targeted to commence by the end of 2010. All six lines are targeted to be in production during 2011. We made significant progress in building the project in partnership with our lead construction contractor, China Metallurgical Group (MCC), and dozens of other key contractors. Together with our contractors, we continued work in China and other parts of the world to manufacture the equipment needed to build and commission the project on schedule. With the countdown to first production underway, we expect construction progress to benefit from an influx of equipment and workers to the site.

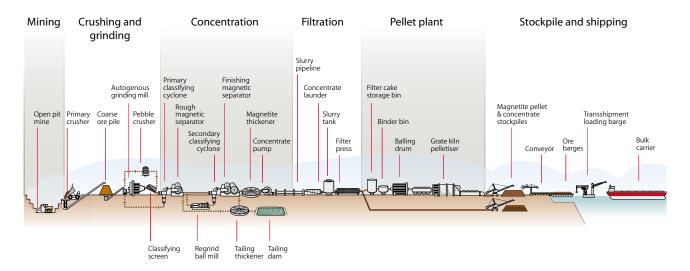
# Approvals

All major approvals for the construction and operation of the project have now been received. In 2009, we obtained approval under the Western Australian Government's Environmental Protection Act and Iron Ore Processing (Mineralogy Pty Ltd) Agreement Act to build our port and expand the project to export 28mtpa of concentrate product.





#### Magnetite mining and processing for export



# Progress

#### Concentrator

Construction of the magnetite concentrator reached a significant milestone in February 2010 with the arrival on site of the first ball mill and first autogenous grinding mill. Developed by Chinese and Australian engineering and design teams, these enormous mills built by CITIC Heavy Industries in Luoyang, China are among the largest and most powerful in the world. The mills, of which there will be 12 in total, will grind millions of tonnes of magnetite iron ore into a fine concentrate. Other equipment for the concentrator is almost ready for delivery from China, including the primary crusher and stacker.

#### **Mine Development**

To access the magnetite ore body, we have removed more than 50 million tonnes of waste material from the mine pit. We are using some of the world's biggest machinery for our mining fleet to increase efficiency and lower the operating costs per tonne of ore mined. The entire mining fleet is now on site operating or in various stages of assembly. Excavation is underway in the mine pit of the four crusher pocket slots, which will house mobile in-pit crushers. About 80 million tonnes of material each year will go through the in-pit crushers from a total of 140 million tonnes of material mined each year. The remaining 60 million tonnes is waste material.

#### **Power Station**

Our contractors, Austrian Energy and Environment, Siemens and Shin Nippon, made excellent progress on our 450-megawatt power station, and planning is now underway for the start of pre-commissioning works from about September. During the year, the contractors completed the installation of the gas and steam turbine generators, heat recovery steam generators and cooling towers. This highly-efficient power station, which is a combined-cycle plant, will produce 40 percent less greenhouse emissions than an open-cycle plant.

#### **Gas Pipeline**

During the year, we completed and pressure tested the gas pipeline that will fuel the project. This 13.5-kilometre pipeline will carry gas from Western Australia's main Dampier-to-Bunbury gas pipeline to the power station, which will generate electricity to run the project's massive grinding circuit. Demand for gas has helped bring about the development of the Reindeer gas field, which will supply our project.



#### Port

The Cape area has undergone a dramatic transformation, with major progress made on the development of our transshipment port. The area's hilly terrain is now mostly levelled following earthworks, drilling and blasting. More than 7.8 million tonnes of material was removed in 2009, much of it used to build the port breakwater. The 2.6-kilometre port breakwater is reaching its final shape following the placement of 3.6 million cubic metres of rock. In recent months, works were completed to allow the delivery of key infrastructure modules directly to site. These included thousands of special concrete CoreLoc units shipped from Thailand, which will form an armour barrier to protect the breakwater from the ocean. Once the project goes into operation, product ready for export will be moved from land to vessels berthed at sea via transshipment. Transshippers, barges and tugs are now under construction in China.

#### **Desalination Plant**

Construction in China is advancing on the 51-gigalitre desalination plant. The plant is being shipped to site in four giant pre-assembled modules. Located near the port, the desalination plant will supply water for a variety of uses, including the transportation of concentrate product along the 25-kilometre slurry pipeline. Civil works are underway at site, including construction of concrete foundations in readiness for the arrival of the plant modules, which are nearing completion in China.

