

# Minjng Journal

**Eastern  
Europe focus  
Page 14**

## South Australian government bans mining at Arkaroola

THE development of Australia's uranium industry has received a setback after the South Australian government banned all mining activities in the highly prospective Arkaroola region in the east of the state.

Amid mounting public and political pressure, premier Mike Rann (pictured) announced plans to nominate the area for a World Heritage Listing.

Mr Rann explained that the wilderness sanctuary at Arkaroola would receive "unprecedented protection" through SA's mining act before introducing legislation to exclude mining in the region.

He said: "This will involve a three-step process to protect the region, with the first step being reserving the area from operations under the mining act, by proclamation, preventing future exploration and mining titles being granted in the area.

"The second step will be to enact special-purpose legislation to protect the natural, cultural and landscape values of the area in perpetuity.



"And the third step will be to nominate the area for listing on the National Heritage List."

The Australian Uranium Association criticised the move, saying that it was a

"poorly balanced decision" that locks away part of the state for all-time and creates sovereign risk.

ASX-listed explorers, Marathon Resources Ltd and Alliance Resources Ltd, are two companies directly affected.

Marathon, which owns the Mt Gee project, said it had requested an "urgent meeting" with the state's minister for mineral resources development.

Marathon added: "The company is taking appropriate advice with a view to seeking to redress the impact of this unprecedented action announced by the South Australian government."

Alliance said that it was disappointed, but that the decision would not affect all of its assets, which comprise uranium, copper, gold, tin and base metals.

The company said that its Four Mile deposits, and the area of the mining licence application, are "outside the area and are not affected. However, the area does cover approximately 38% of exploration licence 3666 in which Alliance has a 25% interest."

## Namibia plans mining tax increase

NAMIBIA'S finance minister, Saara Kuugongelwa-Amadhila, has announced wide-ranging tax increases for the mining industry. However, the Chamber of Mines of Namibia (CMN) is hopeful it can secure modifications to the fiscal burden, reports Roger Murray.

The measures announced at the end of last week include an increase from 37.5% to 44% in the tax rate for non-diamond mining firms, and increases in charges on exported raw minerals. The latter would incur a 15% value-added tax and a new 5% export levy (10% for diamonds).

In addition, the tax on non-resident shareholders (mainly paid on dividend remittances) would double from 10% to 20%.

The CMN (whose 52 full members include all of Namibia's mining

companies, and most of the exploration firms) expressed concern about the "potential adverse impact on Namibia's international competitiveness".

The chamber added: "It is important that any legislation that is implemented will not reverse the commercial viability of existing projects, or prevent investment in new exploration and mining projects."

The 44% rate contrasts with Botswana's 25% tax rate (for both mining and non-mining firms), and the 35% corporate rates in South Africa and Zambia.

CMN president, Mark Dawe, met this week with the deputy finance minister, Calle Schlettwein. Based on "a good meeting", the chamber is submitting, as *Mining Journal* goes to press, a written proposal to the

finance ministry in an effort to secure a reversal of some of the tax increases.

A well-placed source told *Mining Journal* that it was clear from the meeting that the finance ministry "had no idea of the devastating impact" of the tax increases.

The finance minister said that the revenue-raising measures were required to avoid Namibia falling into a "deficit trap".

The government also plans to introduce a transaction tax on the sale of rights or licenses "to explore, mine or retrieve" Namibian natural resources to third parties. This will be irrespective of where the transaction is concluded or the payment is made.

The tax rate was not disclosed by Ms Kuugongelwa-Amadhila, and it is unclear how the tax will be implemented.

### INSIDE

**Kim Harris  
takes a  
break  
page 10**



**Minor  
Metals:  
Quiet times  
page 13**

59 Co 27	59 Ni 28	63.5 Cu 29	65 Zn 30	70 Ga 31	73 Ge 32
103 Rh 45	106 Pd 46	108 Ag 47	112 Cd 48	115 In 49	119 Sn 50
192 Ir 77	195 Pt 78	197 Au 79	201 Hg 80	204 Tl 81	207 Pb 82
(248) Mt 109	(271) Ds 110	(272) Rg 111			

## Sishen probe police raid

THE Hawks, a special investigation unit of the South African police, has raided a number of government and company offices in relation to the Sishen iron-ore mining rights saga.

On Wednesday, police conducted search and seizure operations at the Department of Mineral Resources (DMR) offices in Pretoria and Kimberley, two offices of Imperial Crown Trading (ICT), as well as on the house of a company employee.

The police raids follow allegations that certain individuals from the DMR were involved in the fraudulent issue of prospecting rights.

A police statement read: "Our operation resulted in the seizure of documents which the Hawks need for further investigations.

"We are busy investigating charges of forgery, corruption and fraud. In simple terms, these relate to, among others, falsifying of documents."

ICT received a prospecting right to 21.4% of the Sishen mine in 2009, after ArcelorMittal South Africa Ltd failed to renew its licence under the new mining laws.

Kumba Iron Ore Ltd, which owns the other 78.6% and had applied for the remaining stake at the time, laid fraud charges last August.

**URS**

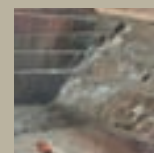
Scott  
Wilson

URS-SCOTTWILSON.COM

**Mine to Port**

Mining, environmental & infrastructure engineering - worldwide

mining@scottwilson.com +44 (0) 207 821 4102



## Editorial director

Chris Hinde PhD  
chris.hinde@mining-journal.com

## Deputy editor

Dominic Mercer MSc, DIC, FGS  
dominic.mercer@mining-journal.com

## Features editor

Katherine Welch MSc  
katherine.welch@mining-journal.com

## Assistant editors

Ben Creagh BA  
ben.creagh@mining-journal.com  
Gareth Tredway  
gareth.tredway@mining-journal.com

## Production editor

Tim Peters

## Sub editors

Vickie Johnstone  
Woody Phillips

## Editorial enquiries:

Tel: +44 (0)20 7216 6060  
Fax: +44 (0)20 7216 6050  
E-mail: editorial@mining-journal.com  
Website: www.mining-journal.com

## Advertisement, subscriptions and circulation director

Gareth Hector +44 (0)20 7216 6057

## Advertisement manager

Richard Dolan +44 (0)20 7216 6086

## Display sales executives

Cara Richards +44 (0)20 7216 6085  
Leon Walton, +44 (0)207 216 6095

## Supplement sales manager

Richard Verth +44 (0)20 7216 6088  
E-mail: adsales@mining-journal.com

## Advertising production

Sharon Evans

## Subscription enquiries:

PO Box 1045, Bournehall House,  
Bournehall Road, Bushey  
WD23 3YG, UK  
Tel: +44 (0)20 8955 7050  
Fax: +44 (0)20 8421 8155  
E-mail: subscriptions@mining-journal.com  
Annual subscription: US\$650  
(UK and Europe: £360/£580)  
ISSN 0026-5225

Mining Journal, published weekly, is available only as part of a subscription with Mining Magazine and Mining, People and the Environment, plus online access.

Published by Aspermont UK  
Albert House, 1 Singer St, EC2A 4BQ  
Printed by Stephens & George, Merthyr Tydfil  
Registered as a newspaper at the Post Office

## Chief executive officer

David Nizol

## Chairman

Andrew Kent

© Aspermont UK 2011



## Disclaimer:

Aspermont UK, publisher and owner of Mining Journal (the 'publisher') and each of its directors, officers, employees, advisers and agents and related entities do not make any warranty whatsoever as to the accuracy or reliability of any information, estimates, opinions, conclusions or recommendations contained in this publication and, to the maximum extent permitted by law, the publisher disclaims all liability and responsibility for any direct or indirect loss or damage which may be suffered by any person or entity through relying on anything contained in, or omitted from, this publication whether as a result of negligence on the part of the publisher or not. Reliance should not be placed on the contents of this magazine in making a commercial or other decision and all persons are advised to seek independent professional advice in this regard.

# Iron assurance

THE list of the most important metals and minerals, in terms of their mined value, is dominated by coal, iron ore and copper, which account for over half of the annual total of some US\$2,300 billion. While coal remains by far the most valuable mined commodity, iron ore has assumed ever greater significance over the past decade.

The reason is the burgeoning demand for steel, led by China, which has been the world's largest steel producer for the past ten years. The country is also the world's largest iron-ore producer (with 38% of the world total), but still only mines half of its domestic requirements.

Notwithstanding the remarkable recent demand statistics for iron ore, and bullish consumption outlook, it is the tight supply that has prompted a spate of recent research notes.

In its latest bimonthly Strategic Report, Metals Economics Group (MEG) noted that world iron-ore production reached a record 2,430Mt last year. This output was led by China (whose production rose 2.3% to 900Mt), Australia (up 6.6% at 420Mt) and Brazil (whose production jumped a remarkable 23.3% to 370Mt in 2010).

The Nova Scotia-based organisation estimates that there are 488 active iron-ore mines and projects. Of the total iron-ore resources contained in these deposits, the 'steady state' mines account for fully 21% of the global total, while mines undergoing expansion account for a further 20%.

According to MEG, Australia is set to increase its share of world iron-ore production over the next four years by adding almost 445Mt/y of capacity from six expansion projects and a scheduled 18 new mines. This equates to almost half of the 904Mt/y of new capacity anticipated by 2014. Brazil is the only other significant contributor, being expected to add 255Mt/y from nine expansion projects and five new mines.

MEG estimates that there are 261 iron-ore exploration and development projects underway that are at the reserves-development or feasibility stages. These contain an estimated 78,000Mt of iron-ore (with 38% in Latin America and 18% in Africa).

However, in the first report from its new iron-ore research service, Wood Mackenzie says that these iron-ore projects will not be sufficient to meet market demand for at least the next four years.

Wood Mackenzie's iron-ore analyst, Ronnie Cecil, says "There are industry expectations that the market will begin to settle with 240 to 250 new projects in the pipeline. This is because

China has started increasingly to source from non-traditional regions such as Iran, Russia, Mongolia and Southeast Asia. These imports grew by 7% over the past three years, representing the largest growth from any supply area. However, capacity additions planned by existing and new entrants will fall short of requirements until at least 2015."

Mr Cecil also warns "a number of projects will either face delays, or not proceed at all". He attributes this to "exploding" capital costs brought about by a shortage of skilled labour and the "hefty" investments required to build rail and port facilities at greenfield sites.

Wood Mackenzie also points to declining ore quality as being a growing issue, and warns "the need for costly outlay on concentrating equipment will place a further upward pressure on costs". Other challenges include difficulties in securing project finance, obstacles in obtaining mining permits and the substantial infrastructure often required.

As a result, Wood Mackenzie argues that "tight market conditions and high prices show no signs of abating", concluding "this supply deficit will help keep ore prices trading at record levels".

There is a similar message from Merrill Lynch, which said in a recent research report that "supply will disappoint to the

downside, meaning prices will be higher for longer". As evidence, Merrill Lynch notes that, on average, iron-ore projects are running nearly three years late compared with their initial company expectations. As a result, the organisation has reduced its iron-ore supply estimates by an average of 8% (Brazilian export predictions were lowered 10% and Australia's exports by 15%).

Merrill Lynch says that these delays are being driven largely by continuing labour, infrastructure, regulatory and political issues, rather than a lack of capital commitment.

Merrill Lynch concludes that there will be a 100Mt/y reduction in anticipated supply from the major exporters. This will cause a shortfall that will be filled from China's high-cost domestic production over the next few years. Cost-inflation pressures on China's output will continue as grades fall, and as beneficiation, labour and transportation costs escalate.

It seems that all the recent research reports have come to the same conclusion, namely that conditions are supportive of continued high iron-ore prices over the coming few years. Worrying, is it not, when everyone agrees. Just keep an eye on those Chinese plants.

Chris Hinde, editorial director



"Supply deficit will help keep prices at record levels"

## COMPANIES MENTIONED IN THIS ISSUE

Afferro Mining Inc	6	Copper Development Corp	9	Independence Group NL	9	Rio Tinto	4
African Barrick plc	4	De Beers	6	Inmet Mining Corp	4	Roche Invest SARL	8
African Mining & Exploration plc	11	Discovery Metals Ltd	8	Integra Mining Ltd	8	Sandfire Resources NL	3
Alliance Resources Ltd	1	Dundee Precious Metals Inc	16	Kazakhmys plc	4	Shree Minerals Ltd	8
AngloGold Ashanti Ltd	7, 8, 9	Empire Mining Corp	15	Kefi Minerals plc	8	Stratex International plc	8
Aquila Resource Ltd	4	Equinox Minerals Ltd	4	Kumba Iron Ore Ltd	1	Talon Metals Corp	9
Archipelago Resources plc	8	European Goldfields Ltd	18	Lundin Mining Corp	4	Tanzanite One Ltd	4
Assarel-Medet JSC	16	European Nickel plc	15	Marathon Resources Ltd	1	Thani Emirates Holdings Ltd	8
Aston Resources Ltd	4	Excellon Resources Inc	11	Mariana Resources Ltd	8	Tirex Resources Ltd	15
Atlas Iron Ltd	6	Excelsior Mining Corp	9	Nautilus Minerals Inc	3	Vale SA	4
Balkan Resources Inc	15	First Uranium Corp	7	Noble Group Ltd	8	Village Main Reef Ltd	7
Barrick Gold Corp	18	Gabriel Resources Ltd	18	Norton Gold Fields Ltd	6	Volcanic Metals Corp	15
BHP Billiton Ltd	4	Gem Diamonds Ltd	6	OM Holdings Ltd	4	Xanadu Mines Ltd	8
Brazilian Gold Corp	9	Glencore International plc	7, 11	Palabora Mining Company Ltd	11	Xstrata plc	7
Carpathian Gold Inc	18	Golden Touch Resources Corp	15	Pan African Resources plc	6	Zijin Mining Group Co	6
Centaurus Metals Ltd	6	Gold Hawk Resources Inc	11	Platinum Australia Ltd			
Consolidated Minerals Ltd	7	Grange Resources Ltd	8	Polymetal OAO			

# UNCTAD signals policy concern

THE 'regime' of international investment agreements is at a crossroads, according to the United Nations Conference on Trade and Development (UNCTAD).

In its latest World Investment Report, published in Geneva last Thursday, the organisation warned that with close to 6,100 treaties, investment policies are becoming too complex for governments and investors to handle.

Despite this, UNCTAD said "the system

remains inadequate to cover all possible bilateral investment relationships", which would require a further 14,100 treaties.

The World Investment Report drew attention to the increasing interaction between industrial policies and those related to foreign direct investment (FDI). Investment policy, it said, is also influenced by the "myriad of voluntary corporate social responsibility (CSR) standards".

Of the policies identified in 2010 that are related to FDI, over two-thirds are "favourable" to investment, according to UNCTAD.

However the one-third that incorporate tighter regulations or FDI restrictions represented a sharp increase in the number of negative policies enacted at the start of the decade.

Despite that, the flow of FDI rose moderately last year to US\$1,240 billion,

although this is still 15% below their pre-financial crisis average. There were also starkly divergent regional trends. Investment in Africa, least developed countries and landlocked developing countries all fell, as did flows to South Asia.

Overall, UNCTAD estimated that global FDI would recover to its pre-crisis level this year, increasing to US\$1,400-1,600 billion, and would approach its 2007 peak in 2013.

## ISA approves further seabed exploration

THE International Seabed Authority (ISA) has approved seabed-exploration projects submitted by four entities, including the governments of China and Russia.

The applications covered the exploration for polymetallic nodules and polymetallic sulphides in the Clarion-Clipperton Fracture Zone (CCFZ). This zone is located in the northeastern tropical Pacific Ocean in international waters between Hawaii and Mexico.

Applications were approved for China Ocean Minerals Resources Research and Development Association (COMRA), the Ministry of Natural Resources and the Environment of the Russian Federation, Nauru Ocean Resources Inc and for Tonga Offshore Mining Ltd (TOML). The latter is a subsidiary of Nautilus Minerals Inc.

TOML, which is sponsored by the Tongan government, has been granted 75,000km<sup>2</sup> in the CCFZ. The company said:

"As a result of exploration conducted in the 1980s, the CCFZ is known to host significant deposits of polymetallic nodules, which are golf ball sized nuggets, rich in copper, nickel, manganese and cobalt, lying on the seafloor in water depths starting at 4,500m."

The applications from Nauru and Tonga were challenged by members of the council, who remarked that these nations do not currently have sufficient legislation to regulate exploration and mining activities.

As a result, the approval was amended to ensure that a legal framework is in place before work on the licences can start. The applications from China and Russia were approved without debate.

Eight other groups have laid claims to areas of international waters, in both the Pacific and Indian oceans, covering deposits of nickel-bearing nodules.



## Sandfire funds DeGrussa development

**SANDFIRE Resources NL has secured a loan of A\$360 million (US\$398 million) to complete the funding for development of its 100%-owned DeGrussa gold-copper project (pictured) in Western Australia.**

The Perth-based company said it had received a credit-approval term sheet for the loan, and that due diligence was under way.

Sandfire said: "On the strength of the robust definitive feasibility study released last month, Sandfire's board has resolved to debt fund the remaining capital cost of the DeGrussa project, where mine development and construction is already well advanced and first gold laterite open-pit ore was recently mined."

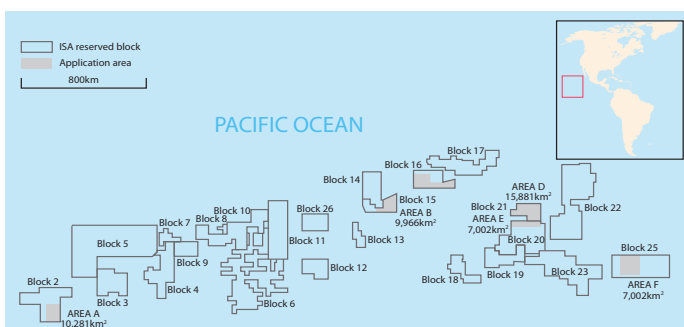
The ASX-listed company released an independent study that designed a

combined open-pit and underground operation capable of up to 77,000t/y copper and 36,000oz/y gold during the first three years.

