INTRODUCTION
Compared to the banking sector, the insurance industry has performed well throughout the financial turmoil of 2009. Year-on-year losses to shareholder equity (non-life reinsurance) were down almost 17% at 4Q08, but by 3Q09 had rebounded almost fully to the record 4Q07 levels. Similarly, figures for Insurers’ capital show a year-on-year fall of over 30% at 4Q08 with a 26% recovery by 3Q09. The market therefore remains well-capitalised and, thanks partly to a relatively benign Natural Catastrophe year, the industry has returned to profit. As a result, we are starting to see some competition for market share amongst those underwriting the mining sector.

Operational mining losses continue to affect the industry, but differ this year in nature and cause – whilst there was a bias towards Natural Catastrophe losses in 2008, those in 2009 have been more operational. The return of rising commodity prices and the resultant increase in exposure are the main concerns for underwriters – together with the continuing change in climatic conditions. The fundamentals of inherent risk in the mining industry have not changed, however, and mining remains a highly volatile insurance sector, requiring specialist insurers who understand the business. Balancing capacity and pricing remains challenging on the large risks. However, it would appear the top of this pricing cycle was achieved in 2008/2009.

Political Risk remains an issue, with nationalism or civil disruption highlighting the significant exposure for mining in certain territories. The DRC continues to make headlines with expropriation actions against a number of exploration companies. Others have been exposed to similar pressures in Madagascar and Guinea, whilst the Zambian government recently declared it would not honour certain contractual tax agreements to mining contracts. In this review, we examine Political Risk and then, in a Special Report, dig deeper into the situation in Peru, the Philippines and the DRC.

"THE LOSSES OF 2008 REMAIN FRESH IN UNDERWRITERS’ MINDS. SHOULD WE SUSTAIN A SIGNIFICANT NATURAL CATASTROPHE EVENT OR CONSIDERABLE MACHINERY, PROPERTY AND BUSINESS INTERRUPTION LOSSES, THE RATES IN THE PROPERTY MARKET WILL ALMOST CERTAINLY SPIKE."
“Balancing Capacity and Pricing remains challenging on the large risks. However, it would appear the top of this pricing cycle was achieved in 2008/2009.”

From a human asset perspective, the increasing need for focused Accident and Health cover is underscored by the growth of the sector in Africa and the BRIC countries. The workforce is the single most important asset in any organisation: in the mining industry, it can also be the most vulnerable. The nature of mining entails that much of the ‘workplace’ is remote and hazardous.

Despite headlines of piracy dominating the cargo scene and the television screen, an increase in global capacity has made for an extremely competitive marine market. With new Institute Cargo Clauses offering improved and wider coverage and the Rotterdam Rules due to be ratified shortly, 2010 should offer the buyer a number of new opportunities.

We expect to see the emergence of a buyers’ market in 2010, creating stabilisation and probable softening of rates in the Property Damage/Business Interruption market.

This expectation has to carry a level of caution, however, as any softening of current market conditions will be built on shallow foundations. The losses of 2008 remain fresh in underwriters’ minds. Should we sustain a significant natural catastrophe event or considerable machinery, property and business interruption losses, the rates in the Property market will almost certainly spike.

In this Mining Market Review 2010 we comment across other classes and areas of interest such as Claims, Construction, Directors and Officers, Liability, and Terrorism and Political Violence – supported by a Special Reports section treating in depth issues such as environmental law, North American coal mining and offering a Consultant’s View on risk in this industry.

We trust that you will find this Mining Market Review a stimulating read and a useful tool in assessing your risk management and insurance needs.
PROPERTY DAMAGE
BUSINESS INTERRUPTION
In our 2009 edition we examined the factors contributing to the insurance market crunch when the combination of large losses in 2007/2008 and the Global Financial Crisis left buyers with financing issues and a product that was rising in cost.

2009 has been below average from a loss perspective (see graph one) and although the perils are no less significant, this has afforded a moment for the mining insurance market to take stock.

In turn, 2010 may present an opportunity for insurance buyers who may have experienced higher premiums and raised retentions over the past 12 months.

The market shakeout following the insurance market crunch has left a consolidated Property Damage and Business Interruption (PD/BI) insurance market where:

- Risks and exposures are better understood and technically rated for by fewer players.
- Sufficient capacity is available for all but the largest risks. Total available capacity, excluding Berkshire Hathaway and FM Global, is estimated to be USD 1.75 billion (see Graph three).
- Buyers demonstrating high quality risk management are once again able to seek improvements to the terms and conditions of their cover.

We must be wary of calling the market prematurely. Nevertheless, we see flattening premium rates (See graph two) as a sign that as long as the level of Natural Catastrophe losses remains below average, the start of 2010 will mark a point where the market moves in favour of the buyer rather than the seller.
In the current market, underwriting discipline remains tight. Each underwriter will review risks differently but we see the four big issues as:

**BOTTLENECKS**

Whether it be a port in Queensland, an item of machinery in South America or a shared utility supplier in South Africa, there is increasing pressure from capacity providers to de-bottleneck.

Therefore, how bottlenecks are managed, avoided and presented to underwriters is key to the successful outcome of PD/BI insurance negotiations.

Encompassed in this topic is Supplier of a Supplier exposure. Talk of Eskom’s ability to maintain power supplies in South Africa has been a hot topic in the industry for some time. The Varanus Island Apache Energy explosion raised this issue once again.

**NATURAL CATASTROPHE CAPACITY**

Due to new and returning markets capacity has increased (see Graph three). However, deployment of capacity continues to attract special attention in Natural Catastrophe exposed areas with availability varying by territory. Overall the level of capacity supply remains below the level of demand.

Natural Catastrophe exposure continues to be the single largest capacity restrictor in the mining insurance sector with Earthquake and now Rain Event and Flood being very carefully considered. This is especially so for open-cut operations.