#### Accommodation

Although accommodating our rapidly-growing workforce has been a challenge, our contractors have successfully completed villages designed to house more than 2,300 people. Construction is now underway on a permanent accommodation village, which will house our long-term operations employees and will accommodate 1,750 people, including some construction personnel. It is on schedule for completion ahead of first production.

#### **Transportation and Service Corridors**

All major transportation and service corridors were completed during the year. These include the permanent causeway and causeway bridge over a tidal creek, which will provide the essential link from the mine site to the port, and the north-south and east-west roads connecting the site.



# **Market Outlook**

The iron ore market remains strong as evidenced by bullish iron ore prices in the spot market. This is being driven by the strong demand from China's steel industry and recovering demand from the rest of the world. Chinese domestic iron ore production growth, while impressive, is not sustainable.

# People

The past 12 months have seen a considerable increase in the number of construction employees on site. There are now almost 3,000 contractor employees involved in building the project. This is expected to peak at about 4,500 personnel later this year. CITIC Pacific Mining now directly employs approximately 800 people. As the job market in 2010 is expected to be competitive, we have launched a recruitment campaign to attract high quality employees.

# Safety

In May, the project suffered a fatality when a Downer EDI Mining contractor tragically died while working on our project. Although not a direct result of the accident, during the year we redoubled our efforts to ensure the health and safety of our employees with





the launch of our vision, Incident Free Through the Way We Think and Act. Released in August, this vision aligns the efforts of CITIC Pacific Mining and its contractors, while promoting an understanding of our safety values, priorities and expected safety behaviours on the project. The vision is supported by safety commitments, measurement of success, safe work habits, regular safety leadership meetings and a reward and recognition programme. Our focus on health and safety has seen the continued reduction of the project's Recordable Case Frequency Rate (RCFR), which is the most accurate measure of safety performance in the mining industry.

As the project site is located in a high cyclone risk area, we strengthened our cyclone management procedures in order to protect employees and minimise infrastructure and equipment damage in the event of a cyclone. In addition, we built accommodation units and refuges capable of withstanding a Category 5 cyclone and introduced more comprehensive cyclone communication tools.

# **Environment and Heritage**

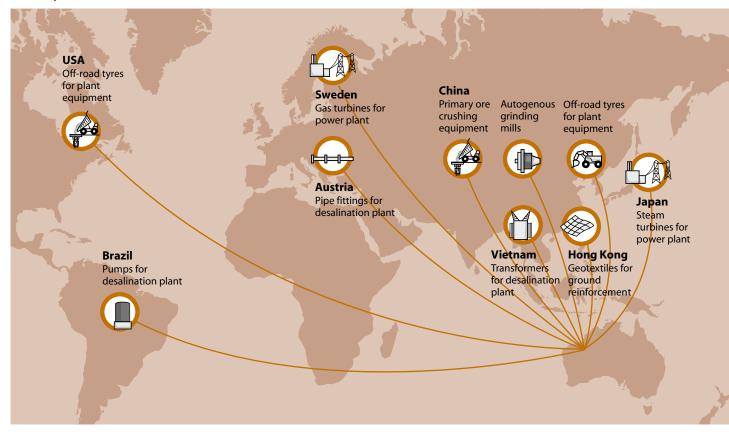
Throughout 2009, our heritage team undertook a series of surveys across the project site and gained the relevant approvals to use and develop the land. This, along with the salvage of heritage material, enabled us to gain access to almost the entire site so that construction could progress unimpeded. The team also fulfilled obligations under our Indigenous Land Use Agreements (ILUA's) to ensure relationships remain strong with the indigenous people where our project operates.

We obtained environmental approvals that are critical to the project's progress as well as its potential future expansion. During the year, we monitored groundwater, subterranean fauna, turtles and shore birds, and audited the environmental performance of our contractors to ensure protection of the natural environment.

### **Greenhouse Gas Emissions**

In the past year, the Australian government proposed a Carbon Pollution Reduction Scheme (CPRS) targeted at reducing carbon emissions. The CPRS has not been passed into legislation, and the targets for emissions reductions, start date of the proposed scheme and detailed regulations under the scheme have not been concluded. Under the currently proposed CPRS, emission activities in Australia will be penalised. As energy and water are key inputs, the Sino Iron project has made a conscious effort to reduce its

#### **Global procurement**



environmental footprint. Supplementary to that, we are making a strong effort to explain to the government the environmental benefits of magnetite in the global iron making and steel making process. We are also working on our eligibility for the Emission Intensive Trade Exposed assistance programme with the Australian Government.