Pre-production capital for the project has been estimated by Sandfire at A\$384 million, which includes A\$267 million for plant, equipment and infrastructure, A\$44 million for open-pit mining, A\$56 million for underground mine development and A\$17 million for other costs.

Sandfire, which expects to finalise the loan by the end of September, has also gained a A\$75 million secured-funding facility for financing long-lead equipment purchases, initial plant construction, ongoing open-pit mining and underground development.

DeGrussa feasibility raises output (June 10)  
Read more: [www.mining-journal.com/272207](http://www.mining-journal.com/272207)



## EBRD supports Serbian coal with €80 million loan

THE European Bank for Reconstruction & Development (EBRD) is to push ahead with plans to lend €80 million (US\$116 million) to help Serbia's main electricity company expand its coal production, despite objections from environmentalists.

EBRD spokesman Sergiy Grytsenko said that, by helping Elektroprivreda Srbije (EPS) to modernise its coal-processing technology, the loan would reduce the amount of carbon pollution.

Mr Grytsenko said: "These improvements will lead to savings of around 250,000t of coal for the same amount of electricity generated.

"This will lead to a reduction in carbon emissions of 200,000t/y.

"Serbia relies on coal as a natural resource, so they will use it. This loan is about helping EPS to use its equipment more efficiently. We will also help them buy new equipment that will allow them to excavate better quality coal."

The loan, now approved by the EBRD

board, will be complemented by a €60 million loan from German bank KfW.

In particular, the EBRD financing will help EPS buy a coal excavator, conveyor and spreader system for the Field C operation; a spreader system for the Tamnava West operation; and a management system for all of its mining operations in the Kolubara coal basin.

The basin provides around 75% of the lignite used for EPS's thermal power plants.

The company mines over 30Mt/y,

which is supplied to the Nikola Tesla and Morava plants on EPS's railway system.

An EBRD environmental assessment said carbon emissions were heightened by lignite being screened manually rather than by machine. The EBRD report also said that a "lack of online analysers causes very high coal quality variations delivered to the power plants". This requires supplementary liquid fuel at the plants and results, said EBRD, in "increased equipment wear and tear, and higher harmful gases emission".



## ■ ESCONDIDA STRIKE

BHP Billiton Ltd has declared force majeure on sales from the world's largest copper mine, Escondida in Chile, following strike action. The industrial action entered its seventh day on Thursday as workers demand higher remuneration. BHPB is calling the strike illegal and refuses to negotiate. According to news reports, striking miners have also blocked the road leading to the mine, preventing contract workers from entering and restarting operations. The union estimates the strike is cutting output by 3,000t/day.

## ■ KAZAKHMY'S PRODUCTION

Kazakhmys plc has produced 153,000t of copper cathode in the six months to end-June, putting it on track to reach its 300,000t target for the year. The company's output of copper-in-concentrate recovered in the second quarter following some seasonal and production issues at the start of the year. The average copper grade over the period was 1.01%, compared with 1.14% in the comparable period in 2010. The company said the decline was principally due to lower grades across the Zhezkazgan region. Financial results are expected on August 25.

## ■ PALABORA EARNINGS UP

South African copper miner and smelter, Palabora Mining Company Ltd, expects its half-year operating earnings before depreciation to at least double from a year earlier in rand terms. The R1.4 billion (US\$203 million) expected compares with R688 million a year earlier, according to a trading update. The company expects its net cash position to have grown by as much as R780 million in the past 12 months to R1.8 billion at the top end estimates. Palabora is a Rio Tinto subsidiary.

## ■ TANZANITE ONE SALES

Tanzanite One Ltd has increased sales in the June quarter by 57% compared with the previous three-month period. The US\$6.2 million was the best quarterly sales figure since the second quarter of 2008. Production from the company's mine totalled 641,615ct in the period, with grades averaging 53c/t. Advisors have also been appointed for the previously announced secondary listing on the Dar es Salaam stock exchange, planned for this year. The company is constructing a larger processing plant at its Tsavorite deposit, the final phase of its resource establishment work on the project.



## Vale and Aquila find answer to dispute

**BRAZILIAN miner Vale SA and Australia's Aquila Resource Ltd have resolved a dispute over shipments from their Isaac Plains joint-venture coal mine (pictured) in the Bowen Basin of Queensland.**

Aquila has reported that normal shipments have resumed from the coal mine. The company said that Vale and subsidiary, IP Coal Ltd, had "reached an agreement which effectively puts aside the difference of opinion between them regarding the ability to make separate shipments" from the mine.

The agreement would last until March 31 next year, Aquila said, adding that the two parties are looking at options for a longer-term resolution to the dispute.

Shipments from the mine were halted last month after a disagreement over the right of the companies to sell their 50% of the mined coal separately. The dispute originally erupted in November last year when a previous agreement to market the coal as a joint venture expired.

The companies are also locked in a dispute over the sale of Aquila's 24.5% stake in the Belvedere coal mine in Queensland to the Brazilian company.

Last week, Vale appealed a court decision ordering it to determine a fair value for the stake after the parties provided conflicting independent valuations.

Isaac Plains dispute escalates (July 15)  
Read more: [www.mining-journal.com/276551](http://www.mining-journal.com/276551)

## Inmet OKs Cobre Panama spend

THE board of Inmet Mining Corp has approved development of the US\$4.3 billion Cobre Panama copper project in Central America.

The decision is conditional on factors that include the approval of the Environmental and Social Impact Assessment (ESIA), an update of capital- and operating-cost estimates, and board satisfaction of the company's ability to finance the project.

Inmet has executed confidentiality agreements with "multiple" potential partners on the project, and said that it is engaged at "various stages of due diligence".

As a result of the development decision, Korea Panama Mining Company Ltd (KPMC) has to decide (under previously agreed deadlines) whether to exercise an option to acquire 20% of the project.

Under a front-end engineering design (FEED) study released in March last year, KPMC's equity contribution, based on the targeted US\$5 billion total financing, would be US\$625 million.

Last year a proposed merger between Inmet and Lundin Mining Corp fell through after Equinox Minerals Ltd made a higher offer for Lundin.

# Analysts: gold equities to rise

GOLD equities, which have so far underperformed the metal price this year, might start to track movements in the yellow metal, according to research.

Analysts at Ambrian Capital Partners suggest that, as was demonstrated in 2008, the "disconnect should eventually correct in line with spot prices".

So far in 2011, the FTSE Gold Mining Index has fallen by nearly 4%, despite a 14% increase in the gold price to a new all-time (nominal) high. Gold has averaged US\$1,465/oz this year, compared with US\$1,227/oz in 2010.

The independent research house, Fat Prophets, forecast this week that the price of gold will reach US\$2,000/oz by the end of July 2012.

Above inflation cost increases have prevented companies from receiving the full benefit of the increased gold price. This week, African Barrick plc reported a 24% increase in operating costs to US\$655/oz, reflecting higher labour, fuel and consumable costs in Tanzania.

The company's cash margin did, however, improve to US\$806/oz, an increase of 13% on the second half of 2010. The interim dividend was doubled.

This week, Newmont Mining Corp declared a 50% quarter-on-quarter increase in its three-month dividend to US\$0.30/share. The firm recently initiated a policy to link its dividends to gold prices – with the rate increasing by US\$0.05/share for each US\$100/oz rise in

the average realised gold price.

Newmont's board has also approved the construction of two projects, the Conga mine in Peru and the Tanami Shaft in Australia. Combined attributable capital costs are put at US\$2.4-2.9 billion.

Burkina Faso gold miner Avocet Mining plc, reported in its results this week, and on how it would spend some of the funds from its Southeast Asia sale.

The firm has declared an initial annual dividend of US\$20 million, while also buying back a fifth of its 292,165oz gold hedge for US\$40 million. The terms of delivery on the remaining ounces have been extended, with fewer ounces a year but over a longer period, giving the firm greater exposure to spot prices.

## Aston secures A\$350 million Maules Creek loan

**AUSTRALIAN coal company Aston Resources Ltd has secured a A\$350 million (US\$379 million) loan to fund construction of its Maules Creek project in New South Wales.**

Banks ANZ and Macquarie have co-underwritten a A\$175 million loan facility and A\$60 million bank-guarantee facility, Aston said.

These loans can be increased to A\$250 million and A\$100 million, respectively, once certain conditions,

including state environmental approval, have been granted for Maules Creek.

The company said the loans "materially reduce the cost of funding for Aston due to a significant reduction in the headline interest and because the corporate loan facility will remain undrawn until cash on hand is utilised".

Aston has fully repaid its debt from existing cash reserves with this

additional source of financing, the company added.

Tom Todd, Aston chief financial officer, said the company was pleased to secure financing from "two leading banks in the natural resources and project finance sector".

Mr Todd added that the refinancing is "another milestone for the Aston team, and allows the company to rapidly progress the Maules Creek project into construction and first coal".

# KGHM starts exploring for copper in Germany

## KGHM POLSKA MIEDŹ SA

ul M Skłodowskiej-Curie 48  
59-301 Lubin, Poland

Tel: +48 76 74 78 200

Fax: + 48 76 74 78 500

Web: [www.kghm.pl](http://www.kghm.pl)

# KGHM

POLSKA MIEDŹ S.A.

**A**FTER advancing the Afton-Ajax copper-gold project located in British Columbia, Canada, towards completion of bankable feasibility study, KGHM Polska Miedź SA has started drilling in the concession area of Weisswasser in Saxony, Germany.

The exploration work is conducted by KGHM Kupfer AG, a wholly-owned subsidiary of KGHM Polska Miedź. After receiving all the appropriate permits, the company started an aggressive drilling campaign in May 2011.

As well as Afton-Ajax, KGHM also works on other domestic exploration projects located in the vicinity of its three operating mines in Poland.

KGHM implements its corporate development strategy in order to expand its resource base and increase copper production to around 700,000t/y by the end off 2018. According to the priorities and knowledge base acquired during 50 years' experience in the mining industry, the company is conducting exploration in the areas considered most promising in terms of occurrence of Kupferschiefer-type copper mineralisation in south-western Poland and Lusatia (Saxony, Germany).

KGHM is currently exploring the copper belt that stretches from the border region of Brandenburg and Saxony in Germany to the area of its current mining activities, that is the area between Legnica and Głogów in Poland.

The company is developing three exploration projects, and in this respect is the most active mining firm in the region. The copper projects are the

Wartowice project in Poland, Gaworzyce-Radwanice project near to the currently operating Polkowice-Sieroszowice mine, and the Weisswasser project in Lusatia at the Polish and German border, says Krzysztof Kubacki, KGHM's exploration and business development manager.

According to its corporate strategy, KGHM aims at increasing its copper production from 500,000t to 700,000t annually – raising copper production by 200,000t within the next seven years. In order to achieve that, the company needs to search for new projects and advance them into production.

The acquisition of the Afton-Ajax copper-gold project in Canada, engagement in the domestic exploration in Poland and the drilling recently started in Germany show that the company is moving closer to towards this goal.

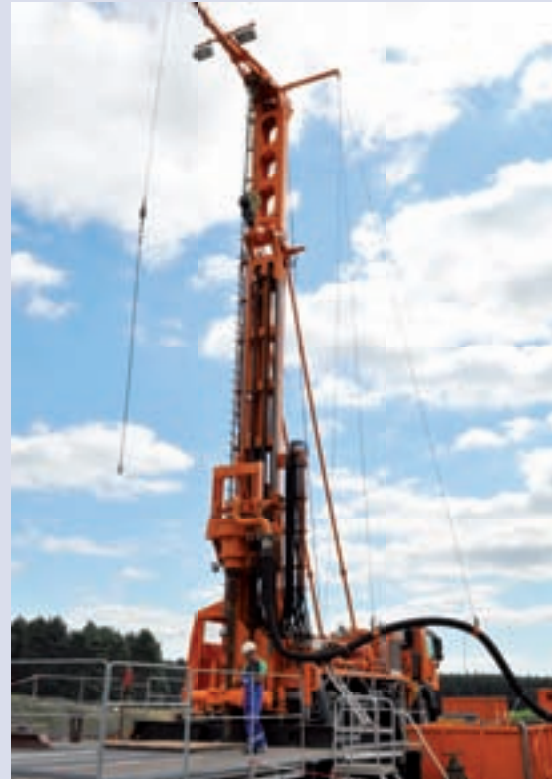
This is the second step in implementing the company's corporate strategy, after the signing of the investment agreement with Abacus in May 2010. KGHM's strategic aim is to produce 700,000t/y of copper in order to produce an additional 200,000t.

In order to increase production of copper, the company needs to continuously expand and broaden its resource base, says KGHM's president, Herbert Wirth.

The firm looks very carefully at all its possible investment sites. After taking into consideration a number of factors, such as location and the geopolitical situation, KGHM selected the concession area of Weisswasser and decided to pursue this opportunity. The firm said it is excited about this opportunity its daughter company KGHM Kupfer AG has. "We hope the drilling works in Weisswasser, Germany will prove to be successful," adds Mr Wirth.

The first stage of the drilling programme involves four boreholes of the depth to 1,400m, and carrying out seismic and geophysical surveys. The aim of the drilling is to examine whether copper mineralisation occurs in the area. In the case of positive outcome, KGHM will start the second phase of exploration work and drill three more holes, says Jolanta Dmowska, KGHM Kupfer AG president.

KGHM allocated over €13 million (US\$18.8 million) for the first stage of the exploration campaign, during which over 5,500m of drilling is to be drilled.





### ■ NORTON RAISES FUNDS

Zijin Mining Group Co has invested A\$27.7 million in Australia's Norton Gold Fields Ltd to take a 17% shareholding. The dual-listed Chinese firm, which operates in a diversified number of commodities, bought more than 138 million shares at A\$0.02 each – a 31% premium to the company's 15-day average. The funds raised allow Norton to reduce its debt levels from A\$80 million to A\$50 million. The placement would take place in two tranches with the second subject to shareholder approval.

### ■ AFFERRO SHARE PLACING

AIM-listed Afferro Mining Inc has completed a share placement that raised £15.5 million (US\$24.9 million). The firm issued 17.2 million shares at US\$0.90 each, which represents a 9% discount to the closing mid-market price on July 18. Afferro's main priority for the proceeds of the placement is to spend US\$15.6 million to accelerate its drilling programme, complete a scoping study and start a preliminary economic assessment study at the Nkout project in Cameroon. A further US\$5.2 million would fund the company's share of costs for the Putu project, while another US\$1.3 million would go towards target identification.

### ■ POLYMETAL REVENUE UP

Precious metal producer OAO Polymetal has reported a 26% rise in second-quarter revenue. The Russian company said revenue was US\$315 million for the period, an increase driven by higher prices. Polymetal said silver output was 6% higher at 5Moz, taking production for the opening six months of 2011 to 8.2Moz. Meanwhile, gold output was down 6% to 102,000oz, leaving first half production 12% lower at 184,000oz. The company has maintained its guidance for 2011 at 18-19Moz of silver and 470,000-500,000oz of gold.

### ■ ATLAS ALLIANCE

Atlas Iron Ltd has formed a strategic alliance with Brazilian-focused Centaurus Metals Ltd. Through an agreement between the ASX-listed companies, Atlas said it would acquire a 19.9% stake in Centaurus for A\$18.7 million (US\$20.7 million). The deal would take place in two tranches, with Atlas initially purchasing 110 million shares at A\$0.088 each. Subject to Centaurus shareholder approval, Atlas would subscribe to a further 102 million shares in a second tranche. Atlas would also receive a further 16 million share-purchase options under the first tranche, and another 14 million under the second tranche.

## Platinum Australia shuts Smokey Hills

PLATINUM Australia Ltd has met with the Department of Mineral Resources (DMR) in South Africa after its troubled Smokey Hills mine was forced to shut down.

The Perth-based company said the DMR informed it that the mine operator, Phokathaba Platinum Ltd, had failed to comply with the company's social and labour plan, including its local economic development projects and human

resources development programmes.

Platinum Australia said it had sought an "urgent meeting" with the DMR, and it took place on Monday, July 25.

The company added that Phokathaba "is also seeking urgent injunctive relief in the high court of South Africa". Platinum Australia said that approximately 1,000 people are employed on the Smokey Hills mine by Phokathaba and its contractors.

The company's Smokey Hills operation is not new to controversy. In June, a contractor was killed after a mob attacked a bus leaving the mine.

This followed a decision by JIC Mining Service Ltd in December last year to sack about 85% of the workforce at the mine over illegal industrial action.

Employee dies after mob attack (June 3)  
Read more: [www.mining-journal.com/271028](http://www.mining-journal.com/271028)

## De Beers reports record sales

DE BEERS, historically the world's largest diamond producer, has unveiled its highest ever sales for the six-month period to the end of June.

The results were supported by continued retail strength in India and China, and by stronger than expected demand in America.

Average prices increased by 35% in the period, compared with a year earlier. The company said the market outlook remained buoyant despite global economic "turmoil".

De Beers said that reports from the recent Jewellers' Circular Keystone trade show "indicate that the all-important Christmas season in the US, and Diwali, are set to be strong".

A note from RBC Capital Markets said threats to global economic growth as a risk to diamond markets for the second half, as well as potential for bankruptcies in the Indian market.

RBC added: "While more Indian cutting firms may stumble, Chinese demand remains strong, which should keep global diamond sales buoyant."

A total of 15.53Mct were recovered by De Beers during the period, in line with H1 2010.



Jwaneng mine  
in Botswana

The company said operations were affected by "maintenance and asset management difficulties and, to an extent, excessive rainfall in southern Africa".

The US\$3.89 billion in half-year sales exceeded the full year revenue of 2009, a period when the company made large-scale production cuts in reaction to the global financial crisis.

Earnings before interest, tax and depreciation totalled US\$1.18 billion in the period, 55% higher than a year earlier. Free cash flow, however, was 24% lower at US\$469 million, which the company attributes to the "timing of

stock purchases in the current period compared with 2010".

Net debt, excluding shareholder loans, fell 27% to US\$1.45 billion from US\$1.98 billion at the end of the first half of 2010.

In other news, large-stone producer, Gem Diamonds Ltd, released a trading update for the half year. The average selling price was up 77% from a year earlier.

Chief executive Clifford Elphick said prices were "extremely strong for rare, large, high-quality, good colour diamonds" of which the company's Letšeng mine in Lesotho was the single largest producer.