In our 2009 review we referred to the fact that at least twelve insurers had withdrawn from underwriting mining operational business. The story this year is different; at least three new markets have started writing non-proportional business (Torus, Apollo and Brit), Hardy Syndicate have returned to soft rock mining and another two insurers are considering the sector for 2010.

This is positive news for the buyer as, although the new capacity is mainly excess of loss, it will help to create more competitive pricing tension in non-proportional insurance programmes. It will also assist those clients seeking to buy bigger limits generally.

Another influence on capacity is the differentiation between hard rock and soft rock. This distinction had largely disappeared. However, the issues in Queensland with coal have raised the point again and a number of insurers are now declining soft rock exposures or reducing the capacity they offer for soft rock (largely Coal) mining.

Catastrophe Bonds, based on parametric triggers as opposed to pure indemnity, are still hotly discussed as an alternative to standard risk transfer mechanisms. Whilst there has been an increase in their use they do not currently represent a viable alternative to most individual mining risk transfer requirements but they could be real options in 2010/11.
PROPERTY DAMAGE/BUSINESS INTERRUPTION

COMMODOITY PRICES

Commodity price volatility was an exacerbating factor in Business Interruption (BI) claims in 2007/8. As an underlying issue for (re)insurers this has not changed so price caps are likely to come back into vogue in 2010 and attachment points are unlikely to drop.

However, some clients have accepted price caps in order to provide certainty to underwriters. In so doing they created an environment whereby it was possible to negotiate an improved balance between appropriate levels of indemnity and premiums or deductibles. If commodity prices return to 2008 levels, though, large placements may find capacity once again restricted.

MARKET SECURITY

Some insurers’ financial problems ensured that there was a continued need to closely monitor the status of (re)insurance panels. This proved a catalyst for increased syndication of risk whereby a higher number of (re)insurers may be preferred to a single large capacity provider. This situation continues.

As shown in Figure A, financial ratings have stabilised. However, just as insurers perceive that the underlying perils to an insurance risk are unchanged, so should buyers remain wary of the threat of a failing capacity provider for both their risk transfer and fronting requirements.

A separate influence on insurers is the 2012 implementation of the “Solvency II” E.U. Directive which has already altered underwriting strategies in the European market. Under this legislation long-tail lines of business will require higher capital ratios to be maintained than short-tail business. This will ultimately affect the price and availability of capital to clients.

IN SUMMARY...

In the absence of a catastrophic loss, the mining PD/BI Insurance market is likely to soften in 2010. Risk differentiation will remain essential to both buyers and sellers. There will be particular emphasis on the four factors of:

- Bottlenecks
- Commodity Prices
- Natural Catastrophe Capacity
- Market Security

SECURITY RATINGS

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Figure A - S&P Ratings - *Values based on public domain information and not interactive.
“SOME CLIENTS HAVE ACCEPTED PRICE CAPS IN ORDER TO PROVIDE CERTAINTY TO UNDERWRITERS. IN SO DOING THEY CREATED AN ENVIRONMENT WHEREBY IT WAS POSSIBLE TO NEGOTIATE AN IMPROVED BALANCE BETWEEN APPROPRIATE LEVELS OF INDEMNITY AND PREMIUMS OR DEDUCTIBLES. IF COMMODITY PRICES RETURN TO 2008 LEVELS, THOUGH, LARGE PLACEMENTS MAY FIND CAPACITY ONCE AGAIN RESTRICTED.”
CLAIMS SERVICE
12 months ago we commented that the 2007/8 losses, estimated to be six times the premium income for the mining sector, would make it a market-changing year... it was.

The market baulked, many claims took a long time to be resolved – and some remain outstanding today.

Looking back at last year’s performance it is worth recognising that mining placements frequently have very high values and are often widely distributed among many carriers in layered placements. Such structures allow capacity to be utilised effectively but can, in rare circumstances, create tensions between layers when a large claim is made. The high, excess layers sometimes exert pressure on lower, primary layers to “contain” the claim.

Last year we discussed the trend towards managing claims by committee and in at least one case last year a committee of nearly 40 carriers set about dealing with a sizeable claim - with predictable results.

Other cases continue today along very similar lines. These incur huge costs for carriers and policyholders alike and make inefficient progress towards settlement. The failure of the underwriting community to address this has led to some mining companies considering self insurance, increased retentions or enhanced use of captives.

SO WHAT HAS HAPPENED SINCE LAST YEAR?

There are some rays of hope. With the support and encouragement of the broking community there is evidence that some lead insurers wish to circumvent the committee process. By dealing directly with their clients over outstanding claims they intend to recover their claims paying reputation. We hope that these few will be true market leaders and reach agreement with their clients. Nevertheless, they are few and the committee many – it will certainly take courage.

"WITH THE SUPPORT AND ENCOURAGEMENT OF THE BROKING COMMUNITY THERE IS EVIDENCE THAT SOME LEAD INSURERS WISH TO CIRCUMVENT THE COMMITTEE PROCESS. BY DEALING DIRECTLY WITH THEIR CLIENTS OVER OUTSTANDING CLAIMS THEY INTEND TO RECOVER THEIR CLAIMS PAYING REPUTATION. WE HOPE THAT THESE FEW WILL BE TRUE MARKET LEADERS AND REACH AGREEMENT WITH THEIR CLIENTS."
CONSTRUCTION
CONSTRUCTION

MARKET CONDITIONS

2009 produced positive underwriting results for the construction mining sector. The onshore construction market is generally enjoying favourable loss experience resulting in continued softening of rates and premiums, reduction in deductibles and the availability of wider cover.

This has resulted in additional capacity entering the market, particularly in the Lloyd’s market sector from companies such as Torus, CV Starr, Canopius, Talbot and more recently Hardy. Insurers that have withdrawn from construction have re-entered the market (such as RSA) and, together with the existing construction market, the overall global market capacity is now reaching approximately USD 2.7 billion on a Possible Maximum Loss basis, although this does presuppose the ‘best’ risk of highest rates, toughest deductibles and narrowest cover.