### **Looking Ahead to First Production**

The focus is now on commissioning in the lead-up to first mill line production. This includes the power station, gas pipeline and concentrator circuit (first grinding mill line, concentrator thickener, magnetic separators, slurry pipeline and high voltage power supply). The port and breakwater as well as the transshipment fleet are being completed so that we can begin exporting our first shipment of magnetite concentrate.

To meet our significant personnel requirements, we will continue our recruitment efforts throughout the year and build additional accommodation to house the growing construction and operations teams. The international experience of our senior management team, together with the technological achievements made through our Australian-Chinese partnership, will help us stay on schedule for first production and contribute to the ongoing production ramp-up.

There will be challenges this year, however. A number of major resources projects coming on stream in Western Australia are expected to create a competitive job environment. To meet our large labour requirements, we are undertaking a national recruitment campaign to attract and retain employees of the highest calibre. As more and more construction and operations employees start work, accommodating these personnel will remain a challenge. Another potential issue could emerge following changes last year to Australian labour relations laws. These changes increase the role of unions to represent workers and raise the possibility of industrial unrest. There is also the ongoing challenge of meeting tight schedules on a highly complex project being built by a large and diverse number of contractors.

Given the scale of this project and the change seen in the iron ore market, a thorough review of the overall project cost is being conducted with a view that it could go up. Management is vigilant about costs and is working hard to ensure the project is completed in a timely and cost efficient manner.

# Facts

# **Project Overview**

The Sino Iron project, which is located at Cape Preston 100 kilometers southwest of Karratha in Western Australia's Pilbara region, is being developed by CITIC Pacific Mining (CPM), an Australian subsidiary of CITIC Pacific. The project will be 80% owned by CITIC Pacific. MCC – China Metallurgical Group Corporation, will have the other 20% interest, subject to approval by relevant Chinese government authorities.

The Sino Iron project was granted major project facilitation status by the Australian federal government in 2006 after entering into agreements with Mineralogy Pty Ltd to acquire rights to one billion tonnes of resource. During 2008 CPM acquired rights to a second billion tonnes of resource, giving the project an expected mine life of about 25 years at a production rate of about 28 million tonnes per year. CPM has rights to acquire an additional four billion tonnes, which would lift production to 70 million tonnes each year.

The project features a significant infrastructure investment for processing ore into magnetite concentrate and pellets. About 28 million tonnes of product will be exported each year. High quality magnetite is a product that is in demand by steel mills, including those of CITIC Pacific in China. CPM is headquartered in Perth, Western Australia and has a representative office in Beijing.

# Products

The Sino Iron project will help satisfy demand from China's steelmaking industry by providing a reliable source of high quality iron ore. The products from the Sino Iron project will not only be used in CITIC Pacific's three special steel mills in China, but also in other Chinese steel mills. It is believed the high quality concentrate product will be strongly welcomed by Chinese customers. The magnetite product to be exported from the project will have a higher iron



content with lower impurities than traditional products. Subject to final plant design, the concentrate is expected to have an iron content of about 67 per cent.

## **Mineral Resource Estimate**

CPM currently has rights to mine two billion tonnes of magnetite ore. The latest mineral resource estimation has identified additional resources of 2,190 million tonnes. This would allow the most efficient extraction of the highest quality material. This information would also be used in considering whether options for further mining rights are exercised in the future.

#### **Total Joffre resource**

Classification	Million tonnes	Magnetic Fe (%)
Measured	466	22.52
Indicated	1,158	23.04
Inferred	2,881	23.64
Total	4,504	23.37

Note: 'Mineral Resource' estimates are based on assay data at January 2009. Model released June 2009. A 'Mineral Resource' is a concentration or occurrence of material of economic interest in such form, quality and quantity that there are reasonable prospects for eventual economic extraction. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. 'Joffre' is a member of the Brockman Iron Formation, the main ore body for the project.

# **Key Contractors**

Apart from the project's lead contractor, MCC, there are numerous other contractors helping build the Sino Iron project. Some of the bigger contractors include:

Lead contractor	China Metallurgical Group Corporation (MCC)
Power plant	Austrian Energy & Environment (Australia)
Port breakwater	NRW Holdings and VDM Group (joint venture)
Desalination plant	IDE Technologies
Accommodation	Wylie & Skene
Crushing/maintenance	Downer EDI Mining
Causeway	Thiess
Mobile equipment	Terex