## Conference raises Ethiopian interest

THERE has been a "visible increase" in investor interest in the Ethiopian mining sector since the recent multi-sector investment conference in London, according to the Ethiopian minister of mines, Sinkinesh Ejigu.

Minister Sinkinesh said that Ethiopia's southern, western and northern greenstone belts are rich in primary and placer gold, platinum, phosphate, columbo-tantalite and gemstones.

Minister Sinkinesh said that the country's "internationally-competitive legal framework recognises the private sector as an engine for economic growth".

She added that the mining law exempts investors from customs

duties and taxes on materials necessary for mineral operation, while guaranteeing the opening and operation of a foreign currency account in Ethiopia.

To encourage increased exploration by foreign mining companies, the Geological Survey of Ethiopia (GSE) generates basic geosciences data, while two other government departments are responsible for the licensing and administration of mineral and petroleum exploration work.

As a result, more than 180 licences have been issued, and 80 companies (most of them foreign) are operating in the country.

Since the conference, a number of meetings have been arranged

between potential investors and the ministry.

Minister Sinkinesh said: "We take issues, comments and suggestions expressed by investors and mining companies very seriously, and strive to learn and continuously improve our policies and practices to overcome the unique challenges of the mining sector."

She added: "These issues include the development of the necessary technical, social and environmental skills to create a competitive and sustainable Ethiopian mining sector."

The Minister said that the mineral and geo-energy resources of Ethiopia are "untouched", and invited investors to see for themselves.

# M&As accelerate in June

MINING merger and acquisition deals worth nearly US\$34 billion were completed in June, over a third of the total value of deals completed in the first six months of the year.

According to Ernst & Young, this late momentum helped increase the value of deals in the first half to US\$96.3 billion, more than double the US\$47.9 billion tallied in the comparable period a year earlier.

Transactions in North America made up the largest proportion of transactions, with deals worth US\$35.9 billion. Coal deals represented the greatest value, with transactions valued at US\$27.86 billion.

However, according to Lee Downham (the financial services firm's global mining and metals transaction advisory leader), not as many deals have been done as could have been expected.

In total, 511 transactions were completed, compared with 573 a year ago. Mr Downham said: "With capital increasingly available to the sector, mining and metals companies are in a very good position to do deals."

He added that management of these companies are "wary", and "holding some deals back" due to ongoing global economic conditions, such as the Eurozone and US debt issues, as well as

the spread of resource nationalism.

There was also evidence that initial public offerings (IPOs) are being delayed by the uncertainty and stock market volatility, but Ernst & Young said the "pipeline remains strong".

In the first half of the year there was an increase in mining and metal's IPOs of 30% to 73. Total proceeds from these listings doubled to US\$13 billion, dominated by the US\$10 billion raised by Glencore International plc.

Mr Downham said: "We expect to see a significant number of mining and metals IPOs during the second half of 2011 and beyond."

## ConsMin wants shake-up of OMH board

**CONSOLIDATED Minerals Ltd (ConsMin) is lobbying for two members to be removed from the board of OM Holdings Ltd (OMH), in which it owns more than 11%.**

The company, which has the backing of largest shareholder Ukrainian Gennadiy Bogolyubov, said an immediate change is vital for the future of the company, and that it should include the removal of executive chairman Low Ngee.

ConsMin said: "It is the only way to address consistently poor corporate governance and lack of transparency in the conduct of the board."

"This, together with the ineffective leadership of the board, has led to the loss of close to A\$130 million in shareholder value since March."

By exercising its rights as a key shareholder, ConsMin has sent OMH a request for a special general meeting of its shareholders.

Mr Bogolyubov said the board of OMH has led the company "down a path of systematic value destruction", and had not acted in the best interests of shareholders.

He said: "These directors appear to exert an influence and dominance over the board, whose erratic and inconsistent decisions have led to a massive destruction of shareholder value."

"The OMH board has flip-flopped on major corporate decisions, including the now abandoned Hong Kong dual-listing, the proposed but uncompleted acquisition of a 49.9% stake in the Tshipi manganese project in Africa, and the inexplicable acquisition of a 10% stake in the owner of an iron-ore mine in Norway."

OMH fails in Hong Kong-listing bid (Apr 21)  
Read more: [www.mining-journal.com/265040](http://www.mining-journal.com/265040)

## Xstrata coal output falls

**XSTRATA plc suffered a slight fall in coal production in the first half of this year owing to the floods on the east coast of Australia.**

For the six-month period, Xstrata said total coal output reached 38.5Mt, a fall of 0.3% from a year earlier. Thermal-coal production rose by almost 5% to 32.4Mt, while coking-coal output was down 18% to 3.1Mt.

The Switzerland-based company said production of thermal coal increased on the back of the start of operations at the Mangoola mine in New South Wales and the Goedevonden mine in South Africa.

However, overall volumes were reduced due to the heavy rains in Queensland and New South Wales during the first quarter.

The company said: "Despite a rapid recovery at the majority of Xstrata's mines from the Queensland floods, delays in the repair of damaged rail infrastructure prevented domestic and export sales from the Rolleston."

Copper production declined to 434,046t in the first half from 434,147t last year, while nickel output added 13% to 51,436t, the company said.

## AngloGold buys stake in First Uranium



Ezulwini mine  
in South Africa

ANGLOGOLD Ashanti Ltd has agreed to buy Village Main Reef Ltd's 19.79% stake in First Uranium Corp for C\$28 million (US\$29.7 million).

The Johannesburg-based company, which held no interest in First Uranium prior to this deal, said it would pay C\$0.60/share for the stake.

In addition, Village has granted lock-up rights and rights of first refusal to AngloGold over its remaining 5.7% stake in First Uranium and R392.8 million worth of convertible notes.

AngloGold said the acquisition was "effected for investment purposes" and would be "reviewed from time to time".

The company said: "Depending on

various factors, including the receipt of applicable approvals, AngloGold Ashanti may in the future take such actions with respect to its investment in First Uranium."

This could include acquiring additional shares, selling or disposing of some of its interest or changing its intentions with the investment, the firm added.

Meanwhile, First Uranium subsidiary, Mine Waste Solutions, has been ordered by the South African National Nuclear Regulator (NNR) to stop depositing material on its existing mine dumps.

The company said: "The directive may be lifted by the NNR upon the company demonstrating its compliance with the terms of the directive."

## FOR SALE

### Ship Loader – Conveyor System

#### Basic information:

225m long and 1000mm wide.

Designed to operate in harsh weather conditions.

Three separate sections, loading end has adjustable length.

Frame is made from galvanised steel.

Loading capacity is 400 tons/hour.

For further information contact us via phone +354 421 6293 or e-mail [nama@namaltd.co.uk](mailto:nama@namaltd.co.uk)

**North Atlantic Mining Associates Ltd.** Flugvallarbraut 936 – 232 Reykjanesbær - Iceland





### JAVKHLANT FARM IN

Xanadu Mines Ltd has finalised a farm-in agreement on the Javkhant coal project in the Gobi Altai province of Mongolia. The deal is part of Xanadu's strategic alliance with the commodity trader Noble Group Ltd. The earn-in will be undertaken via Ekhgovin Chuluu LLC (EC), the joint venture vehicle established to develop coking coal opportunities. Under the agreement, EC can earn up to 80% of the 1,000km<sup>2</sup> Javkhant exploration licence by meeting various spending commitments over a two-year period. These include up to US\$230,000 on drilling to earn the first 60%, followed by a commitment to complete a JORC resource to earn a further 20%.

### DUE DILIGENCE AT TIOUIT

AIM-quoted Kefi Minerals plc has been granted a five-month period of exclusivity to carry out due diligence investigations at the Tiouit gold-copper mine in Morocco. The exclusivity was acquired by Kefi for US\$250,000 from the Moroccan company Roche Invest SARL. A non-JORC compliant report in February estimated that the three tailings dams at Tiouit contain some 460,000t at 3-4g/t gold and 20-30g/t silver. Significant potential also remained in remnant ore in the underground mine.

### DRILLING AT CALANDRIA

Mariana Resources Ltd has reported encouraging intersections from 17 holes in the quarter to end-June (totalling 2,669m) at Calandria Norte on its wholly-owned Las Calandrias gold-silver project in southern Argentina. For example, hole CND250, into breccias in La Morena trend, intersected 0.6m at 68.1g/t Au and 107g/t Ag from 59m. Chairman John Horsburgh said that 73 diamond holes had been drilled at Calandria Norte for 10,586m.

### SHREE-GRANGE DEAL

Shree Minerals Ltd has signed a memorandum of understanding with Australian magnetite producer Grange Resources Ltd. The two companies plan a strategic alliance to facilitate development of Shree's Nelson Bay River iron-ore project. This would be facilitated by improved access to Grange's existing infrastructure and an increase of 150-300,000t/y in the 2.0Mt/y iron-ore pellet production at Grange's operations in Tasmania.

## Stratex announces Megenta intersections

STRATEX International plc has reported the first results from an initial 3,000m drilling programme at its Megenta hot spring epithermal gold discovery in Ethiopia.

The deposit is located within the company's Tendaho Exclusive Exploration Licence (EEL) in the Afar region.

Megenta is one of four discoveries of epithermal gold mineralisation made by Stratex within the Afar joint-venture area (the others being Akehil, Asal and Dimoli), as well as at its wholly-owned Blackrock property.

From the first 11 drill holes (2,260m) at Megenta, the company said that selective sampling has indicated "broad zones of gold anomalism". These continue for up to 200m below gold-bearing structures at surface.

Stratex has also reported more



focused intersections across banded silica veins (with assays yielding up to 4g/t Au).

Stratex said the results highlight "considerable potential for a significant system at depth", for which the programme would continue to test.

The best results include 33.3m grading 0.54g/t (hole MG-DH-9).

Stratex's executive director for East Africa, David Hall, said "the veining is dominated by calcite, which tells us we are still above the boiling zone

where one may find bonanza grades that we know exist in the district from our work at Blackrock".

This initial drilling programme is being financed by Thani Ashanti as part of its 51% earn-in on the Tendaho EEL.

Thani Ashanti is a joint venture between AngloGold Ashanti Ltd and Thani Emirates Holdings Ltd for exploration in Egypt, Eritrea, Ethiopia and Djibouti.

AngloGold-Thani find at Hodine (Apr 28)  
Read more: [www.mining-journal.com/26602](http://www.mining-journal.com/26602)

## Randalls upgrade for Integra

INTEGRA Mining Ltd has completed open-pit ore-reserve estimates for its Randalls gold project in Western Australia.

This includes a preliminary estimate for the recent Majestic discovery, and comes less than one year after the first gold pour at the mine, which achieved commercial production four months ago.

Integra is targeting an annual output of 100,000oz from an upgrade of the processing facility at Salt Creek to a throughput of 1.0Mt/y (expected to be

completed next month). A further increase, to an average 120,000oz/y, is expected when high-grade underground production begins.

Integra's managing director, Chris Cairns, said: "While the highly profitable six-year mine life on open-pit ore reserves alone is very robust, the real value driver will be the outcome of trial underground mining at the high-grade Cock-eyed Bob deposit later this year."

Total open-pit ore reserves at Randalls are now given as 6.0Mt at 2.5g/t, for

480,000oz. This figure includes an updated open-pit ore reserve for the Salt Creek (150,000oz) and Maxwells (144,000oz) deposits, and a preliminary ore reserve for the Majestic (98,000oz attributable) and Harry's Hill (86,000oz) open pits.

The estimated aggregate cash cost of production is US\$685/oz, confirming Integra's position, said Mr Cairns, as one of Australia's most profitable gold miners.

Randalls declaration (Apr 8)  
Read more: [www.mining-journal.com/263198](http://www.mining-journal.com/263198)

## Toka Tindung positive

RESULTS from the second tranche of drilling at Archipelago Resources plc's 95%-owned Toka Tindung gold project in North Sulawesi, Indonesia, are described as "very encouraging".

The reverse-circulation drilling is part of a two-year, US\$30 million, exploration programme testing extensions to gold mineralisation at the five deposits that currently comprise the project (Bone, Jipang, Makassar, Blambangan and Toka).

Holes that encountered 'significant' mineralisation (over 3g-m), included 17 of the 26 holes assayed at Bone, 20 of the 40 holes at Jipang, 8 of the 12 holes at Makassar, 7 of the 19 holes at Blambangan South, 15 of the 20 holes at Toka North, 13 of the 23 holes at Toka Pit, and 5 of the 6 holes assayed at Toka East. In total, 133 additional holes have been drilled for a total of 17,970m.

Archipelago said drilling and assaying is continuing, and

described itself as "very encouraged by these initial, generally high-grade intersections from around the smaller deposits and continuing greater high and medium-grade zones within extensive lower-grade envelopes from around the Toka Tindung deposit."

The company confirmed that it "looks forward to a positive revision of the project's resources and reserves in the latter half of this calendar year".

The project currently contains a JORC-compliant resource of 1.75Moz (gold equivalent), of which 1.1Moz is initially mineable by a series of open pits feeding a central processing plant.

Production started in April and is currently ramping up to full production by the end of this year, with output targeted to reach an average 160,000oz/y (gold equivalent) for the first six years of the current eight-year life.

## Ophion prospect for DML

BRISBANE-based Discovery Metals Ltd (DML) has reported the latest results from drilling on its wholly-owned prospecting licences in the Kalahari copper belt in north-western Botswana.

A 26-hole programme (18 diamond and 8 reverse-circulation drill holes) has been completed at the Ophion prospect within the mid-Kalahari zone. Intercepts (OPRC series) include 6m at 1.2% Cu and 12g/t Ag (hole 1219), 3m at 2.1% Cu and 20g/t Ag (hole 1215) and 15m at 0.6% Cu and 6g/t Ag (hole 1221).

The site is 40km from DML's 100%-owned Boseto copper project, which is scheduled to start production early next year. The mine is expected to produce 36,000t copper and more than 1Moz silver per annum over a 15-year life.

DML managing director Brad Sampson said the drilling at Ophion suggested "multiple layers of copper-silver mineralisation". Exploration at the mid-Kalahari zone, including at Ourea, Gaia, Kronos and Notus, was ongoing.





# Boston Shaker boosts Tropicana

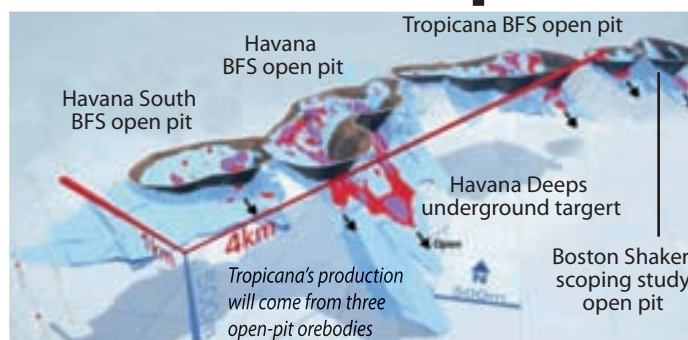
THE ore reserve estimate for the Tropicana gold project in Western Australia has increased by 540,000oz.

The project, 330km east of Kalgoorlie, is part of the Tropicana joint venture owned by AngloGold Ashanti Australia Ltd (70%) and Independence Group NL (30%).

The latest mineral resource and ore reserve estimate at Tropicana reflects recent increases in the gold price and changes to the resource model through increased drill density in the Havana South and Boston Shaker zones.

AngloGold reported this week that the measured, indicated and inferred mineral resource at Tropicana had increased to an estimated 78.6Mt grading 2.12g/t Au (containing 5.36Moz of gold), while the ore reserve estimate jumped to 56.4Mt grading 2.16g/t Au (3.91Moz).

AngloGold said that the increased ore-reserve estimate was primarily due to the inclusion of the Boston Shaker pit,



which added 243,000oz, and conversion of inferred resources into an 'indicated' status at Havana South, which added a further 257,000oz. The use of higher gold prices also had a positive impact (US\$1,100/oz to US\$1,600/oz for the calculation of resources, and US\$880/oz to US\$1,100/oz for reserves).

The majority of drilling included in the estimate was infill drilling and, as such, the change to the mineral resource estimate was relatively small (largely reflecting an increase in the gold price and reduction in the cut-off grade).

Drilling is continuing in the Swizzler area (between the Tropicana and Havana pits) and at Havana Deeps.

A pre-feasibility study is being carried

out on open-pit and underground mining options at Havana Deeps.

Development of the Tropicana project was approved in November last year. The project was to produce 470,000-490,000oz/y in its first three years of production, and an average 330,000-350,000oz/y over the life of the operation (estimated to be at least 10 years).

Cash costs were forecast to be A\$580-600/oz in the first three years. The capital cost, including pre-production expenditure, is estimated to be A\$690-740 million.

The project remains on schedule to pour first gold in the December quarter of 2013.

# Brazilian Gold's Sao Jorge boost

AN INDEPENDENT preliminary economic assessment for the Sao Jorge gold deposit in northern Brazil has designed a potentially viable open-pit operation, prompting Brazilian Gold Corp to commission a prefeasibility study.

The assessment, by consultant Coffey, was based on historical data generated before August 2008.

Coffey forecast average annual gold production of 52,900oz/y for eight years, using standard drill-and-blast open-pit mining at a nominal rate of 11Mt/y.

The mine would feed a standard gold-treatment plant, comprising crushing, grinding, gravity concentration, thickening and carbon-in-leach processing to produce doré.

Initial capital costs were estimated at US\$114 million, and sustaining capital was put at US\$12.4 million. Cash operating costs for the mine and plant were estimated at US\$16.36/t processed.

Brazilian Gold has an option to buy a 100% interest in the property from Talon Metals Corp.

# CDC reveals Basay confirmation

ASSAY results from initial drilling at Copper Development Corp's (CDC) 70%-owned Basay copper project on Negro Island, in the Philippines, have "confirmed the deposit's world-class potential", according to CDC chief executive Mitch Alland.

Five diamond-drill rigs are operating at Basay (which operated for four years until 1983), with another five rigs being transferred from the company's Hinoba-an property, 25km away. Ten holes have been drilled, totalling 5,000m of an 18,615m programme.