Another significant movement over the last 12 months has been the emergence or appetite of local or regional insurers keen to find premium from projects located in their country of domicile or region of underwriting authority.

In countries or regions of high natural resource where new mine developments or expansion of existing mines is active, local insurers are achieving sufficient security ratings to be included in potential markets for mining risks. Good examples of this are Brazil, China, Russia, South Africa, and Australia.

The decentralisation of markets continues with underwriting authority centres being set up to capitalise on the investment made by private enterprise and Governmental bodies. Again, examples of this include Zurich, AXA, RSA, Chartis (formerly AIG) and the Lloyd’s Syndicates such as Catlin, Torus, Beazley and Hiscox.

In 2009 evidence showed significant capacity being provided by certain insurers who regard mine construction to be exposed to very low PML losses. In non-catastrophe areas it is not unusual to see projects valued in excess of USD 1 billion being underwritten by three to five insurance markets only.

THE PERCEPTION OF MINES OR MINING PROJECTS BY THE CONSTRUCTION MARKET

The onshore construction market has always reviewed mines from two distinct perspectives:
(a) The construction of a normal processing plant situated in or around a mine site.
(b) The development and excavation of vertical or deep shaft facilities.

In most cases, the onshore construction market will not indemnify damage to pure mining operations. This is viewed as a completed risk and therefore one for operational insurers. However, as a broker placing such risks it is critical to understand the differences between any sub-soil excavation including mine development and any underground excavation activities relating to pure mining.

Certain construction underwriters will provide cover for the development of shafts to reach the mine itself, including the installation of machinery such as ventilation, air conditioning, drilling machinery and material removal.

With most of the exposures being above ground, plant and equipment such as crushers, graders, screening equipment and other processing items are treated like other metallurgical processing plants.

Underwriters are particularly focused upon heavy material removal or handling items such as drag lines, where the loss experience over the last ten years has produced negative underwriting results for the market. Nevertheless, despite a limited number of high value claims, the onshore construction market still concerns itself Chiefly with frequency or attritional exposures rather than that of catastrophic events.

One of the principle areas of focus by construction insurers relates to the project location, the infrastructure around the contract site and the (potential) lack of sophisticated or quality transportation facilities. Because of their location, the perceived secondary risks of road or rail
In countries or regions of high natural resource where new mine developments or expansion of existing mines is active, local insurers are achieving sufficient security ratings to be included in potential markets for mining risks. Good examples of this are Brazil, China, Russia, South Africa, and Australia.

**Challenges**

The financial risks such as Advance Loss of Profit or Delay in Start Up where a significant claim can result from a relatively small physical damage loss remains one of the areas of attention by construction insurers. Technical issues or projects which include furnaces, heavy or tandem lifting, refractories, tailings dams and associated works such as ports, jetties or other ‘wet’ risks continue to keep the overall average rating for these projects higher than they would normally fetch.

Generally speaking, mining contracts are built using an Engineering Procurement Contract Manager (EPCM) or a Project Management Contractor/Company (PMC) structure with a multi-contractor structure, vendors or suppliers responsible for delivery. This, plus the high degree of mobile activity (using in many cases large, high valued mechanical equipment), creates in the mind of an underwriter an increased Third Party Liability risk, particularly one relating to contractor-to-contractor. Such a risk is indemnified by a Cross Liability Extension under a Third Party Liability policy.

Similarly, in view of the “residual” risks associated with mining of natural resources, insurance markets generally feel that the pollution exposures even on a ‘sudden and accidental’ basis to be higher than normal. The wider design cover known as LEG3 or DE5 and the wider maintenance cover of Guarantee remains a hard negotiation issue with the markets. The corresponding “risk of loss” or indemnity provisions in contracts remain as important to get right as other insurance provisions. The markets remain firm in not providing these covers (independently or together) without good reason to do so.
DIRECTORS & OFFICERS
CURRENT D&O MARKET CONDITIONS
We are emerging from a turbulent year for the financial markets which has seen significant corporate failures and a flurry of regulatory activity in just about every developed market.

High profile claims against directors and officers have dominated the financial press headlines, and there has been heightened investor and political criticism of corporate governance and of excessive senior officers’ pay. Despite this, the market in commercial Directors and Officers insurance in London has remained on a relatively even keel.

While rate increases have been seen for the financial institution sector, claims activity within the commercial sector has been benign, with premiums still outstripping losses. For companies who are able to positively differentiate their risk profile, there are still premium savings to be secured on renewals, albeit the savings are less than they were a year ago.

Over the last three months insurers reported an averaged premium reduction of 4% which was slightly higher than predicted in the preceding quarter. In the next three months, insurers canvassed expect rates to continue to decline at around 3% on annual renewals falling in that period.

The frequency of claims in Europe have increased over the year due to the economic conditions. Most of the circumstances relate to insolvency or investigations into board members.

"OVER THE LAST THREE MONTHS INSURERS REPORTED AN AVERAGED PREMIUM REDUCTION OF 4% WHICH WAS SLIGHTLY HIGHER THAN PREDICTED IN THE PRECEDING QUARTER."

DIRECTORS AND OFFICERS
HOT TOPICS FOR D&O COVERAGE FOR MINING COMPANIES IN 2010

Capital Raising in 2010
Due to precious metal price increases and the improving stock market over recent months a number of mining companies have announced share offerings to raise funds. This capital raising in turn increases exposure for the board to claims relating to this capital raising.

Accordingly, a rigorous review of their current Directors and Officers Insurance Policy should be undertaken. Due to the soft market over recent years policy wordings have changed to automatically include these capital raisings although there could be a limit on size or where the raising is to occur. Listings in the U.S. for an international company may not be covered automatically under their current D&O policy.

An alternative approach that some companies have taken is to take up Public Offering of Securities Insurance to ring-fence any increased exposure to the listing and protect their own current D&O policy from being eroded. This product protects the company as well as the board from any claims relating to the prospectus itself.