Intersections from the first three holes include 348m grading 0.60% Cu (111m of which had an average grade of 1.01% Cu) in hole BSM001 (separately reported at the end of May), and 174m grading 0.81% Cu (from hole BSM003).

Drilling is underway to confirm the historic resources, and Mr Alland said visual interpretation of the unreported drill holes "supports the theory that the four known areas of mineralisation at Basay are the corners of a large rectangle that are part of a much larger system".

A JORC-compliant resource is due before end-2011. CDC was listed on AIM in December 2010, raising US\$65 million (US\$47 million of which is still in the bank).

In March this year the company acquired 70% of Basay from Solfotara Mining Corp (which retains a 30% stake) to complement Hinoba-an, where a feasibility study is underway.

CDC has also announced what it described as a "strategic investment" in Crazy Horse Resources Inc. The TSX-Venture-listed company owns the Taysan copper-gold project 100km south of Manila. CDC is acquiring an 11.8% stake by paying C\$5 million in a private share placement.

Taysan has a NI43-101 inferred resource of 944 Mt at 0.23% Cu and 0.11g/t Au, containing 4,720Mlb copper and 3.3 Moz gold (0.10% Cu cut off).

CDC, Crazy Horse and Solfotara were formed by Brian Lueck (CDC's president and chief operating officer) to develop mineral deposits in the Philippines. He told *Mining Journal* that there might now be merit in consolidating the companies.

# North Star resource climbs for Excelsior

AN INDEPENDENT resource estimate has upgraded and expanded the oxide portion of the North Star copper deposit, part of the Gunnison property in Arizona, for Excelsior Mining Corp.

The consultant, Independent Mining Consultants Inc, calculated indicated resources contained about 1.46Mt of copper, with an additional 400,000t in the inferred category, both at a 0.1% Cu cut off.

Using a 0.3% Cu cut-off grade, the indicated oxide resource was estimated to contain about 0.95Mt copper, while inferred resources at the

Category	Tonnage* (Mt)	Cu* (%)	Tonnage* (Mt)	Cu* (%)
Indicated	464	0.31	215	0.44
Inferred	144	0.28	45	0.47

\*Using a 0.1% Cu cut-off grade

+Using a 0.3% Cu cut-off grade

higher cut-off grade were estimated to contain about 200,000t copper.

Excelsior holds an option to buy a 100% interest in Gunnison, as a result of a reverse takeover with AzTech Minerals Inc last year.

# Outotec



# Innovation for sustainable solutions

www.outotec.com

## Career gap

**F**OR the first time in many years, Kim Harris is taking a break. She has stepped down from the company she built over the past 16 years, Midlands Minerals Corp (MMC), following a hostile proxy fight with a group of dissident shareholders.

She was president and chief executive of MMC, which is listed on Toronto's Venture Exchange, and says she is enjoying "being free of the tremendous responsibility of being chief executive of a company with operations in Canada, Ghana and Tanzania".

But it seems it won't be long before she is back in business. MMC originally was an offshoot of Sika Resources Inc, which Ms Harris set up in 1996 and has remained a private company. "We have a lot of experience in Africa and there are still many prospective parts of Africa. I expect to use the experience I have gained over the years to move Sika forward," she says.

Her African experience started in earnest in the early 1980s after the Ontario government, concerned that 90% of its exports went to the US, set up Ontario International Corp (OIC) to assist locally-based businesses pursue export opportunities outside the US.

Ms Harris was one of a group of hand-picked people to be recruited, and became OIC's director for Africa. As it was a new organisation "that was an exciting time in my life – I had to create my own job, write my own job description and devise my own business plan".

Her previous experience (working for Ontario's Human Rights Commission and then the Ontario Management Board Secretariate, where she had responsibility for economic development portfolios) had convinced her that, as far as African business was concerned, high-level government contacts were vitally important.

And, with possible funding in mind, she also decided to develop good relationships with people at the African Development Bank, as well as the World Bank and its commercial offshoot, International Finance Corp.

She recalls that, at OIC, "I was fortunate to report to people who became my mentors, who took me under their wings. They helped me by opening doors to important people I needed to know, and those contacts have served me well."

### AFRICAN SUCCESS

Her efforts brought considerable success. She mentions the creation of the Ghana Stock Exchange, in which she played a key role. Most of her work in Ghana was in the power sector with Ontario companies led by Acres International and Ontario Hydro.

Ontario-based MacLaren Engineers, part of SNC Lavalin, built roads in Accra. There was also the Phong Farm project at the Phong Dam in Ghana, where an area flooded as a result of the rehabilitation of the

dam was used to grow rice with help from Acres International.

GM Diesel Division rehabilitated railways in Zimbabwe and sold locomotives to Zambia.

"In Uganda, our Ontario team, led by Acres International, literally turned on the lights, building substations and transmission lines following rehabilitation of the Owen Falls Dam and the Murchison Falls Dam," she says.

Ms Harris saw the potential for sales of mining equipment from Ontario and started to visit conferences and exhibitions to talk to manufacturers about turning their attention to African markets. She organised visits to Africa for mining equipment producers, taking in four countries at a time. "Then, in 1996, I realised this was becoming interesting and that I should do it for myself," she says.

### GOING IT ALONE

She discussed her ideas with one of her mentors, Alfred Powis, then chairman and chief executive of Noranda Inc, who encouraged her to go ahead. When she set up Sika Resources, he became chairman and one of the first to invest in the company. Mr Powis remained chairman of MMC until his death in October 2007.

Ms Harris says Sika at the outset was a typical small family company, where the paperwork was done on the kitchen table and with the whole family, her three children and husband, helping out. And all working for no pay. Financing came mainly from their own pockets, and from family and friends.

Sika first focused on Zimbabwe where Ms Harris was born – in Salisbury in what was then called Rhodesia.

She went to high school in Nigeria and, because virtual civil war was raging in Rhodesia, she completed her secondary education at the Canterbury Girls Grammar School in England before moving to Canada to go to university there. She has long been a Canadian citizen.

In Canada, at the Simon Fraser University in British Columbia, she was awarded her BA in political science, sociology and anthropology. She went on to get a MA in urban sociology from the University of Toronto, an international management certificate from the School of Business, University of Western Ontario, and an Executive Management Certificate in Programmes for Public Executives from the School of Business, Queens University, Ontario.

In spite of all that, Ms Harris says she will never complete her education as there is always something more to learn and new experiences each day. For example, "I was never involved in a proxy fight before, and I learned a lot from that."

---

"I realised this was becoming interesting and that I should do it for myself"

---

### CORPORATE GROWTH

As Ms Harris had many contacts in Zimbabwe, Sika quickly acquired several properties, including some where the tailings dumps from previous mining could be processed to produce enough gold to cover the cost of exploration work.

MMC was set up in 2000 to be Sika's mine-operating arm as the company had plans to develop an open-pit mine in the Midlands area of Zimbabwe. Financing became progressively more difficult after the 1998 Bre-X scandal, while the following year political turmoil in Zimbabwe followed the government's so-called land reform programme.

So MMC turned its attention to Tanzania, and particularly to the Itilima project which had been earlier acquired by Sika.



Kim Harris





MMC was listed in Toronto in April 2005. Its assets then included the Itilima project, and the Kwahu Praso property on the northeastern end of the Ashanti Gold Belt in Ghana. In 2006 it acquired 65% of the adjacent Sian project. Today these remain MMC's prime assets.

Like many other junior companies, MMC suffered during the global economic crisis in 2008-09. Ms Harris and her husband used personal funds to keep the company running "while also fighting various attempted opportunistic, zero premium takeovers".

As for the events leading to the recent proxy battle, Ms Harris admits she could have done a better job of managing market expectations after MMC raised C\$8.2 million in February last year.

"The market expected frequent news releases after the financing but we were held up because we had to analyse the results of a VTEM geophysical airborne survey, interpret all the data and then do compilations of the underlying geology, all the geochemistry and the geophysics to identify good drill targets," she says.

## DISSIDENTS TAKE OVER

Her feelings about leaving the company she founded were the same as when the dissidents made their first move. "I felt there are other people out there who believe the company is very undervalued. To take the action they took, it was a clear indication that the dissidents saw value in our properties."

However, Ms Harris says the dissidents "could have done things differently to reach the same end".

Nevertheless, "If they do a better job it will be good for all shareholders, including me."

The dissidents were led by BayFront Capital Partners Ltd, a speciality investment banking group. Something of a compromise seems to have been reached, albeit with the balance of power tipped in the dissidents' favour, for, following MMC's annual meeting on July 1, BayFront had four of its nominees on the board while two of the previous directors remained in place.

Although BayFront indicated publicly that it hoped Ms Harris would stay on as CEO, she stepped down ahead of the meeting. MMC's media release said: "After building Midlands since its inception in 2000, Kim Harris is stepping down from her position as president and CEO effective June 30."

And: "The new board of directors would like to thank Ms Harris for her numerous years of service in founding and guiding the company through its formative years."

**"If they do a better job it will be good for all shareholders, including me"**

It added that Ms Harris would act as a consultant for MMC to "provide assistance with respect to government relations with Midlands' joint-venture partners and in connection with the transition of the board of directors".

The proxy battle didn't go down well with MMC's local partner in Ghana, Sian Goldfields, which, ahead of the MMC meeting, warned the dissidents not to attempt to raise money "using the merits of the Sian project" because "we intend to distance ourselves from any of their activities. Indeed, Sian Goldfields will use all legal remedies available to it under Ghanaian law to prevent the takeover of our gold property."

The compromise reached apparently did not satisfy Sian Goldfields. On July 4, MMC reported it had received another letter from its partner, "purporting to terminate their joint-venture agreement". MMC said it had taken legal advice in Canada and Ghana, and Sian Goldfields had no valid reasons for taking action. MMC wanted to quickly resolve the issues being claimed by Sian Goldfields.

## PERSONAL EXPECTATIONS

Ms Harris says Sian Goldfields' move was to be expected because it did not know the new MMC board members and "in Africa, personal relationships are very important indeed".

She suggests that recent pressure in developing countries for indigenisation of mining projects, for higher royalties and bigger shareholdings for local companies springs from "a feeling that foreign companies come in to acquire properties with local joint venture partners they then proceed to ignore. They raise millions on a property and local partners see none of the money. But I now see more and more companies paying more attention to community and social responsibility issues, and that is good for Africa."

Ms Harris remains optimistic that the issue with MMC's Sian partner will be resolved to allow what is a highly prospective gold project to move forward. Meanwhile, she will be "growing Sika Resources with a focus on African gold projects".

## PEOPLE & APPOINTMENTS people@mining-journal.com

### ■ FOUNDER OF MINESITE DIES

Veteran journalist **Charles Wyatt**, 74, died last Wednesday, July 20, following a hard-fought battle with cancer. Mr Wyatt formed *Commodity Watch* (a provider of news and events, including the Minesite forum) in 2000 after an acrimonious departure from the *Financial Times*, where he was the mining correspondent. Minesite is now owned by Rivington Street Holdings, for whom Mr Wyatt has been a popular columnist.

### ■ BAKKER ON BOARD

African Mining & Exploration plc has appointed **Ebo Bakker** as head of exploration, with effect from August 15. He will be based at the company's West African headquarters in Bamako, Mali. Mr Bakker, a Dutch national, is a geologist with over 30 years' experience in diverse geographical areas across Europe, North America and West Africa. In addition to his extensive field geology experience, Mr Bakker has been involved in business case evaluations for mining and exploration opportunities.

### ■ PAN AFRICAN APPOINTS MALABIE

**Phuti Malabie** has joined Pan African Resources plc as a non-executive director. Ms Malabie's appointment follows the resignation of Rowan Smith from the position. Ms Malabie is the chief executive officer of Shanduka Group Ltd, which she joined in 2004 as the managing director of a wholly-owned subsidiary, Shanduka Energy Ltd. Ms Malabie was previously the head of the South Africa project finance unit at the Development Bank of Southern Africa.

### ■ EXCELLON HIRES DUO

Excellon Resources Inc has hired **Jeremy Wyeth** as the new president and chief executive officer of the company, while also appointing **Steve Poad** as chief financial officer. Mr Wyeth has held several technical, operational, managerial and project-development positions in the mining industry over the past 25 years. His international experience covers Africa, Canada, Russia and Brazil. Mr Poad has over 30 years of industry experience with a variety of companies, including the Falconbridge Group, now part of Xstrata.

### ■ GOLD HAWK ASSIGNS DIRECTORS

Gold Hawk Resources Inc has appointed **Mark Forsyth** and **Gregory Radke** to the company's board of directors. Mr Forsyth has spent 25 years working in commodity trading houses, and has been based in Zug, Switzerland, for the past nine years (he was head trader at Marc Rich & Co Investment AG for seven years). He recently worked with the Trafigra Group where he was senior trader in Luzern, and at the end of last year formed his own consultancy company, Cliveden AG. Mr Radke is general counsel for Pala Investments, based in Zug, and is a director of Coalcorp Mining Inc and Churchill Mining plc.

### ■ GLENCORE HIRES SMITH

Glencore International plc has hired **Paul Smith** as investor relations manager. Mr Smith, 40, joins the company from Marshall Wace Asset Management Ltd. Mr Smith spent six years at the London-based hedge fund manager as an analyst and portfolio manager covering natural resources. Mr Smith replaces **Nicholas Bias**, who left the commodities trader in May after less than four months in the role.

**Register to receive our  
fortnightly People & Appointments  
recruitment newsletter at  
[www.mining-journal.com/newsletter](http://www.mining-journal.com/newsletter)**



# All the mining industry information you need

- 175 years as the leading source of industry information
- International editorial team reporting on news from around the globe
- Regular special reports and supplements focusing on specific countries or commodities
- Weekly journal delivered direct to your door, regular eNewsletters, unrestricted online access
- Complimentary subscriptions to *Mining Magazine* and *Mining, People and the Environment*



To find out more about subscribing to *Mining Journal*

Call our hotline on +44 (0)20 8955 7050 • E-mail us at [info@mining-journal.com](mailto:info@mining-journal.com) • Visit [www.mining-journal.com](http://www.mining-journal.com)



# minor metals

## Quiet time

July is traditionally the start of the holiday period, with many works, particularly in the northern hemisphere, on or preparing for summer shutdowns

AS A result of the start of the traditional summer holiday period in the northern hemisphere, minor metals markets were relatively subdued in July, although some of the metals saw more interest as prices recovered a little.

■ **Antimony**, in particular, picked up again in price as producers in China raised offers ahead of an anticipated consumer rebound after the summer period. Prices had risen to all-time highs around US\$17,000/t in March before retreating as business waned in Europe, the main consumer market.

More recently offers as low as US\$13,500/t had been seen again, although this appears to have been the bottom of the market for the time being.

Consumer business has remained scarce due to the closure of major antimony trioxide producers in Europe. However, market participants are expecting a rebound in August in preparation for a September restart.

Accordingly, cheaper offers were taken up and Chinese suppliers have started looking for higher prices again.

As the market turned in July, many looked to cover earlier sales or to rebuild stock positions, and the bullish mood was boosted by the return to the market of a major Korean consumer.

Offers moved back up close to US\$15,000/t but, towards the end of the month, buying interest seemed to ease again and there were many offers around US\$14,500/t.

■ **Arsenic** remained static, with offers from China in the range US\$1,300-1,400/t CIF, but there was almost no buying interest at all.

■ **Bismuth** prices increased a little in July on steady buying interest and the marked reluctance of Chinese suppliers and Western refiners to sell at levels below US\$12.00/lb.

As a result, the business being concluded was all at, or above, the US\$12.00/lb level.

■ **Cadmium** was really suffering from the summer blues, although there was a strong feeling that the published quotations were being manipulated downwards to facilitate buying in at lower levels.

There was talk of prices as low as US\$1.10/lb, but very few sellers at these levels could be found, with most holding out for prices still in the range US\$1.20-1.40/lb with the result that there was actually very little business being concluded.

■ **Cobalt** continued to slide, with offers for low grade close to US\$15.00/lb and around US\$16.00/lb for the higher-grade material.

59 <b>Co</b> cobalt 27	59 <b>Ni</b> nickel 28	63.5 <b>Cu</b> copper 29	65 <b>Zn</b> zinc 30	70 <b>Ga</b> gallium 31	73 <b>Ge</b> germanium 32	75 <b>As</b> arsenic 33	79 <b>Se</b> selenium 34
103 <b>Rh</b> rhodium 45	106 <b>Pd</b> palladium 46	108 <b>Ag</b> silver 47	112 <b>Cd</b> cadmium 48	115 <b>In</b> indium 49	119 <b>Sn</b> tin 50	122 <b>Sb</b> antimony 51	128 <b>Te</b> tellurium 52
192 <b>Ir</b> iridium 77	195 <b>Pt</b> platinum 78	197 <b>Au</b> gold 79	201 <b>Hg</b> mercury 80	204 <b>Tl</b> thallium 81	207 <b>Pb</b> lead 82	209 <b>Bi</b> bismuth 83	[209] <b>Po</b> polonium 84
[268] <b>Mt</b> meitnerium 109	[271] <b>Ds</b> darmstadtium 110	[272] <b>Rg</b> roentgenium 111					

The cobalt market is very quiet, and many expect these levels to be close to the bottom with prices improving as the summer holidays come to an end.

In China, producers of some cobalt chemicals have requested export tax rebates from the government to promote sales to overseas battery producers.

**"Mercury continued as the strongest of the minor metals despite there being little activity due to limited availability"**

These suppliers are also suggesting that the government add cobalt to the metals stockpiled in its strategic reserves, indicating that there are surplus stocks in China. As a result, imports of concentrate and ore are expected to be flat for the next few months after a 10.3% drop in June, when imports reached 33,953t, up 33% year on year. The half-year total was up 3.2% to 185,925t.

■ **Gallium** prices eased down towards US\$800/kg, while **germanium dioxide** remained around US\$1,250/kg in what were very quiet markets with almost no activity.

■ **Indium** prices initially slumped further in July due to the quiet markets in US and Europe, although renewed consumer interest in Southeast Asia may soon provide a floor.

Prices fell below US\$700/kg with offers from China in particular as low as US\$680/kg.