This policy is purchased prior to the listing occurring and also offers several extensions.

Increased Regulator Cooperation and Investigative Activity
Whilst the following comments do not include any miners, this happy fact may well change due to the FSA’s very publicly avowed increased strictness. They mean to be seen to have teeth. Furthermore, while the FSA’s authority is of limited direct reach, its publicly aggressive stance should be seen as representative of their corresponding authorities, around the planet. These comments apply equally to the office of Fair Trading and Antitrust.

It is estimated that about 50-60% of notifications under D&O policies are for investigations.

In the U.K., there is a clear regulatory will to improve enforcement. For example Hector Sants, the CEO of the Financial Services Authority (whose head-count increased from 225 to 320) said in a speech in March 2010 that he wanted people to be ‘frightened’ of the FSA in what is a clear statement of intent with regard to increased enforcement.

Such increased will to action has been underscored by GBP 27.3 million in financial penalties during 2008 (vs. GBP 14 million average) and some 58 individuals prohibited.

The focus is to be on increased enforcement under existing rules rather than for new rule-making, with a particular focus on the activities of non-executive directors, and overall risk management.

Some examples:
- The Financial Services Authority fined Royal Dutch Shell GBP 17 million for market abuse
- FSA fined Philippe Jabre, then managing director at hedge fund GLG Partners LP, GBP 750,000
- Proposals to fine individuals up to 40% of total compensation – consultation ends in October

Office of Fair Trading and Antitrust:
- EC and antitrust regulators in E.U. can fine companies up to 10% of revenues
- OFT GBP 18 million fine for Kier Group this year amid fines to U.K. construction companies (2009)

"They mean to be seen to have teeth"
Increased Cooperation between Regulators
There is a growing appetite for increased and improved enforcement, and this can be seen at a local level in just about any jurisdiction. What is interesting, however, is the increased cooperation between regulators on an international basis. For example, the Securities Exchange Commission have published data on inward and outward requests for securities enforcement assistance, and during 2008 there were over 1000 such requests made (about 60% outward, and 40% inward).

The International Association of Securities Commissions (IOSCO) is a membership organisation of the securities regulators of 109 countries, representing 95% of global capital markets. IOSCO exists to help its members:

- Cooperate together to promote high standards of regulation in order to maintain just, efficient and sound markets.
- Exchange information on their respective experiences in order to promote the development of domestic markets.
- Unite their efforts to establish standards and an effective surveillance of international securities transactions.
- Provide mutual assistance to promote the integrity of the markets by a rigorous application of the standards and by effective enforcement against offences.

IOSCO is currently pushing through a Multilateral Memorandum of Understanding which contains provisions for the exchange of information protected by banking secrecy laws, which could prove to be a significant shake-up of how cases of tax fraud are handled.

For Example
UBS recently settled a U.S. cross-border case involving the Department of Justice. They were ordered by the Swiss Financial Supervisory Authority to transfer client details to the Department of Justice who were suspected of tax fraud.

In the U.S., the SEC is highly active in enforcement:
- 3,500 employees
- 2008 saw the second highest number of enforcement actions in SEC history at 671
- Insider trading enforcements up 25%
- Market manipulation enforcements up 45%
- 2004-2008 the SEC levied USD 12.9 billion in fines and disgorgements
- Enforcement action settlements reached three-year high in 2008 at around 740 (about 80% with individuals)
- Tracking to slightly exceed this in 2009
"LISTINGS IN THE U.S. FOR AN INTERNATIONAL COMPANY MAY NOT BE COVERED AUTOMATICALLY UNDER THEIR CURRENT D&O POLICY."
LIABILITY
LIABILITY

MARKET UPDATE
When we reviewed the market in the last edition we detected signs of a hardening market. The reality at the beginning of 2010 is rather different. Whilst the market could be described as generally flat there is little evidence that rating increases have been made to stick, whatever the ambitions of insurers. There are some territorial and industry sector variations.

A number of insurers were predicting rate rises of 10% to 15% in 2009. Undoubtedly, even then, some of these predictions were an attempt to talk the market up. The reality is that capacity remains in good supply for most industry sectors. However it is true that rate reductions are harder to find. Flat renewal terms are usual with rate reductions only available for clean, less exposed risks.

There are significant forces pushing back against insurers’ ambition to restore margins. The economic situation is reducing demand for insurance, leaving insurers fighting to maintain revenue. Insurance buyers are under pressure to cut budgets to reflect the pressures in the wider economy. Price increases meet heavy resistance and ultimately some buyers will reduce cover to contain costs.

In the final analysis the fact that plentiful capacity exists for most risks means that unless insurers are prepared to see revenue reduce they will not see significant upward pricing adjustments. It is interesting to note that a number of London market insurers have announced that they will increase the capital available to take advantage of perceived market hardening. There are therefore key factors slowing any change and which could in the end lead to a return to further softening particularly if world economies stay in recession for longer than currently anticipated. Reinsurance treaty terms are an important factor in determining the direct market conditions. As Willis Re report in their latest review there is little or no upward pressure on liability treaty pricing.

There are still geographical variations in the market. Fierce competition for liability business remains a feature of many local markets, particularly in Asia. The insurance micro-climate in this part of the world is seeing a steady increase in available capacity as London based insurers expand their networks to capture more locally generated business.
The market could be described as generally flat. There is little evidence that rating increases have been made to stick, whatever the ambitions of insurers. There are some territorial and industry sector variations.

**CAPACITY**

Overall market capacity remains buoyant. Our chart illustrates the steady increase in capacity in USD billions over the past decade. This is slowing but has not stopped.

For heavier mining risks practical capacity available for heavier risks is lower but still sufficient for most needs.

Where capacity for such risks above USD 500 million is required it will probably be on a Bermudan occurrence reported form.

For those insureds who have particular concerns about the long-term stability of certain insurers, the level of effective capacity will be lower. This have some effect on competitive leverage and therefore pricing.

The outlook remains positive with new insurers appearing, particularly for catastrophe excess cover with Iron Star in Bermuda being the latest entrant as we go to print.

**MINING SECTOR OUTLOOK**

In the absence of major losses it seems unlikely that there will be any significant change in the liability market in 2010 which will have a serious impact on the mining sector.

Overall capacity available for mining risks is less than that available to some other industry sectors particularly where there is a significant underground exposure. This is counterbalanced by the generally lower limits purchased by this sector. There is thus sufficient capacity competing for risks.

**UNDERWRITING FOCUS**

The relatively flat pricing environment in the insurance market has not reduced the need to provide good quality underwriting information. In fact - if anything- underwriters are under internal pressure to demonstrate an increasingly thorough approach to the underwriting process.

The mining sector has some difficult risk exposures which do receive particular attention. Underground mining risks in territories where excess workers’ compensation or employers’ liability are included in general liability provide a clear example. The numbers of workers underground, especially at shift changes, is a key exposure factor.

Another major issue is the operational structure of many facilities with much of the work being undertaken by contractors. This, in effect, means that there may be a number of different third parties working together. The allocation of risk by contract then becomes a key issue. Insurers will be particularly concerned to understand how health and safety issues are managed. We are aware of a number of incidents, some involving fatalities that could be attributed to failure to manage contractors on mine sites.

It is increasingly valuable to incorporate liability exposures in risk engineering surveys. This is becoming a routine element of best practice which pays dividends both in risk management and placing outcomes for the client.
MARINE, SPECIE & PIRACY
MARINE, SPECIE AND PIRACY

MARINE CARGO
IT’S STILL A BUYER’S MARKET
The increase in global cargo underwriting capacity has created a competitive marketplace. Not only is the market very competitive on pricing but insurers are willing to negotiate and provide broader coverage, deductible buy-downs and long term deals. Insurers hope that this will differentiate them from competitors and grow their business.

BUYER BEWARE
It should be noted however that such a competitive environment can create its own problems. The pursuit of low-priced deals can lead to compromise on the quality of security, not only financially but also in terms of service and approach to claims handling.

The pressure on brokers and agents to deliver on budgets can lead to those less attentive to regulation and compliance to compromising standards. Eventually, such short-term activity can carry its own dangers when, for example, a contract is disputed in the event of a claim.

MARKET LOSSES AND TRENDS
Market confidence has been boosted by the lack of any single major catastrophe in recent years. However, the last twelve months have seen a noticeable increase in the number of reported losses, not an unexpected development in a recession.

This increase in attritional losses will ultimately make an impact but initially the effect will be account-specific, especially for those policies where the risk has been transferred from the balance sheet to low-priced insurance.

Below are detailed the twelve largest cargo losses advised to Lloyd’s for the period 01 April 2008 to 31 March 2009. This only includes losses where Lloyd’s of London markets participate on the account but it highlights the fact that there have been no ‘market-wide’ losses.

"THE PURSUIT OF LOW-PRICED DEALS CAN LEAD TO COMPROMISE ON THE QUALITY OF SECURITY, NOT ONLY FINANCIALLY BUT ALSO IN TERMS OF SERVICE AND APPROACH TO CLAIMS HANDLING."
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</tr>
</thead>
<tbody>
<tr>
<td>Misappropriation of gasoil</td>
<td>05/01/2009</td>
<td>Kenya, Africa</td>
<td>USD 42.3 million</td>
</tr>
<tr>
<td>Water damage to cotton - Hurricane Ike storm surge</td>
<td>12/09/2008</td>
<td>Galveston, Texas</td>
<td>USD 20.6 million</td>
</tr>
<tr>
<td>Vegetable oil contamination</td>
<td></td>
<td>Ukraine</td>
<td>USD 17.0 million</td>
</tr>
<tr>
<td>Shortage of oil from storage tanks</td>
<td>13/01/2008</td>
<td>Novorossiysk, Russia</td>
<td>USD 16.68 million</td>
</tr>
<tr>
<td>Crane fall onto satellite unit</td>
<td>09/08/2008</td>
<td>Baikunor, Kazakhstan</td>
<td>USD 14.95 million</td>
</tr>
<tr>
<td>Sinking of vessel carrying gold/silver bullion</td>
<td>18/01/2009</td>
<td>Off Argentina</td>
<td>USD 13.0 million</td>
</tr>
<tr>
<td>Fire damage to drilling equipment in warehouse</td>
<td>25/10/2008</td>
<td>Houston, Texas</td>
<td>USD 8.99 million</td>
</tr>
<tr>
<td>Hail damage to vehicles</td>
<td>22/06/2008</td>
<td>Emden, Germany</td>
<td>USD 8.63 million</td>
</tr>
<tr>
<td>Fire in canning warehouse</td>
<td></td>
<td>Melton Mowbray, U.K.</td>
<td>USD 5.6 million</td>
</tr>
<tr>
<td>Armed robbery of computer goods</td>
<td>01/02/2008</td>
<td>Sao Paulo, Brazil</td>
<td>USD 5.36 million</td>
</tr>
<tr>
<td>Fire at warehouse</td>
<td>12/05/2008</td>
<td>Thailand</td>
<td>USD 5.2 million</td>
</tr>
<tr>
<td>Sea-jacking of vessel. Ransom demand</td>
<td>20/07/2008</td>
<td>Australia - Europe</td>
<td>USD 4.5 million</td>
</tr>
</tbody>
</table>

Source – XCS Cargo Department/Joint Cargo Committee Circular JC2009/018. All V Risk Code except gold/bullion sinking.

A noticeable trend has also been that manufacturers and distributors have attempted to transfer more risk into the supply chain by way of specific contracts with forwarders and carriers.