The market steadied, however, on hints of stronger demand in the flat-panel sector in Korea and Japan as manufacturers begin to boost production in time for seasonal sales at the end of the year.

Demand for high purity metal in the solar sector, where indium is used in copper, indium, gallium and selenium (CIGS) semi-conductor compounds also remained strong, and by the end of the month offers were back up in the US\$730-780/kg range.

■ **Mercury** continued as the strongest of the minor metals despite there being little activity due to limited availability.

Prices were reported to have moved higher into the range US\$2,400-2,600/flask on continuing strong demand, particularly from the gold-mining industry in Asia, South America and Africa.

This mercury is mostly used by artisanal miners in small quantities, but with the high price of gold expected to continue, due to the current world economic crisis, the demand for mercury should remain strong.

This is in spite of availability having been severely reduced as a result of the European Union export ban introduced earlier in the year.

■ **Selenium**, having slipped back below US\$60.00/lb, looked like making a recovery earlier in the month as interest from China and India returned.

However, although prices initially moved back up above US\$60.00/lb, the interest subsided and prices settled again just below this level.

■ **Tellurium** remained quiet, with only sporadic buying interest in the range US\$300-350/kg.

# Emerging Europe

As the eastern European countries of Bulgaria, Romania and Albania continue to grow out of the 2008 global recession, a modern mining sector is beginning to take shape in the region



Once a powerhouse of coal, gold and chromium production, these countries are once again placing themselves on the map of European minerals output.

Developments could be stalled, however, as the debt crisis in nearby Greece threatens to spill over into the region. Earlier this month the European Bank for Reconstruction and Development warned that the Greek crisis could push the region back into decline.

Most countries continue to face fiscal challenges, although countries with IMF programmes have generally managed to stay on track, the bank said in its July quarterly report.

Despite the challenges, the region is attracting foreign direct investment, and the potential of its underdeveloped mining sectors is proving particularly attractive.

## Albania: Rising up

### FAST FACTS

<b>Capital:</b>	Tirana
<b>Population:</b>	2.9 million
<b>Currency:</b>	leke
<b>Government:</b>	parliamentary democracy
<b>GDP real growth rate:</b>	3.5% (2010 est)

### BY SOKOL MATI

**T**HERE remains significant mineral potential in Albania, and the country's mining sector has been growing in recent years as a result of the combined effect of large investment in the sector, structural reforms to the country's mining industry and rising metal prices. As a result, mining contributed 7.7% to Albania's GDP last year.

The sector has historically been dominated by four minerals (chromium, copper, iron-nickel and coal) that accounted for more than 90% of mineral production, and since the industry's crash in the 1990s, production of these minerals has been steadily rising again.

Mined production has been increasing at a rate of roughly 10% year-on-year, although this year copper production is anticipated to triple following significant investment in the sector.

The sector is now characterised by the growing presence of junior mining companies, exploring, in particular, for copper and chromium.

### MINING POLICY

Albania is a country rich in mineral resources and with a great deal of possibilities for both exploration and profitable exploitation.

During the past 50 years there has been a considerable growth in geological exploration and research. As the sector has become privatised, so the government has been working to improve the business climate.

Reforms undertaken by the government include registration of businesses through the establishment and operation of a National Registration Centre, the introduction of a National Licensing Centre and

reducing administrative barriers by improving the regulatory framework, as well as inspection reform, fiscal reforms and electronic government.

The mining industry is being given top priority for the country's economic development.

The mining policy is intended to:

- Create an investment environment in which appropriate international investors can start the production and bring the sector to its economic potential;
- Stimulate the transfer of technologies and knowledge;
- Promote and sustain the value added policy for the mining sector on treatment of minerals and increase the value of minerals, profit and employment in the country;
- Promote the development of modern infrastructure and generate valuable foreign exchange earnings;
- Make the mining sector a core industry able to stimulate sustainable economic development; and,
- Help creation of jobs, reduce poverty, and become a major contributor to the macro-economy, local-community development.

Albania's mining law was enacted in 1994 with the primary aim of attracting foreign investment to the country.

The law applies equally to both foreign and domestic investors and is administered by the Ministry of Economy, Trade and Energy.



The law grants up to 100% foreign ownership of mineral concessions, with a NSR royalty of 2% (although tax holidays may be negotiated for new mines) and some duty-free concession on imports of goods and equipment.

### LATENT POTENTIAL

Mines have recently been developed for chromium in the northeast of the country (Tropoja Kukes massif), while exploration is also taking place for copper in the Mirdita- Puka area and for nickel in the Kukes area.

There is significant potential for the nickel industry, which has been under pressure in regional market owing to a lack of plant capacity in Albania (the country has a monopoly for nickel within the Balkan region).

The future direction of Albania's mining sector is being guided by the European Commission's strategy for minerals, mining and sustainability. However, the sector continues to face a number of challenges, which include price and trade fluctuations, but its development could be a significant economic boost for Albania.

The Balkans can supply more than 50% of Europe's production of bauxite and nickel, as well as more than 30% of its chromium and 20% of its copper, making the region a significant resource base for the European Union.

### RECENT ACTIVITY

Albania has an active domestic exploration sector, particularly for chromium, but is also attracting investment from international junior mining companies exploring for copper, gold, chromium, nickel, iron-nickel and rare earth minerals.

Recent exploration activity has outlined resources that include a potential 2.7Mt of copper, 2Mt of chromium and 130Mt of iron-nickel.



Tirex Resources is exploring the Mirdita district



Tirex Resources Ltd announced earlier this year that it plans to begin near-term production at its Mirdita VMS project and has signed a memorandum of understanding with Ekin Maden Tic Ve San AS, Turkey's leading non-ferrous metals and minerals trading company.

Under the terms of the MOU, each company will hold a 50% stake in the operating company developing the project.

**"The Balkans can supply more than 50% of Europe's production of bauxite and nickel, as well as more than 30% of its chromium and 20% of its copper"**

The property is believed to have historically produced in excess of 3Mt of copper.

Tirex also plans to continue with the first ever modern, large-scale exploration of the Mirdita district, targeting the discovery of major VMS deposits. The company's district-scale exploration programme is funded, in part, by the European Bank for Reconstruction and Development.

Volcanic Metals Corp is looking to develop the Gjegan copper project in northern Albania following its acquisition of the private Albania company Cougar Mining SH PK in 2008.

The company has been evaluating historical data

on the property released by the Albanian government, as well as conducting preliminary exploration work.

Empire Mining Corp meanwhile is working towards developing the Bulqiza chromite project in the Bulqiza Massif of northern Albania, a historical chromite mining district.

Over the past 50 years the region has produced in the order of 20Mt of high-grade chromite ore.

Empire has estimated a chromite content of between 33% and 48% Cr<sub>2</sub>O<sub>3</sub> at the project and says it plans to convert the exploration licences to mining licences as soon as possible. The company says it will be more cost effective to develop adits along mineralisation than to carry out surface-based exploration drilling.

The company estimates costs for the next 12 months will be in the order of US\$2.9 million, but with the potential to defray costs from the sale of chromite production and by using contract miners.

Austrian company DCM DECOMetal GmbH has been operating in the Bulqiza Massif since 2007 producing 3,000t of ferrochrome per month. However, earlier this month 700 mine employees went on strike, forcing the company temporarily to suspend operations. The Austrian company has agreed to a 10% wage increase for employees if they return to work.

The operation is based on reserves of 400,000t, and has been mined at a rate of approximately 70,000t/y.

Golden Touch Resources Corp is developing three projects in Albania (targeting chrome, gold and platinum) with its primary focus being the Gjazuq gold project. The company acquired the properties through its purchase of Jab Resources Ltd in March this year.

Golden Touch is currently conducting drilling at the Gjazuq project and the Kukës chromite project with the



*Tirex plans near-term production at its Mirdita project*

aim of producing NI 43-101 compliant resource estimates.

Privately-owned Balkan Resources Inc was developing the Devolli nickel project as a joint venture with European Nickel plc, combining Balkan's Kokogllave and Zemblak licenses and European Nickel's Devolli licence.

However, in January, European Nickel said that Balkan had failed to raise the funds required to fulfil its joint-venture obligations (essentially to complete a pre-feasibility study), and the property is now wholly-owned by European Nickel.

The company says its preference will be to find a new joint-venture partner to develop the project and that it is in discussion with a number of interested parties. European Nickel proposes production from the project of 15,000-20,000t/y of contained nickel over a mine life of 15 to 20 years.

*Professor Mati is director of the Industrial Mining Directorate at the Albanian Ministry of Economy, Trade and Energy*

# Bulgaria: Undergoing reform



## FAST FACTS

<b>Capital:</b>	Sofia
<b>Population:</b>	7.6 million
<b>Currency:</b>	leva
<b>Government:</b>	parliamentary democracy
<b>GDP growth rate:</b>	0.2% (2010 est)

## BY IVAN ANDREEV

**B**ULGARIA'S GDP grew slightly in 2010. According to data compiled by the country's National Statistical Institute (NSI), GDP reached a nominal value of Lv70.43 billion (US\$47.7 billion) in 2010, an increase of just 0.2% on 2009.

The industrial sector represents 31.2% of the total value added to the economy, an increase of 0.5 percentage points from 2009, while the mining industry comprises 5% of the country's GDP.



The overall index of producer prices in industry (in both the domestic and the international market) showed a 12.1% annual increase in January 2011, with the largest increase being registered in metal prices.

In the domestic market, producer prices rose by 1.1% in January 2011, compared with January 2010. The extractive industry reported a 15% price increase, while NSI reported a 25% price growth in metallurgy.

Bulgaria's mining industry provides direct employment to approximately 30,000 people, as well as indirect employment opportunities for satellite industries to approximately 120,000 people. In 2010, the total output of extractive industries is estimated at



Lv3.3 billion, 11.5% more than 2009.

In 2010, Bulgaria's Economy Ministry collected Lv37.5 million in revenues from mining concession fees, according to the annual report of concession committees, as the total number of mining concession administered by the Ministry of Economy and Energy rose to 133 by the end of the year.

The figure is Lv5.6 million higher than the amount secured in 2009. More than Lv11 million of the proceeds were transferred to local municipalities.

Earlier this month, Moody's Investors Service upgraded Bulgaria's government debt ratings to Baa2 with a stable outlook from Baa3, as part of a long-

## NEW MINING LAW

At the end of 2010 the National Assembly voted in significant changes to the law on mineral resources.

The new law, which constitutes a single authority for the management of mineral resources; has led to significant streamlining of the procedures for prospecting, exploration and control of mineral resource concessions.

In June 2010, the government also began the development of a national policy and strategy for mineral resources.

Further changes to the law are expected at the end of 2011, following the implementation of the national strategy, which is set to include improvements in the methodology for calculating concession fees; simplification of land expropriation procedures and elimination of illegal mining.

anticipated review. The credit agency said the improvement reflects the country's ongoing fiscal discipline and improving institutional strength.

Moody's said the upgrade was motivated by three factors: effective fiscal consolidation, strengthened institutional capacity and strong liquidity and capital buffers.

## ENERGY STRATEGY

Bulgaria's energy production is dominated by lignite coal reserves, with around 90% of deposits displaying the right characteristics for open-pit mining. According to the BP Statistical Review of World Energy (2011), Bulgaria has coal reserves estimated at 2,360Mt.

The country produced 4.8Mt of coal in 2010, a 5.8% increase on 2009, according to BP, but it also consumed 6.6Mt (a 4.8% increase) the statistics show. Around 97% of Bulgaria's coal production is used for domestic power and heat production.

Electricity production in the country has been dominated by large thermal-power plants using coal (55% in 2009) since the closure of the Kozloduy nuclear power plant in 2007.

The main domestic resource is lignite coal from the Maritsa East coal basin.

State-owned Maritsa Iztok Mines operates three producing mines (Trojanovo 1, Trojanovo North and Trojanovo 3) in this East Maritsa basin, supplying coal to three domestic thermal power plants for electricity production and a factory for briquette production. In 2010, the firm produced 27Mt of lignite, and estimates that it has reserves for 50 years more of production.

In addition, Enemona JSC was last year permitted by



the Bulgarian cabinet to explore mineral resources in the Momin Brod area, where the Lom lignite deposit is located.

Uranium has also historically been mined in Bulgaria, and the country was an established uranium producer until around 1995. It is estimated that more than 70% of the country's known uranium deposits are suitable for mining.

In June last year the Ministry of Economy, Energy and Tourism announced Bulgaria's energy strategy to 2020, which is designed to align the country with Europe's wider 2020 energy and resources strategy.

As part of the strategy, the government aims to reduce greenhouse gas emissions as well as the reliance on gas and coal by increasing the use of nuclear and renewable energy sources to 16% of the total energy mix.

## METALS AND MINERALS

Historical exploration has identified mineable resources of around 245 mineral deposits for a range of metal commodities including iron ore, chromite, tungsten, molybdenum, zinc, copper, gold, silver and uranium.

The total output of extracted metal ores for 2010 is estimated at Lvl.2 billion, including copper ores and concentrates, lead, zinc and tin ores and concentrates. The sector is also showing a small amount of growth, last year having employed around 6,250 people, an increase of 2% on the previous year.

Currently there are three companies that produce copper concentrate in Bulgaria. These are the local companies Assarel-Medet JSC and Elatsite Med AD (which operate open-pit mines in the country), while Canada-based Dundee Precious Metals Inc operates the

Chelopech underground mine.

Assarel-Medet is the largest copper producer in Bulgaria, providing over 50% of the national production of copper.

Earlier this year the first 130t of copper-cathode (with a purity level of 99.99%) was produced from the trial operation of the company's new solvent-extraction and electro-winning facility, which was officially opened at the end of May by the Bulgarian prime minister.

The plant has a production capacity of 1,500t/y of copper cathode and its construction also included the reconstruction and upgrade of the existing installation for microbiological-leaching. The upgrade has also served to improve the economics and environmental efficiency of the operation.

Elatsite Med is a private joint-stock company engaged in mining and processing of copper and gold-containing ores. The company's Elatsite mine is the largest open-pit mine in Bulgaria and is scheduled to continue operating until 2021.

Meanwhile, Dundee Precious Metals' Chelopech mine is one of the largest copper-gold deposits in Europe. It is located west of Chelopech village, on the southern slope of the Balkan Mountains in the Zlatitsa Valley.

Last year the mine produced 27.4Mlb of copper and 65,512oz of gold, although the company is currently partway through an expansion plan to increase mining capacity from 1Mt/y to 2Mt/y and output to 45.7Mlb/y of copper and 128,850oz/y of gold from 2012.

In June, Dundee's subsidiary Chelopech Mining EAD officially opened the upgraded and reconstructed process plant as part of the upgrade programme.

The total cost of the project is estimated at US\$150 million, with the company having spent around US\$95 million to date, including US\$23 million for the process plant upgrade and US\$11 million in the construction of paste-fill plant.

Earlier this year the company also completed a US\$14.5 million long-term loan agreement with Raiffeisenbank (Bulgaria) EAD to be used towards the expansion project.

The loan agreement with Raiffeisenbank concludes US\$81.25 million in long-term debt financing arrangements for the Chelopech expansion, which commenced with the US\$66.75 million financing with the European Bank for Reconstruction and Development and Unicredit Bulbank that was put in place in December 2010.

Ivan Andreev is executive director of the Bulgarian Chamber of Mining and Geology

## Company profile

### CARPATHIAN GOLD

**Carpathian Gold Inc (TSX:CPN) is an exploration and development company whose primary business interest is developing near-term gold production on its 100%-owned Riachos dos Machados gold project in Brazil and focusing on activities surrounding permitting and construction, along with progressing its exploration and development plans, on its 100%-owned Rovina Valley Au-Cu project located in Romania.**

The firm currently hosts NI 43-101 resources of 4.0Moz of gold in the measured and indicated categories and 4.5Moz of gold in the inferred category, as well as

759.1Mlb of copper in the measured and indicated category and 663.1Mlb of copper in the inferred category

The company recently announced an agreement with Barrick Gold Corp for a US\$20 million private placement. The proceeds from this transaction will be used towards expanding the current 2011 drill program at the Ciresata Au-Cu porphyry deposit by an additional 15,000m (from 35,000m to 50,000m), test surrounding targets, release an updated NI 43-101 resource estimate and the on-going pre-feasibility study.

Carpathian is spearheaded by a focused and experienced management and exploration team with years of various disciplines in the mining sector.





# Romania: Awaiting a mining revival

## FAST FACTS

<b>Capital:</b>	Bucharest
<b>Population:</b>	21.9 million
<b>Currency:</b>	lei
<b>Government:</b>	Republic
<b>GDP real growth rate:</b>	-1.3% (2010 est)

**I**N THE years between the first and second world wars, Romania's economy flourished and the country managed to overcome the 1930s recession due to its wealth of mineral resources. Since then, however, the minerals sector has been in decline.

Prior to 1990, the communist regime had imposed an industrial policy focused exclusively on internal resources, leading to the creation of huge production capacities that were no longer related directly to internal demand.

However, decades of under investment has prevented Romania realising the full value of its mineral resources. These policies, and the dominance of state-ownership in the mining sector, continued in Romania until the end of the 1990s.

As a result, the recent global recession caught the Eastern European country at a time when the once-strong mining sector has reached a state of collapse.

## STORY OF DECLINE

Romania's largest gold mine, Rosia Montana, was closed in 2006 as the aging technology meant the operation was no longer competitive.

The closure represented the culmination of decades of decline in Romania's mining sector. Prior to the 1990s, more than 350,000 people were directly employed by the mining sector (65,000 of these people working in non-energy mines). Today, total mine employment is closer to just 45,000.

Only 69 mining operations out of an original 600 were still functioning in 2008, after the government cut subsidies to the non-energy sector and closed many of the country's existing mines.

The governments restructuring of the mining sector continues, with the authorities recently concluding that



the country's large coal mining companies are still operating with losses. As a result a further 10,000 employees of state-owned mining companies could be about to lose their jobs.

In the end, completion of the restructuring process could cost Romania as much as €1 billion (US\$1.4 billion), funds that the government can only obtain by turning to the major international funders, with the disadvantage of increasing Romania's external debt.