**CARGO CLAUSES**

In January 2009, after an excellent consultation process between brokers and insurers, new Institute Cargo Clauses were released. The intention was that these would take over from the prior 1982 versions as the main basic clauses utilised for cargo insurance in the London market and also in many overseas markets throughout the World. The new clauses offer many improvements from the prior versions. They enhance coverage, update outmoded phraseology and correct anomalies. None of these changes should be detrimental to an Assured and it should be stressed that cargo insurers are still willing to work with the broker to tailor coverage to suit the particular requirements of an Assured.

**ROTTERDAM RULES**

Twenty-one states have now signed up to the Rotterdam Rules following the U.N.'s official ‘open for signing’ ceremony in Rotterdam on 23 September. If twenty states “ratify, approve, accept” or “accede to” the convention, it will come into force twelve months after the twentieth state has done so.

The essence of the Rotterdam rules is to provide a consistent door-to-door liability standard in contrast to the current variety of contractual terms. The scope of this convention is wider and will therefore include operators such as stevedores and road carriers. It is not currently clear how it will work with other conventions (for example, the Convention on the Contract for the International Carriage of Goods by Road (CMR)).

The underlying financial liability is higher than Hague Visby provisions at 875 Standard Drawing Rights (SDR) per package or three SDR per kilo as compared to 666.67 SDR per package and two SDR per kilo.

The Convention is complex and offers fewer defences to the carrier. Lawyers will need to be involved in providing advice, guidance and eventually claims litigation.

The most important single element of the Convention is contained within article 80 “volume contracts” which will allow freedom to contract on a more restricted basis of liability. The implication of article 80 is expected to be profound.

It is anticipated that when the new Convention is enforced there will be a considerable impact on shippers, forwarders, Non Vessel Operating Common Carriers (NVOCC), terminal operators, stevedores and carriers.
THE SPECIE SECTOR: EMERGING FROM THE GLOBAL FINANCIAL CRISIS?

The global diamond mining industry has suffered along with many of the world’s other industries in the past 12 months. This has possibly been the most challenging period faced by the global diamond mining business, as product inventories have risen and prices fallen. As a result, the sector has experienced serious difficulties. Since late 2008, production had been suspended at some of the world’s largest and (previously) most profitable diamond mines. In the last six months, however, the majority of mines have resumed operations, but below maximum capacity and, in some cases, as the cheaper alternative to remaining closed for too long when start-up costs are factored in.

This has a naturally depressive impact on the insurance market, as reduced insurable interest, combined with the drive by clients for rate reductions means there is, simply put, less money available for the purposes of underwriting. As a result there has been the inevitable knock-on effect into the insurance market – we are observing that many of the larger operators are retaining more risk on their balance sheets and some within the small-middle size market sector are electing to self-insure.

The Insurance Market for bullion and precious minerals is, on the whole, the same as that for Cash in Transit business. This is a relatively small market – with under 30 specialist syndicates – all of whom will have suffered some losses in Cash in Transit over the last year. However, the transit and storage risks for mining operators have generally proved to be profitable. The worldwide economic crisis over the last year combined with low interest rates has affected investment income for the insurance market. Underwriters have, therefore, become increasingly demanding in terms of security requirements of their insureds.

Premiums in the Specie market remain stable and competitive and continue to be driven by the insurer’s perspective on the client’s Enterprise Risk Management strategies and their own appetite for a particular risk and territory. Insurers display a willingness to broaden terms by offering certain extensions to the standard cover for minimum additional premiums and in some cases at no charge.

So far the insurance market has reacted sympathetically when reviewing annual renewal terms and mid-term renegotiations on three year deals. The market is specialist and flexible.
In the last 12 months there has been a well-publicised surge in the number of pirate attacks in the Gulf of Aden. In 2009 alone, there were over 130 reported pirate attacks off the coast of Somalia and 28 ships seized. Somali pirates marked New Year’s Day 2010 with a flurry of attacks, hijacking two ships in the Gulf of Aden – including a car-carrier and a chemical tanker. A total of four ships were taken in a five-day spell at the beginning of 2010. They are clearly indifferent as to the freight borne by the vessel – this has clear and alarming implications for the global transport of ores and specie. Although there was a lull due to bad weather, since the southwest monsoon ended there was a resurgence in the number of pirate attacks. Furthermore, as many vessels had been ransomed and released, it seemed likely that the pirates would attempt more attacks to replace these vessels.

Piracy is not confined to the Gulf of Aden. Following the extensive press coverage of the Somali pirates, there has been an increase in reports of pirate attacks in Brazil, Nigeria, Malacca Straits, Thailand, Vietnam and the South China Sea. Notably, the number of reported attacks is far less than the number of actual attempted attacks. Clearly, the success of the Somali pirates has inspired criminal elements globally.

Piracy is constantly evolving. Somali pirates have now adapted to the safety measures taken by ship owners, the introduction of the Internationally Recommended Transit Corridor (IRTC), and the fact that the crew are often worth more than the cargo. Also, modern pirates have taken advantage of modern technology. Pirates communicate with radios and mobile phones, they use modern weapons, and they can even use the internet to evaluate the worth of their ‘booty’.

Since the adoption of the IRTC pirates have attacked vessels further out at sea, over 800 nautical miles off the coast of Somalia and East Africa, as well as in the Red Sea, the Straits of Bab El Mandeab and off Oman. By attacking in a variety of locations and at extreme ranges, pirates avoid the Combined Maritime Forces (CMF). Also, at these distances the Masters of the vessels are lulled into a false sense of security and reduced alertness and readiness.

The pirates have been most successful against vessels that are travelling at a low speed and have a low freeboard - such as freighters carrying raw materials. Other factors that make crews and vessels vulnerable are where there has been inadequate planning and procedures, where the vessel is in a visibly low state of alert and where a slow response by the ship is evident.

In situations where the crew have responded rapidly and have prevented the pirates from boarding, the pirates have often given up quickly, and attempted to find an easier target.

Some experts have argued that such anti-piracy training should be considered standard for the crew prior to a Gulf of Aden transit, so that the vessel be considered ‘seaworthy’. In The Marine Insurance Act (1906), Section 39 provides the following definition: “A ship is deemed to be seaworthy when she is reasonably fit in all respects to encounter the ordinary perils of the seas of the adventure insured.” Thus, it could be claimed that anti-piracy training is required for the vessel and crew so that they are ‘deemed fit’ to meet the perils of the Gulf of Aden. Such training motivates the master and crew and has proved to be the best defence against pirates. Training and drills, as highlighted in the “Best Management Practices to Deter Piracy in the Gulf of Aden and off the Coast of Somalia Feb 09” mean that the crew are ready to respond. As highlighted earlier, such responses mean that the pirates often withdraw their attack in search of an easier target.

Simple physical measures can also deter pirates. Options include water cannons, barbed wire, and greasing or electrifying handrails. The crew can be provided with equipment such as Kevlar jackets and simple detection equipment. Minor adjustments can help dramatically. For example, most attacks are from aft, yet this is where radars often have a ‘blind spot’. Such vessel hardening is not excessively expensive and can prove to be a very economical investment, especially when the worst case scenario is considered.
Another measure that many ship-owners have considered is armed guards on board. However, most Underwriters warn against using armed guards and it may in fact prejudice ship-owners’ insurance cover. There is a risk that armed guards will fire upon innocent fishermen. Apart from the unnecessary loss of life, this would cause complications for the ship-owners and raise serious legal issues. There is also a risk that by using arms, the level of violence will escalate and the pirates will use ever more potent weapons. There are also legal issues with carrying arms on board: there are Flag State and Port State restrictions and licensing requirements.

Once a vessel is taken, there are various costs incurred, among them: consultant fees; transport of ransom, lawyers, and counselling for the crew. Obviously, the ransom is the most publicised cost. Recently, negotiations with pirates have been drawn out for longer. In the example of the HANSA STAVANGER, the pirates held the vessel for four months and changed their negotiator several times, often reneging on agreements and increasing their demands. Ransoms have tended to range from USD 500,000 to USD 2 million. Another cost that should be considered is the Loss of Hire or Earnings. A normal Loss of Hire insurance policy only covers a Loss of Hire due to physical damage. Therefore, piracy is unlikely to be covered.

Most costs are usually covered under a Ship-owners’ Hull and Machinery, War, or Protection and Indemnity policy. Previously Ship-owners have recovered money as a ‘General Average’ expense from cargo, though the case of the MALASPINA CASTLE has now challenged this assumption. In this recent case, the Hangzhou Cogeneration Import and Export Co, China had engaged Navalmar’s vessel MALASPINA CASTLE to ship a cargo of iron ore to China. The vessel was hijacked by Somali pirates while en route to China and was released after payment of a USD 1.8 million ransom. The ship-owner faces an additional cost of USD 2 million for negotiating, delivering and insuring the ransom in transit as well as potential claims from the vessel's crew. Ship-owners generally pay the ransom and additional costs up-front and then seek pro rata reimbursement from all parties involved under the law of General Average. This principle equitably apportions costs resulting from voluntary losses incurred to save a vessel in distress. In the case illustrated above, Hangzhou is disputing its share of the total costs. Even when there is cover, there have been cases where there is a significant delay and it has taken longer than a year for underwriters to reimburse the Insured.

In order to avoid such conflicts and ensure cover, many ship-owners have chosen to take out specific coverage for the risk. This additional cover not only brings peace of mind but also ensures that there are no gaps in cover. Willis has worked with Special Contingency Risks Limited (SCR) and Maritime and Underwater Security Consultants (MUSC) to provide a product called Vessel Shield™. This product not only covers ship-owners for the ransom payment and all additional related costs, but it also seeks to mitigate the physical security risk as well, putting in place wide-ranging measures to train the crew, protect the vessel and plot the safest possible route through areas of pirate activity.

Although Vessel Shield counters many of the problems that ship-owners and their vessels face due to the threat of piracy it does not solve the problem of piracy itself. Piracy in the Gulf of Aden is inextricably linked to the problems of Somalia. The failed history of the U.S. and U.N. peacekeeping missions in Somalia and the lack of political will means there is no impetus for intervention. Nor is there any urgency for action: as the pirates in the region are proving to be commercial opportunists and are predominantly peaceful. However, in September 2009, off the Somali coast, there was an incident where the captain was shot dead because he refused to change his course. It is likely that this will remain an isolated incident and that pirates will refrain from violence because they are well aware that executing hostages makes payment of ransom far more difficult to secure. Therefore, the saga of piracy and the instability in Somalia is likely to continue.
"THE PIRATES HAVE BEEN MOST SUCCESSFUL AGAINST VESSELS THAT ARE TRAVELLING AT A LOW SPEED AND HAVE A LOW FREEBOARD - SUCH AS FREIGHTERS CARRYING RAW MATERIALS."
POLITICAL RISK
APPLICATION OF POLITICAL RISK INSURANCE TO THE MINING INDUSTRY

INTRODUCTION
The mining industry is among the most vulnerable to Political Risks in emerging markets. Due to its importance to host economies, mining projects can easily become flash-points for nationalist debate, often leading to governmental expropriations, licence cancellations and contract “reviews”. These experiences are familiar to commodity producers in many countries, especially as resource nationalism resurfaces.

In particular, companies with interests in Bolivia, Venezuela, Guinea-Conakry, Indonesia and Iran have all faced these pressures. Meanwhile, extractive projects often become targets of political violence and terrorist threats as a result of their close association with host governments. In other cases, the presence of wealth-producing assets in destitute areas can lead to bombings and other attacks as local anger is directed against the symbolic assets.

THE RISE OF RESOURCE NATIONALISM
Recent years have seen an increased risk of expropriation of mining assets with mining companies and financiers having found themselves having to address a new set of challenges. There has been a general willingness by host governments to ignore agreements they have entered into in favour of their desire to increase political and socio-economic capital by blaming western companies for the problems within their countries.