However, the National Agency for Mineral Resources



Top: Drilling at Carpathian's Rovina Valley project and below the Rosia Montana mine. Bottom left: Romania's new energy strategy is focused on its coal resources

"Decades of under investment has prevented Romania realising the full value of its mineral resources"



ALS Minerals is the global leader in providing analytical & assay services to the exploration and mining industry

## WE SPECIALISE IN:

- Fast turnaround time for assaying and geochemical analyses
- New lower detection limits for geochemical analysis
- Updated Webtrieve™ on-line and state-of-the-art webdata access system
- ISO 9001:2008 and 17025:2005 accredited analysis methods
- New: continuous core photo; web based and linked to analytical data
- Metallurgical analyses at ALS Ammtect and G & T Metallurgical
- Digital mineralogy services with MLA

Contact us in Europe to discuss a cost-effective solutions:

ALS Sweden (Pitea):	alspi.lab@alsglobal.com
ALS Turkey (Izmir):	alsiz@alsglobal.com
ALS Romania (Rosia Montana):	alsrm@alsglobal.com
ALS Finland (Outokumpu):	alsot.lab@alsglobal.com
ALS Norway (Kirkenes):	alskk@alsglobal.com
ALS Spain (Seville):	alssv.lab@alsglobal.com

ALS is proud to serve Eastern Europe from our full service laboratory in Romania

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER







(ANRM) estimates that Romania's resources could still provide over 20,000Mt of currently unexploited mineral resources. ANRM has identified 1,900 mineral deposits with mining potential.

In addition, Romania has notable coal reserves with the country's new energy strategy being focused on lignite (less intensive to mine) with the potential for 40 years of production at a rate of 30Mt/y.

The latest statistics from the BP statistical review of world energy indicate that Romania has proven reserves of 291Mt of coal, but produced just 5.8Mt in 2010, a decline of over 9% on the previous year.

Still, Romania is practically independent in terms of coal-based energy resources. Statistical reports published in July show that, even though the country depends on the import of oil and gas, half of its energy consumption is supplied from its own resources.

### INVESTOR APPETITE FOR GOLD

Despite the recent decline, the country's resource sector is attracting investors.

At present these investors are only showing an interest in precious metals. Two companies have been granted mining permits: Gabriel Resources Ltd through its subsidiary Rosia Montana Gold Corp (RMGC), and European Goldfields Ltd through its subsidiary Deva Gold SA.

Gabriel Resources' Rosia Montana project is likely to be the first new gold mine to begin production in Romania.

The operation could produce an average 500,000oz/y over the life of the mine, and 626,000oz/y in the first five years once it becomes operational, but

developments have been slow since the original Environmental Impact Assessment was suspended in 2007.

The company has been working for more than a decade to develop the mine, which would create over 3,000 jobs locally, boosting the local economy and helping to lift the region out of very poor economic, social and environmental conditions.

The project is based on estimated resources of more than 10Moz of gold and 47Moz of silver and, at the proposed production rate, could reinstall Romania as Europe's largest gold producer.

This would boost the financial independency of the Romanian government, enabling it to at least complete its mining-sector modernisation programme.

Gabriel has already invested more than US\$450 million in the project but anticipates a further US\$1 billion will need to be spent before it is completed.

In September 2010, the Ministry of Environment restarted a technical analysis committee review of the project's environmental impact assessment, which had been suspended since 2007, and earlier this month Gabriel was granted an archaeological discharge certificate for the property.

Gabriel's chief executive Jonathan Henry says the certificate is a "significant step to receipt of other key permits and approvals".

European Goldfields is also progressing its Certej project having received a key permit in March 2010. In its March-quarter 2011 results the company said that local public consultation for the project has been completed following confirmation from the authorities that the environmental impact assessment for the project was acceptable.

The environmental authorities will now reconvene the technical analysis committee before issuing an environmental permit for the project.

Certej is anticipated to produce 155,000oz/y of gold and 816,000oz/y of silver and have a 16-year mine life.

Meanwhile, Carpathian Gold Inc has received an endorsement for its Rovina Valley gold project from Barrick Gold Corp, with Barrick recently agreeing to a C\$20 million private placement in Carpathian.

Carpathian says it will use the funds to expand the drilling programme at the Ciresata porphyry deposit as well as testing surrounding targets and other satellite deposits.

Carpathian says the project could support 200,000oz/y Au and 50Mlb/y Cu average production over a 19-year mine life.

The company is currently conducting drilling at the project with the aim of producing a new resource estimate for the entire project by the end of this year.

The resource estimate will be used in a pre-feasibility or feasibility study which Carpathian aims to have completed in the first half of 2012.

Romania still has a wealth of mineral resources to be exploited, owing to a lack of investment in the sector in the past as well as inefficiencies in historical mining practices.

New investment in the industry is beginning to uncover the country's potential, particularly for gold, for which it could become the European leader.



**Carpathian Gold Inc.** is an exploration and development company transitioning into a mid-tier gold producing company through the advancement of near-term production on its 100%-owned Riacho dos Machados gold project in Brazil while progressing the exploration and development plans on its 100% owned Rovina Valley Au-Cu project located in west-central Romania.

### TSX: CPN

#### RVP Project in Romania

- \$20 Million strategic placement by Barrick Gold Corp.
- Avg. annual gold production projected at 200,000 oz Au & 50 MM lb Cu over 19 year mine life
- 35,000m-50,000m drill program underway for 2011



Global resource of 12.7 + MM oz Au Eq\* (8.45 MM oz Au & 1.4 billion lb Cu)

"The Rosia Montana mine could reinstate Romania as Europe's largest gold producer"

Shobana Thaya, Investor Relations  
Tel: 416-368-7744

For More Information  
[www.carpathiangold.com](http://www.carpathiangold.com)

*This article was prepared with contributions from George Vulcanescu, a freelance journalist in Romania*

# MINING SERVICES DIRECTORY

## CONSULTANTS

**AFRICAN MINING CONSULTANTS**

- Geology and GIS
- Rock Mechanics
- Feasibility Studies
- Environmental Engineering
- Mine Audits
- Process Engineering

1564/5 Mieshi Road, P. O. Box 20106, Kitwe, Zambia  
Telephone +260 212 211 108, Fax +260 212 211 104  
E-mail: amc@zamnet.zm amc@kitwe.microlink.zm  
WWW.AMICO.ZM

**Expert. Quality. Advice.**

**AMC CONSULTANTS**

- Mining Engineering
- Geotechnical Engineering
- Geology
- Feasibility Studies
- Expert Reports
- Strategy Optimization
- Business Improvement
- Coal & Energy

amc-consultants.co.uk

Australia - UK - Canada

Argentina Australia Belgium Bolivia Burkina Faso Brazil Cameroon  
Canada Chile China Colombia Costa Rica Cuba Czech Republic  
Democratic Republic of Congo Ecuador Egypt El Salvador Equatorial  
Ghana Greece Guyana Haiti Honduras India Indonesia Iran Israel Ivory Coast  
Jamaica Kenya Korea Kuwait Laos Latvia Lebanon Liberia Lithuania Luxembourg Macedonia  
Malawi Malaysia Mali Mexico Mongolia Morocco Mozambique  
Namibia Nauru Nepal Netherlands Antilles Netherlands New Zealand  
Nicaragua Nigeria Norway Oman Pakistan Panama Paraguay Peru Philippines Poland Portugal Puerto Rico Qatar Romania  
Russia Rwanda Samoa Saudi Arabia Senegal Sierra Leone Singapore  
Slovakia Slovenia Somalia South Africa Spain Sri Lanka Sudan Suriname  
Swaziland Tanzania Thailand Timor-Leste Togo Trinidad and Tobago Tunisia  
Uganda Ukraine United Kingdom United States Uruguay Uzbekistan Venezuela Viet Nam Yemen Yugoslavia  
Zaire Zambia Zimbabwe Argentina Australia Belgium Bolivia Burkina Faso  
Brazil Cameroon Canada Chile China Colombia Costa Rica Cuba Czech Republic  
Democratic Republic of Congo Ecuador

**BEHRE DOLBEAR**  
founded 1911 MINERALS INDUSTRY  
ADVISORS

**We Know the Business of Mining**

Comprehensive Global Business, Management,  
Financial and Technical Advisory Consulting Services  
in all Aspects of the Minerals Industry

www.dolbear.com

**Denver**  
Tel: +1 303 620 0020  
Denver@dolbear.com

**London**  
Tel: +44 (0)207 953 0215  
London@dolbear.com

**GWP consultants**  
Independent advice to the International Minerals Industry

Mining Geology • Geotechnical Engineering  
Reserve Evaluation • Quarry Design  
Feasibility studies and due diligence  
Ground and Surface Water Management

Upton House, Market Street, Charlbury,  
Oxford OX7 3PJ UK  
Tel: +44 (0)1608 810374 fax: +44 (0)1608 810093  
e-mail: info@gwp.uk.com web: www.gwp.uk.com



We add value to our clients throughout the mining life cycle by providing solutions for:

- Mine Planning & Ore Evaluation
- Integrated Tailings Management
- Rock Mechanics
- Mine Environment
- Mine Water
- Mine Infrastructure
- Mine Energy & Sustainability
- Mine Safety & Industrial Hygiene
- Management Consulting

Golder now includes **Marston**

WWW.GOLDER.COM/MINING

**GUSTAVSON ASSOCIATES**  
Geologists • Engineers • Appraisers

**Assistance and Sound Advice  
- Anytime, Anywhere**

274 Union Blvd,  
Suite 450, Lakewood,  
Colorado 80228 USA  
Phone: +1 (720) 407-4062  
Fax: +1 (720) 407-4067  
http://www.gustavson.com  
wcrowl@gustavson.com

Nottingham – London – Essen – Moscow – Kolkata – Johannesburg

**IMC Group Consulting Limited**  
Incorporating International Mining Consultants &  
IMC Mackay & Schnellmann

Independent Quality Services to the Minerals Industry

Our areas of expertise:

- Mineral Expert Reports, Due Diligence, Valuations & Investor Support
- Exploration, Resource Modelling & Reserve Audits
- Feasibility Studies, Design & Procurement
- Project Management, Implementation & Operational Assistance
- Environmental Impact Assessments
- Health and Safety Management
- Technical Training
- Mine Closure & Reclamation

**Nottingham (Head Office)**  
IMC Group Consulting Limited  
Icon Business Centres  
Lake View Drive, Sherwood Park  
Nottingham NG15 0DT, UK  
Tel: +44 (0) 1623 726166  
Fax: +44 (0) 1623 729359

**Kolkata**  
IMC-SRG Consulting  
135 Jodhpur Park  
Kolkata 700068  
India  
Tel: +91 33 24149826  
Fax: +91 33 24148761

**London**  
IMC Group Consulting Limited  
18 Westminster Palace Gardens  
Artillery Row  
London, SW1P 1RL  
UK  
Tel: +44 (0) 20 7222 0600  
Fax: +44 (0) 1623 729359

**Johannesburg**  
IMC Group Consulting  
Private Bag X10046  
Fern Isle, Section 9  
359 Pretoria Avenue  
Randburg, South Africa  
Tel: +27 11 789 9495  
Fax: +27 11 789 9498

**Essen**  
IMC-Montan Consulting GmbH  
Am Technologiepark 1  
D-45307 Essen  
Germany  
Tel: +49 (0) 201 1721619  
Fax: +49 (0) 201 1721727

**Moscow**  
IMC Montan Russia  
Chayanova Str 22, Block 4  
125047 Moscow  
Russia  
Tel: +7 495 2506717  
Fax: +7 495 2515962

Email: mining@imcgl.com  
www.imcgl.com

**INDEPENDENT MINING CONSULTANTS, INC.**

Serving the World's Mining Industry Since 1983

Open Pit Mine Planning  
Ore Reserve Modeling  
Feasibility Studies & Project Evaluation

3650 East Gas Road / Tucson, Arizona 85714 USA  
Tel: (520) 294-9861 FAX: (520) 294-9865  
www.imctucson.com

Since 1972

**KCA**  
**Kappes, Cassidy & Associates**

Specialists in the Testing and Field Application of Heap Leach and Cyanide Technology

7950 Security Circle, Reno, NV 89506  
Phone: (775) 972-7575 Fax: (775) 972-4567  
www.kcareno.com E-mail: kca@kcareno.com

**KRC**  
Mining Consultants

- Operations Productivity Improvement
- Site Reviews and Benchmarking
- Mine Technical Services
- Cost Analysis and Budgeting

www.krc.com.au

**micon** | mineral industry consultants  
INTERNATIONAL LIMITED

valuation and evaluation of mineral properties  
mineral resource and mineral reserve estimates  
independent engineer services  
feasibility studies  
expert witness and litigation support

www.micon-international.com

Toronto, Canada: Tel +1 416 362 5135  
Vancouver, Canada: Tel +1 604 647 6463  
Norwich, UK: Tel +44 (0) 1603 501501

**PB PARSONS BRINCKERHOFF**  
125

International consultants, designers, engineers, programme and construction managers

Feasibility studies  
Due diligence  
Competent person reports  
Financial modelling and valuation  
Mine design and planning  
Geology and exploration  
3D modelling and visualisation  
Geotechnical services  
Water management  
SEA/ESIA  
Project management/EPCM  
Technical troubleshooting

Tel 44-(0)161-200-5000  
mining@pbworld.com

visit our website [www.mining-journal.com](http://www.mining-journal.com)





**Roscoe Postle Associates Inc.**

**Geological & Mining Consultants**

- Resource / Reserve Estimation
- Valuation of Mineral Properties
- M & A Due Diligence Reviews
- Metallurgical Assessment
- Lender Advisory Services
- Preliminary Assessments
- Project Financial Modeling & Analysis
- Scoping Studies
- NI 43-101/Competent Persons Reports
- Prefeasibility & Feasibility Studies

Toronto Vancouver London  
Denver Quebec City

Tel: +1-416-947-0907

E-mail: [mining@rpacan.com](mailto:mining@rpacan.com)  
[www.rpacan.com](http://www.rpacan.com)



*Experience, innovation, delivery.*

*Twenty years of independent advice to the minerals industry from study and review to closure.*

[www.turgisconsulting.co.uk](http://www.turgisconsulting.co.uk)

[www.turgis.co.za](http://www.turgis.co.za)



**wardell  
armstrong**

*your earth our world*

GEOLOGICAL APPRAISAL

RESOURCE ESTIMATION

MINE DESIGN AND ENGINEERING

PROCESS TESTWORK

FINANCIAL APPRAISAL

ENVIRONMENTAL MANAGEMENT

CORPORATE SOCIAL RESPONSIBILITY



[wardell-armstrong.com](http://wardell-armstrong.com)

Tel: +44 (0)1872 560738

Consultants to the Minerals Sector  
Offices: UK, Almaty, Moscow

**Integrated Mining Solutions.**

- Mining and geotechnical engineering
- Surface/underground mines
- Tailings and waste management
- Infrastructure engineering
- ESIA and sustainability management

For mines of all sizes and complexity  
from prospect to closure

Worldwide offices  
[mining@scottwilson.com](mailto:mining@scottwilson.com)  
+44(0)207 821 4102



[URS-SCOTTWILSON.COM](http://URS-SCOTTWILSON.COM)

**Cradle to cradle**



Exploration, feasibility, due diligence,  
engineering and operations through to  
mine closure.

Our global experience gives you expert,  
integrated solutions on every phase of  
your mining project.

Same team — start to finish.

[srk.co.uk](http://srk.co.uk)



**Saint Barbara - CSA Global**

Mining and Minerals Consultants

*"Making More of Your Resources"*



Saint Barbara: Tel: +44 (0)20 7404 2211  
[info@saintbarbara.com](mailto:info@saintbarbara.com)

CSA Global (UK) Ltd: Tel: +44 (0)1403 255 969  
[csauk@csaglobal.com](mailto:csauk@csaglobal.com)

[www.saintbarbara.com](http://www.saintbarbara.com) [www.csaglobal.com](http://www.csaglobal.com)



**PRACTICAL SOLUTIONS FOR THE GLOBAL MINING LIFE CYCLE**

Specializing in every aspect of global mining  
projects, from exploration to development, to  
production and reclamation.

Contact our Mining Specialists:

North America  
1-877-987-3211

Europe  
+44.1793.512305

Australia  
+61.08.9480.0685

Asia  
+86.10.59670295



[www.wardrop.com](http://www.wardrop.com)

visit our website  
[www.mining-journal.com](http://www.mining-journal.com)

**ENGINEERING**

**aggreko**

**RENTAL POWER FOR THE MINING INDUSTRY**

**Multi-MW Power Packages For**

- Construction & Commissioning
- Mine Expansion
- Camps & Processing Plants

Middle East : + 971 4 808 6100

Africa : + 234 1 461 2988

Europe: + 33 1 6015 0707

North America: + 281 848 1400

South America: + 5521 3385 9500

Asia : + 65 6862 1501

Australia : + 61 3 9586 5050

South Africa : + 27 11 357 8900

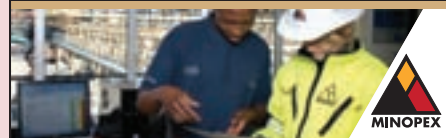
[enquiries@aggreko.com](mailto:enquiries@aggreko.com)

[www.aggreko.com](http://www.aggreko.com)

**We Specialise in the Contract Operation and Maintenance of Mineral Processing Plants**

[www.minopex.co.za](http://www.minopex.co.za)

Tel: + 27 11 234 7773



**Mining Journal Bookshop**



E-mail  
[diane.luis@aspermontuk.com](mailto:diane.luis@aspermontuk.com)  
to request an order form

[www.mining-journal.com/bookshop](http://www.mining-journal.com/bookshop)



## INFORMATION SERVICES

**Professional Development and Training for Mining**

**Geostatistics** **Mining 101**  
Cyanide Management  
Mineral Processing  
Assay Quality Control  
Rock Mechanics  
Mining Economics  
Mineral Reserves  
Acid Rock Drainage  
Open Pit Design  
Coal  
Project Valuation  
Haul Truck Management  
Impacts of Metals  
Risk Assessment

Short courses, webcasts and online courses by industry specialists ... accessible from anywhere.  
[pd.edumine.com](http://pd.edumine.com)

**CHINA METAL FORUM**  
安泰科 Antaiko **Raw Materials Group**

**The conference on the metals industry of China**  
**Stockholm 21-22 September**  
[www.chinametallforum.com](http://www.chinametallforum.com)

**Minjng Journal**  
Mining Journal Breaking News  
three times a week at  
[minjng-journal.com/newsletter](http://minjng-journal.com/newsletter)

**Minjng Journal**  
**Supplements**  
*Unique solutions for the global mining industry*

For more information, contact Richard Verth on:  
+44 (0)20 7216 6068 or by e-mail at: [richard.verth@minjng-journal.com](mailto:richard.verth@minjng-journal.com)

[www.minjng-journal.com/supplements](http://www.minjng-journal.com/supplements)

## RECRUITMENT

**Hudson**

Our client, an appointed representative and supplier of one of the world's leading manufacturers of mining and construction heavy equipment, is looking to recruit an **Operations Manager/Director** with proven experience in the industry for its West African Business Unit.

**Operations Manager/Director**

The Operations Manager/Director will provide strong leadership in the profitability and market development of the company in Ghana, Sierra Leone and Nigeria, set up distributor networks in new territories, implement and improve operational systems, processes and policies, develop and enhance relationships with existing and potential clients, and monitor and gather market intelligence.

- At least 10 years' experience in mining and construction heavy equipment
- Commercial focus, with the ability to make and retain effective business contacts
- West African experience and ideally be living or located in Africa
- Experience of start-up, and the flexibility to work within a relatively small operating unit
- Good business development experience and the ability to lead the company into new regional marketplaces

To find out more, please apply in writing, including a copy of your CV to: [bill.gibson@hudson.com](mailto:bill.gibson@hudson.com)

**Hunter Personnel**  
International Recruitment

**PROJECT MANAGER**

Project Manager required to oversee the geological and technical work on a gold project in West Africa. Our client, a mining/exploration company, is looking for someone with resource drilling experience on gold projects, particularly birimian or greenstone. Also required is a knowledge of both diamond and RC drilling and experience using software such as Micromine and MapInfo. The camp is an established and comfortable tented bush camp with satellite link etc. Salary to be advised.  
Ref No: PN4534

**SITE MANAGER**

Iron ore company in Central Africa is looking for an experienced Site Manager to take the lead role for the exploration and project development of its iron ore mines. A key requisite is the ability to work within multi-disciplinary teams and functions where performance to tight deadlines is demanded. The role will involve looking after a large camp and workforce, including drilling exploration, construction teams and a geological team, plus all support staff. The successful candidate will have the ambition and ability to progress within the organisation and introduce best practice for all the operations. Previous experience in Africa and French knowledge will be an advantage. Ref No: PN4532

Please send your cv to Sandie or Nick at:  
[cv@hunterpersonnel.com](mailto:cv@hunterpersonnel.com)

Tel: +44 (0)1202 298322 Fax: (0)1202 298383  
[www.hunterpersonnel.com](http://www.hunterpersonnel.com)

**For Executive Search & Recruitment**

**Exploration Manager**  
(Ref: SM21086)  
FIFO Africa, New Company, 8+ yrs exp.

**Project Director**  
(Ref: GR21180)  
FIFO South America, New Mine, 15+ yrs exp.

**Mining People INTERNATIONAL**

[www.miningpeople.com.au](http://www.miningpeople.com.au)  
Australian Based, Global Networks

## Minjng Journal

### Why wait?

Go to [www.minjng-journal.com](http://www.minjng-journal.com)  
to subscribe and receive  
your own copy



pass on the message...

*Drill & Blast... Load & Haul... Crushing & Conveying... Processing*

**Minjng Magazine Congress 2011**  
Johannesburg, South Africa

The Mining Magazine Congress is a global forum for mining equipment suppliers, mine managers, contractors, consultants, engineering firms and others to come together to discuss the latest technologies and approaches to improving efficiency and productivity.

Visit [www.minjngcongress.com](http://www.minjngcongress.com)

The **Mining in a Day** seminar series is a back-to-basics day-long seminar on the mining industry.

**Sept 9 • Nov 4 at Kingsway Hall Hotel, London WC1**

Three mining experts provide a comprehensive but straightforward explanation of what the global mining industry is, and how it works.

To reserve your place please contact  
**Lisa Huggins on**  
[lisa.huggins@aspermontuk.com](mailto:lisa.huggins@aspermontuk.com)  
or +44 (0)20 7216 6080

Hosted by:  
**Minjng Journal**

[www.minjng-in-a-day.com](http://www.minjng-in-a-day.com)

**Minjng Journal**  
**Investor Seminars**  
[www.investor-seminars.com](http://www.investor-seminars.com)

To register, please visit  
[www.investor-seminars.com](http://www.investor-seminars.com)

## Exclusive mining seminars in the world's financial centres.

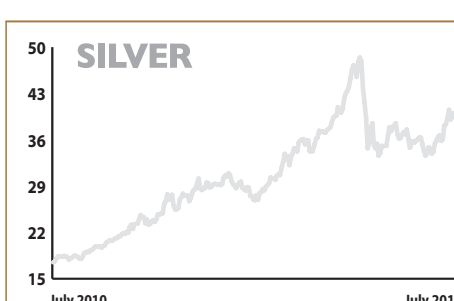
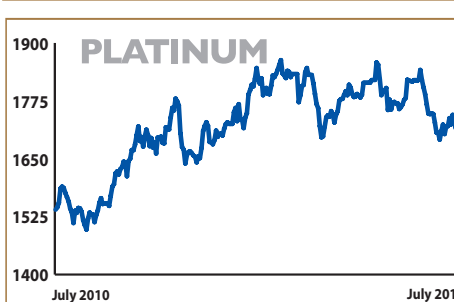
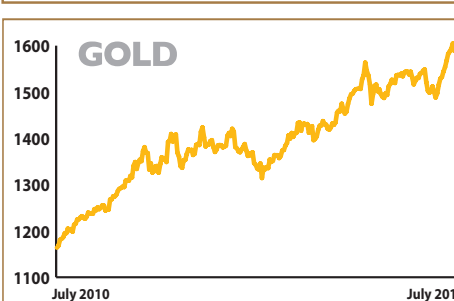
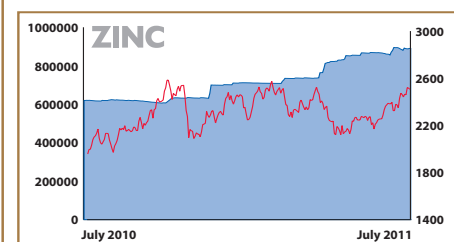
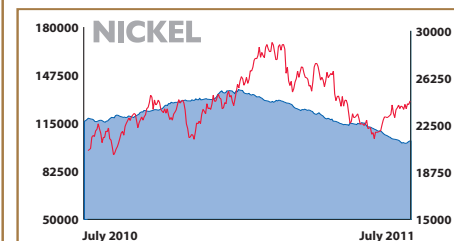
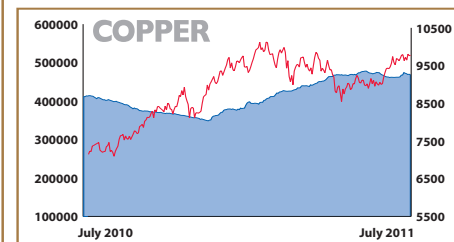
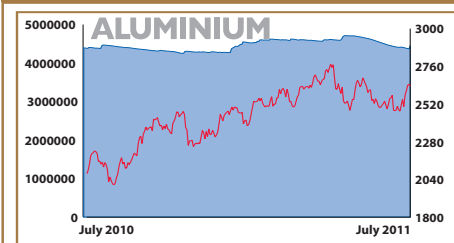
Tied closely to the most respected publication in the industry, Mining Journal Investor Seminars deliver quality context and valuable information to delegates, ensuring they fully understand and appreciate what each presenting company has to offer. Our keynote speaker is always an acclaimed expert in their field and, over the course of the event, will lay down the fundamentals needed to understand the Seminar subject.

### Schedule

**Gold Day...Friday, September 16**  
**Energy Day...Friday, September 30**  
**Copper Day...Friday, October 14**  
**Silver Day...Tuesday, November 1**  
**Canada Day...Sunday, December 4**  
**Australia Day...Monday, December 5**

## LME METAL STOCKS AND PRICES

Stocks (t)  Three-months price US\$/t (rhs) 



## MARKET UPDATE

### LME PRICES

		US\$/t	% change on week	% change on year
Aluminium	Cash	2601	5.1	26.3
	3 months	2633	5.2	26.8
Aluminium-alloy	Cash	2390	4.6	16.3
	3 months	2395	4.6	17.1
Copper	Cash	9744	1.4	36.9
	3 months	9770	1.4	36.7
Lead	Cash	2680	0.5	36.2
	3 months	2695	0.2	35.2
Nickel	Cash	24368	2.7	19.3
	3 months	24413	2.8	19.3
Tin	Cash	28738	2.9	48.1
	3 months	28850	3.3	48.2
Zinc	Cash	2479	2.9	28.9
	3 months	2505	2.7	28.0

Source: Bloomberg, LME

### LME OFFICIAL AVERAGES

(US\$/t)	Settlement	Cash	3-mths
Aluminium	2,555.41	2,555.04	2,583.32
Alum-alloy	2,346.59	2,339.21	2,349.21
Copper	9,045.43	9,045.12	9,056.30
Lead	2,512.20	2,511.64	2,521.30
Nickel	22,354.09	22,349.21	22,381.94
Tin	25,576.36	25,568.52	25,604.43
Zinc	2,230.48	2,230.08	2,251.03
Settlement	£/US\$	US\$/£	€/US\$
exchange rates	1.62169	80.4414	1.43917

Settlement is the average of the cash sellers' price. Cash and three-months are the average of the buyers' and sellers' price.  
Source: LME

### EXCHANGE STOCKS

	t	% change on week	% change on year
LME aluminium	4,461,425	1.4	1.5
Comex aluminium	1,603	0.0	-83.8
Comex aluminium pieces*	62,212	0.0	
Total aluminium	4,505,332	1.4	
LME aluminium-alloy	124,360	0.6	83.7
LME copper	468,350	-1.2	13.8
Comex copper	74,634	1.3	-18.7
Total copper	542,984	-0.9	7.9
LME lead	311,925	0.6	70.1
LME nickel	102,930	1.3	-11.5
LME tin	20,740	-2.0	36.9
LME zinc	89,005	-0.2	43.6

\* Assuming 0.75t per Comex aluminium piece  
Source: Bloomberg, LME, Comex

### COMEX COPPER PRICES

	(US\$/lb)
July	445.6
Aug	444.1
Sept	444.3
Oct	444.7

Source: Bloomberg, Comex

### LEADING INDICATORS

	Last	% change on week	% change on year
Dow Jones			
Industrial Average	12,315.72	-3.21	17.32
Nikkei 225	9,901.35	-1.09	1.52
Hang Seng	22,570.74	2.65	7.02
HSBC Global Mining	743.35	-0.29	32.63
FTSE Gold Mines	3,821.80	-1.79	22.22
FTSE/JSE Africa Gold	2,407.03	-5.04	4.54
S&P/ASX 300 Resources	5,637.02	-2.35	9.60
S&P/TSX Diversified Metals/Mining	10,712.99	-4.77	44.03

### PRECIOUS METALS

	US\$/oz	% change on week	% change on year
Gold (pm fix)	1,625.00	2.5	39.1
Silver (spot)	40	0.9	127.7
Platinum (last fix)	1,790	0.6	16.2
Platinum (J Matthey)	1,790	0.3	15.8
Palladium (last fix)	830	4.4	76.6
Palladium (J Matthey)	832	3.1	76.3
Osmium (free market indication)	400	0.0	0.0
Iridium (J Matthey)	1,050	0.0	45.8
Rhodium (J Matthey)	1,975	1.3	-12.2
Ruthenium (J Matthey)	180	0.0	-10.0

### SHIPPING RATES

Representative dry cargo single voyage rates (July 20)

Route/Size ('000 dwt)	US\$/t	% change on week	% change on year
Coal			
Richards Bay-ARA (100-150)	10.1	-3.3	19.9
E Aus-South Korea (120-160)	11.6	-2.5	42.3
E Aus-ARA (100-150)	12.2	-3.2	18.5
Hay Pt-China (100-150)	8.8	0.0	20.5
Iron ore			
Narvik-ARA (100-150)	4.8	-9.5	11.8
Brazil-ARA (100-150)	10.2	-3.5	14.2
Brazil-China (100-150)	19.6	-3.4	14.9
W Aus-China (120-160)	7.8	-3.3	20.1
W Aus-ARA (120-160)	13.0	-1.5	15.6
Saldanha Bay-China (100-150)	16.5	-2.7	43.0

Source: Drewry Shipping Consultants Ltd

### BULK MINERALS

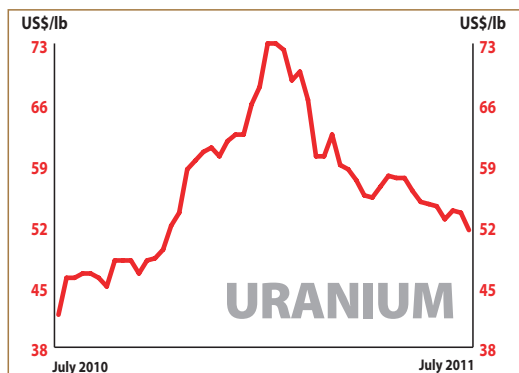
	US\$/t	% change on week	% change on year
Rutile Aus export fob	718		28
Ilmenite export fob	165		65.0
Zircon export fob	1,518		86
globalCOAL RB™ Index (July 22)†	115.9	0.96	27
globalCOAL NEWC™ Index (July 22)†	121.0	0.28	23.05

Source: † monthly from TZ Minerals International Ltd  
‡ Global Coal Ltd (www.globalcoal.com)

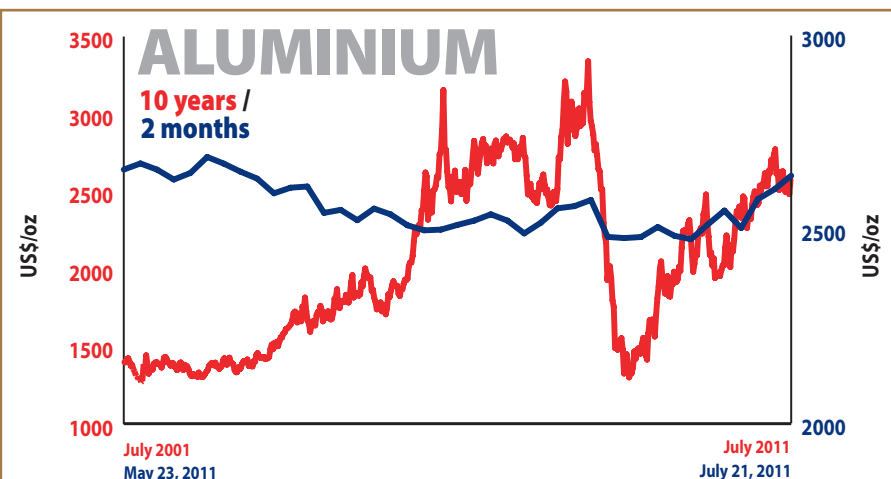
### OTHER METALS

	Bid	Ask	% change on week	% change on year
Antimony US\$/t cif (99.65%)	14,300	15,000	1.0	57.5
Arsenic (Rotterdam 99%) US\$/lb cif	0.60	0.70	0.0	0.0
Bismuth US\$/lb cif (99.99%)	11.80	12.40	0.8	51.3
Cadmium (99.99%) US\$/lb cif	1.20	1.35	-3.8	-32.9
(99.95%) US\$/lb cif	1.15	1.30	-3.9	-31.9
Indium US\$/kg (99.99%)	700	750	2.8	34.3
Mercury (99.99%) US\$/flask	1,600	2,100	0.0	48.0
Selenium US\$/lb cif (99.5%)	60	65	0.0	68.9
Uranium U <sub>3</sub> O <sub>8</sub> US\$/lb *	51.5		-3.7	12.0
Iron ore 58% Fe fines (US\$/t)	152.4		0.0	45.3
Iron ore 62% Fe fines (US\$/t)	175.4		0.2	28.9

\* Source: Ux Consulting



Source: Ux Consulting





## HSBC INDEXES

All five of the indexes graphed below commenced in December 1985. The market capitalisations below are for end-October 2010.

**Mining:** This index comprises 202 companies with a total market capitalisation of over US\$1,300 billion, half of this being in ten companies. The index is split 49% diversified, 21% gold, 14% base metals, 8% coal and 8% other metals.

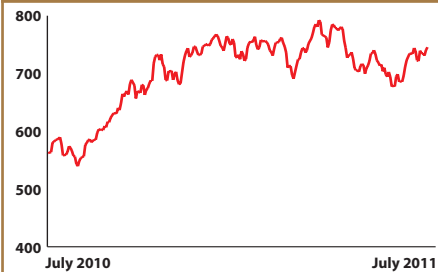
**Diversified mining:** This index comprises 29 companies, with a combined market capitalisation of some US\$660 billion, with the top four companies accounting for 56% of the total.

**Base metals:** An index of 48 companies (some US\$190 billion), with Freeport McMoRan Copper & Gold representing 24% of the total market capitalisation. Grupo Mexico and Alcoa Inc account for a combined further 15%.

**Gold:** This index of 50 companies has a market capitalisation of US\$280 billion. The top three companies account for 39% of the total.

**Coal mining:** The 36 companies have a market capitalisation of some US\$100 billion. Peabody Energy and China Shenhua account for a combined 26% of the total.

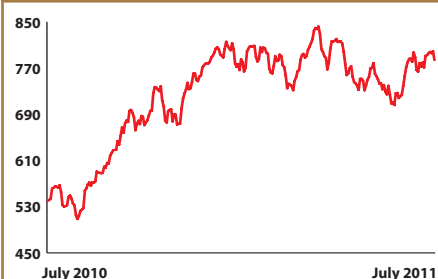
## GLOBAL MINING



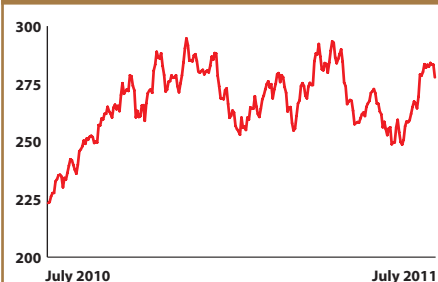
## GLOBAL DIVERSIFIED MINING



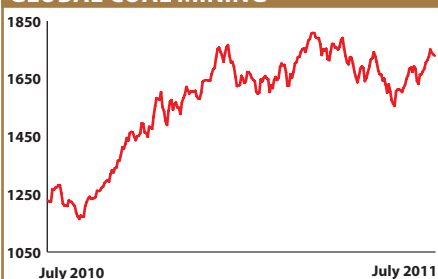
## GLOBAL BASE METALS



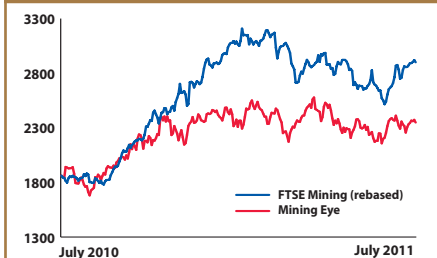
## GLOBAL GOLD



## GLOBAL COAL MINING



## ERNST &amp; YOUNG MINING EYE INDEX



Mining Eye represents the weighted average market capitalisation of the top 20 mining companies on London's AIM market.

Source: Thomson Financial Datastream

## SHARE PRICES

	Local	Change 5-day %	Local hi-lo %	Mkt cap US\$m
<b>Diversified</b>				
Anglo American plc (£)	29.75	-0.5	60	64,225
African Rainbow Minerals (R)	189.30	0.2	48	6,018
BHP Billiton Ltd (A\$)*	42.03	-3.6	40	228,512
BHP Billiton plc (£)*	22.97	-2.6	61	228,483
ENRC (£)	7.73	-0.9	18	16,240
Rio Tinto Ltd (A\$)*	81.20	-1.4	62	144,001
Rio Tinto plc (£)*	43.25	-1.2	76	144,050
Teck Resources Ltd (C\$)	46.99	-6.9	46	29,310
Vale SA (BR)	50.97	-0.1	35	168,266
Vedanta Resources (£)	17.65	-4.5	1	7,657
Xstrata plc (£)	13.04	-3.4	55	63,088
<b>Gold/Silver</b>				
Agnico-Eagle (C\$)	55.87	-5.8	0	9,967
AngloGold Ashanti (R)	282.20	-6.2	10	16,219
Barrick Gold (C\$)	45.06	-3.9	26	47,530
Centerra Gold (C\$)	18.58	0.4	57	4,630
Coeur d'Alene (US\$)	27.03	-2.7	54	2,420
Eldorado Gold (C\$)	16.80	-1.6	45	9,736
Fresnillo (£)	17.10	4.0	93	20,020
Gold Fields Ltd (R)	102.24	-4.0	22	11,023
Goldcorp (C\$)	45.82	-8.7	44	38,921
Golden Star (C\$)	2.44	-8.6	9	666
Harmony Gold (R)	92.24	-4.8	64	5,922
Hedra Mining (US\$)	7.84	-4.2	46	2,187
Iamgold (C\$)	19.54	-3.3	52	7,733
Kinross Gold (C\$)	15.69	-4.3	33	18,806
Newcrest Mining (C\$)	40.17	-1.1	69	33,868
Newmont Mining (US\$)	57.88	-1.1	51	28,581
Pan American Silver (C\$)	29.28	-7.8	33	3,335
Petropavlovsk (£)	8.03	-4.6	23	2,463
Polymetal (US\$)	21.17	5.2	88	8,455
Polyus Gold (Rb)	58.00	-7.2	50	11,056
Randgold Resources (£)	55.60	0.2	51	8,268
Yamana Gold (C\$)	12.59	-0.2	84	9,900
Zijin Mining 'H' (H\$)	4.34	0.5	49	17,083
<b>Platinum Group Metals</b>				
Anglo Platinum (R)	586.00	-2.5	1	23,040
Aquarius Platinum (A\$)	4.21	-9.5	1	2,182
Impala Platinum (R)	174.90	-1.2	10	16,493
Lonmin plc (£)	12.76	-2.5	0	4,218
Northam Platinum (R)	38.10	-2.3	4	2,046
Stillwater Mining (US\$)	16.10	-2.6	27	1,659
Zimplats (A\$)	13.00	0.0	55	1,542
<b>Aluminium</b>				
Alcoa (US\$)	14.98	-5.0	59	15,941
Alumina Ltd (A\$)	2.20	-2.2	56	5,917
Aluminum Corp of China 'H' (H\$)	6.74	10.1	32	19,234
Hindalco (Rs)	167.95	-5.0	17	7,295
Norsk Hydro (NK)	38.40	-0.1	47	14,694
<b>Copper</b>				
Antofagasta (£)	13.86	-3.2	69	22,306
First Quantum Minerals (C\$)	132.70	-4.6	83	12,070
Freeport-Mc. C & G (US\$)	54.25	-2.0	77	51,392
Grupo México (MP)	43.10	-0.3	57	28,796
Inmet Mining (C\$)	65.02	-7.6	50	4,758
Ivanhoe Mines (C\$)	24.78	-0.7	67	18,574
Jiangxi Copper (Yu)	36.93	3.3	43	16,873
Kazakhmys (£)	13.13	-2.8	39	11,473
KGHM (Zi)	187.40	-0.7	87	13,400
Mitsui Min. & Smt. (¥)	279.00	0.4	59	2,054
Southern Copper (US\$)	35.49	-2.6	35	30,167
Sumitomo Met. Min. (¥)	1,373.00	0.4	61	10,259

<b>Platinum Group Metals</b>				
Anglo Platinum (R)	586.00	-2.5	1	23,040
Aquarius Platinum (A\$)	4.21	-9.5	1	2,182
Impala Platinum (R)	174.90	-1.2	10	16,493
Lonmin plc (£)	12.76	-2.5	0	4,218
Northam Platinum (R)	38.10	-2.3	4	2,046
Stillwater Mining (US\$)	16.10	-2.6	27	1,659
Zimplats (A\$)	13.00	0.0	55	1,542
<b>Aluminium</b>				
Alcoa (US\$)	14.98	-5.0	59	15,941
Alumina Ltd (A\$)	2.20	-2.2	56	5,917
Aluminum Corp of China 'H' (H\$)	6.74	10.1	32	19,234
Hindalco (Rs)	167.95	-5.0	17	7,295
Norsk Hydro (NK)	38.40	-0.1	47	14,694
<b>Copper</b>				
Antofagasta (£)	13.86	-3.2	69	22,306
First Quantum Minerals (C\$)	132.70	-4.6	83	12,070
Freeport-Mc. C & G (US\$)	54.25	-2.0	77	51,392
Grupo México (MP)	43.10	-0.3	57	28,796
Inmet Mining (C\$)	65.02	-7.6	50	4,758
Ivanhoe Mines (C\$)	24.78	-0.7	67	18,574
Jiangxi Copper (Yu)	36.93	3.3	43	16,873
Kazakhmys (£)	13.13	-2.8	39	11,473
KGHM (Zi)	187.40	-0.7	87	13,400
Mitsui Min. & Smt. (¥)	279.00	0.4	59	2,054
Southern Copper (US\$)	35.49	-2.6	35	30,167
Sumitomo Met. Min. (¥)	1,373.00	0.4	61	10,259

<b>Aluminium</b>				
Alcoa (US\$)	14.98	-5.0	59	15,941
Alumina Ltd (A\$)	2.20	-2.2	56	5,917
Aluminum Corp of China 'H' (H\$)	6.74	10.1	32	19,234
Hindalco (Rs)	167.95	-5.0	17	7,295
Norsk Hydro (NK)	38.40	-0.1	47	14,694
<b>Copper</b>				
Antofagasta (£)	13.86	-3.2	69	22,306
First Quantum Minerals (C\$)	132.70	-4.6	83	12,070
Freeport-Mc. C & G (US\$)	54.25	-2.0	77	51,392
Grupo México (MP)	43.10	-0.3	57	28,796
Inmet Mining (C\$)	65.02	-7.6	50	4,758
Ivanhoe Mines (C\$)	24.78	-0.7	67	18,574
Jiangxi Copper (Yu)	36.93	3.3	43	16,873
Kazakhmys (£)	13.13	-2.8	39	11,473
KGHM (Zi)	187.40	-0.7	87	13,400
Mitsui Min. & Smt. (¥)	279.00	0.4	59	2,054
Southern Copper (US\$)	35.49	-2.6	35	30,167
Sumitomo Met. Min. (¥)	1,373.00	0.4	61	10,259

\* Dual-listed companies, with effective cross-holdings

## SHARE PRICES

	Local	Change 5-day %	Local hi-lo %	Mkt cap US\$m
<b>Nickel</b>				
Aneka Tambang (Rp)	2,050.00	1.2	10	2,302
European Nickel (£)	0.14	1.9	2	58
Minara Resources (A\$)	0.68	-2.2	10	876
Norilsk Nickel (US\$)	270.75	1.4	94	51,612
Sherritt Intl (C\$)	6.07	-7.5	1	1,891
<b>Zinc/Lead/Tin</b>				
Boliden AB (SK)	16.60	-1.2	48	4,792
Breakwater Resources (C\$)	7.42	-0.3	97	622
Hindustan Zinc (Rs)	141.90	2.8	76	13,603
Industrias Peñoles (MP)	522.20	1.9	98	17,813
Ivernica (C\$)	0.16	-8.8	5	111
Lundin Mining (C\$)	6.76	-6.2	54	4,153
PT Timah (Rp)	2,450.00	-3.0	13	1,452
<b>Ferrous</b>				
African Minerals (£)	6.12	-5.5	84	3,274
Cliffs Natural Resources (US\$)	88.67	-11.7	72	12,946
Ferrexpo (£)	4.53	-6.7	72	4,353
Fortescue Metals (A\$)	6.46	-0.9	72	22,166
Evraz Highveld (R)	44.50	0.0	7	659
Kumba Iron Ore (R)	514.04	0.3	93	24,701
Merafe Resources (R)	1.07	-2.7	4	396
MMX (BR)	8.49	-4.0	7	3,361
<b>Energy Minerals</b>				
Alpha Natural Resources (US\$)	42.91	-7.5	25	9,734
Arch Coal (US\$)	25.64	-10.0	29	5,303
Banpu PCL (Bt)	742.00	1.6	54	6,787
PT Bumi Resources (Rp)	3,075.00	0.0	76	7,521
Cameco (C\$)	25.41	-0.2	13	10,585
China Shenhua Energy (H\$)	40.05	3.2	99	95,283
Coal & Allied Ind (A\$)	101.95	-0.9	21	9,729
Coal India (Rs)	393.70	7.0	84	56,419
Consol Energy (US\$)	52.25	-4.0	84	11,842
Energy Resources of Australia (A\$)	4.67	7.9	7	982
Exxaro (R)	180.00	-3.7	88	9,632
Peabody Energy (US\$)	0.58	-5.4	52	15,681
UK Coal plc (£)	0.42	1.8	38	203
Uranium One (C\$)	3.31	2.2	22	3,344
Yanzhou Coal (Yu)	33.50	-1.1	73	22,982
<b>Industrial Minerals &amp; Diamonds</b>				
Harry Winston (C\$)	15.04	-7.5	63	1,345
Gem Diamonds (£)	2.39	-0.6	43	539
Iluka (A\$)	18.17	-5.0	91	8,385
Mosaic Co (US\$)	71.28	0.9	59	31,830
Petra Diamonds (£)	1.60	5.8	76	1,282
Potash Corp of Sask (C\$)	57.14	-0.3	80	51,564
Trans Hex (R)	3.30	-1.5	57	52

## THIS WEEK'S MAIN MOVERS

	Price	Change %
<b>Top 6 performers</b>		
Aluminium Corp	6.74	10.1
Energy Resources of Australia	4.67	7.9
Coal India Ltd	393.70	7.0
Petra Diamonds	1.60	5.8
Polymetal	21.17	5.2
Fresnillo plc	17.10	4.0
<b>Top 6 falls</b>		
Arch Coal	25.64	-10.0
Aquarius Platinum	4.21	-9.5
Ivernica Inc	0.16	-8.8
Goldcorp Inc	45.82	-8.7
Golden Star	2.44	-8.6
Pan American Silver	29.28	-7.8

## HSBC INDICES

	Change on week (%)	Hi-Lo (%)	52-week max	52-week low
<b>100 on 31.12.88</b>				
Global Mining	743	1.1	81	792
Global Diversified Mining	1,226	1.7	79	1,321
Global Base Metals	784	0.5	83	842
North American Base Metal*	1,357	-1.7	84	1,463
Global Gold Index	278	-0.8	76	295
Global Gold Ex South Africa	351	-0.8	79	370
North American Gold	341	-2.1	67	370
Global Coal Mining*	1,729	3.2	88	1,809
Other Metals/Minerals*	1,229	2.2	68	1,405
Latin American Mining*	3,658	0.8	74	3,986
Latin American (Ex CVRD)*	1,839	1.2	72	2,017

\* 100 on 31.12.89 + 100 on 31.12.85

All data on this page sourced from Bloomberg unless otherwise stated

Mining Journal's share constituents are reviewed on a quarterly basis. The companies in the gold section comprise the leading stocks by market capitalisation. The constituent companies in all other commodity sections are chosen on a subjective basis to include the major producers, and are allocated to sections based on revenue. Fast-track entry into the share table will apply in the case of significant flotations or company-transforming mergers.

# mines and money

The premier mining and investment event in Europe

## London 2011



### Exhibitors already signed up

Afferro Mining  
African Consolidated  
African Eagle Resources  
African Queen  
Ambrian  
AMC Consultants  
AME Group  
AMEC  
Anglesey Mining  
Anglo Asian Mining  
AQM Copper  
Argentex Mining  
Astor Gold  
Aureus Mining  
Ausgold  
Aviva  
Azimuth Resources  
Baja Mining  
Banlaw Africa Group  
Bannerman Resources  
Baobab Resources  
Barkerville Gold  
Behre Dolbear  
Bellwood Prestbury  
Belvedere Resources  
Blackthorn Resources  
Boart Longyear  
CA Mining Global Recruitment  
Caledonia Mining  
Canyon Resources  
Carlisle Goldfields  
Carpathian Gold  
Castile Resources  
Castle Peak Mining  
Castlemaine Goldfields  
Catalyst Copper

Centaurus Metals  
Chalice Gold Mines  
Cominco Resources  
Concordia Resource  
Condor Resources  
Continental Coal  
Copperzone Resources  
CSA Global  
Dalradian Resources  
Digby Wells & Associates  
Discovery Metals  
DOK-ING  
Donner Metals  
Doray Minerals  
EMED Mining  
Emerick Resources  
Equatorial Resources  
Ernst & Young  
EurOmax Resources  
Fire River Gold  
FirstRand Bank  
Fission Energy  
Focus Ventures  
Fortuna Silver Mines  
Gemcom Software Europe  
Geologix Explorations  
GFMS  
Global Cobalt  
Global Drilling Products  
Gold Group  
Golden Rim Resources  
Golder Associates  
Goldex Resources  
Goldstone Resources  
Great Basin Gold  
Gryphon Gold

GV Gold (OJSC Vysochaishy)  
IMC Group Consulting  
Inspectorate International  
Integra Mining  
International Enxco  
Intierra  
Iron Creek Resources  
Jacobs E & C  
Kefi Minerals  
Kopylovskoye Gold  
La Mancha Resources  
Laramide Resources  
Legend Gold  
Lydian International  
Mandalay Resources  
Manhattan  
Maptek  
Marengo Mining  
Mariana Resources  
Martin Place Securities  
Metals Economics Group  
Metals X  
Metminco  
Micromine  
Minemakers  
Minera IRL  
Minesonline.com  
MineSight Applications  
Moly Mines  
Montero Mining & Exploration  
Morning Star Gold  
Mt Isa Metals  
Mundoro Mining  
Mutiny Gold  
Nautilus Minerals  
Nkwe Platinum

Northern Shield Resources  
Northern Tiger Resources  
Northland  
Norton Gold Fields  
Nyota Minerals  
Olympus Innov-X  
Olympus Pacific Minerals  
Oremex Resources  
Ormonde Mining  
Orsu Metals Group  
Orvana Minerals  
Pan Asia Resources  
Papua New Guinea  
Parsons Brinckerhoff  
Peak Resources  
Petaquilla Minerals  
Polar Star Mining  
PricewaterhouseCoopers  
Radius Gold  
Randgold Resources  
Raw Materials Group  
Regulus Resources  
Renaissance Capital  
Renaissance Minerals  
Rex Minerals  
RPS Aquaterra  
Sacre Coeur Minerals  
Scandinavian Resources  
Scott Wilson  
Selwyn Resources  
SGS Canada  
Shore Gold  
Silver City Minerals  
Sirius Minerals  
Sirius Resources  
Snowden Group

Solomon Gold  
South Boulder Mines  
Southern Mapping  
SRK Consulting  
Standard Bank  
Stewart Group  
Stratex Exploration  
Sumatra Copper & Gold  
Sunridge Gold  
Tata Steel Consulting  
Thermo Scientific Niton  
Analysers  
TNG  
TNT Mines  
Treasury Metals  
Troy Resources  
Universal Coal  
Uranex  
Wardell Armstrong International  
Wardrop  
West LB  
Westgold  
Westminster Resources  
Wolf Minerals  
Women in Mining  
Wood Mackenzie  
Woulfe Mining  
Yellowhead Mining

Exhibition  
nearly  
sold out

Sponsored by



Platinum

AMBRIAN



Gold



Silver



For further information and to find out how to get involved, please contact

Pablo Martin on +44 (0)20 7216 6063 or +44 (0)7957 164107 or at [pablo.martin@aspermontuk.com](mailto:pablo.martin@aspermontuk.com)

Visit [www.minesandmoney.com/london](http://www.minesandmoney.com/london)