WHAT HAS CAUSED THIS CHANGE?
• Populism and nationalism as embodied by Hugo Chavez in Venezuela.
• The knock on effect to neighbouring companies such as Bolivia and Ecuador or in the case of Russia with Ukraine and Georgia.
• Increasing raw material prices fuelled by Chinese and other Asian demand.
• A desire to restore a country’s prestige as evidenced by Vladimir Putin in Russia.
• A desire to right perceived exploitative historical wrongs carried out by sophisticated Western companies on naïve host governments.
• Resentment of Western, and particularly U.S., influence.
• The rise of alternatives to Western investors such as Chinese and Russian companies who are perceived by host governments to be “easier” to deal with.

RISKS MINING COMPANIES FACE
• Inability to access legal protection.
• Forced renegotiation at any time in the exploration process.
• NGO activity leading to less support from the mining company’s own government.
• Removal/renegotiation of title or concessions.
• Tax increases on profits.
Some Recent Mining Political Risk Incidents

- **Zimbabwe**
  - Implementation of the “Indigenisation and Economic Empowerment Act” with effect from 17 April 2008.
  - Government proposal of Zimbabwean ownership of 51% of foreign companies.

- **Indonesia**
  - Newmont Mining’s ongoing dispute with the government relating to the Batu Hijau. The Indonesian’s government threatening expropriation and cancellation of “contract of work” unless Newmont’s subsidiary, PT Newmont Nusa Tenggara” does not sell 10% of its stake to the local government.

- **Chile**
  - Strikes at the Teniente Copper Mine (world’s largest) resulted in loss for the owner.
  - Political Violence at the Chuquicamata due to pay disputes and work conditions.

- **Krgyzstan**
  - Expropriation (termination of licence/concession) of Oxus Gold’s stake in the Jerooy Gold Mine thus being forced to sell their shareholding of Kazakh Gold.

- **Ecuador**
  - Ecuador’s Constituent Assembly’s revocation of all mining concessions for a period of which could result in the expropriation of exploration lands without compensation. Furthermore, the Energy and Mines Ministry is preparing a new mining law.

- **Guinea**
  - The world’s largest bauxite producer is in dispute with several mining companies including RUSAL and Anglogold Ashanti.

- **Eritrea**
  - Execution of miners at mine owned by Chalice Gold Mine in Eritrea.

"There has been a general willingness by host governments to ignore agreements they have entered into in favour of their desire to increase political and socio-economic capital by blaming Western companies for the problems within their countries."
TYPES OF POLITICAL RISK INSURANCE FOR MINING PROJECTS

Political Risk Insurance is available for contractors, owners and financiers of mining projects. Whilst it can’t make “bad” projects “good” it can help mitigate many of the risks inherent in mining projects.

CONFISCATION, EXPROPRIATION AND NATIONALISATION:
(Confiscation, Expropriation and Nationalisation CEN) insurance forms the central pillar of cover, offering protection against acts of a foreign government that deprive the project sponsor of its ownership in the project company, its right to extract the resources, remove the extracted materials, or use its equipment to operate the project facilities. This can include cancellation or termination of any concession or operating agreement provided to the project company, forced abandonment of the project and selective discrimination by the host government of forced divestiture of the project assets. Cover for ‘creeping expropriation’ which is a series of acts over a period of time that ultimately have an expropriatory effect can also be provided.

EMBARGO:
Embargo cover can be provided to protect the project company against the introduction of any law, order or decree including the cancellation or non-renewal of any valid import, export, or transit licence which prevents or delays the import or export of goods and services into or out of the host country. This is particularly relevant to recovered commodities that are to be exported for overseas refining or sale.

POLITICAL VIOLENCE:
Political Violence protects against losses resulting from damage or destruction of project assets due to events such as war, civil war, riots, strikes, civil commotion, sabotage, terrorism, insurrection, rebellion, revolution, coup d’état or malicious damage.

CURRENCY INCONVERTIBILITY/EXCHANGE TRANSFER:
Cover can be provided against the inability of the project company to convert local currency into a freely convertible currency such as U.S. dollars or the inability to transfer hard currency funds out of the host country for the purposes of remitting revenues or profits back to the project investors and/or to service loan repayments. Situations where the project company is unable to make a deposit due to a government action can also be covered or where currency cannot be remitted following the cancellation of a permit allowing the project company to hold offshore accounts.

 BREACH OF CONTRACT:
This covers the breach of specific contracts by host governments such as a joint venture/production sharing agreements or off-take contracts where government or state-owned entities are off-takers of the resources being produced. This may take the form of Arbitration Award Default which can sometimes be extended to include Arbitration Frustration or Denial of Justice type covers. Where sovereign guarantees are issued to cover the performance obligations of the off-taker, non-honouring of the guarantee can also be covered.

MARKET INTELLIGENCE
The Political Risk market runs in cycles of approximately ten years. Within this period there are, generally, eight years of fairly low claims intensity followed by approximately two of high intensity. The credit crunch has meant that we are now in such a period with Political Risk claims estimated at anywhere between USD 2 billion and USD 4 billion. Claims have been concentrated in Ukraine and Kazakhstan but have also been seen in Brazil, Bahrain, Indonesia and Bolivia.
"In other cases, the presence of wealth-producing assets in destitute areas can lead to bombings and other attacks as local anger is directed against the symbolic assets."

Willis | Mining Market Review 2010 | 43
GENERAL MARKET OVERVIEW

Having already experienced significant pricing reductions and broadening of terms over the past few years, the uncertain and unstable global economic outlook at the start of 2009 had a direct impact on the Terrorism and Political violence market. As with other sectors, Insurers were not prepared to support further price reductions whilst their investment income was severely affected and cost of capital unknown. Accordingly, the Terrorism and Political Violence market entered a period of flattening rates.

However, as we move into 2010, the expected “hard market” has not materialised. Within the Terrorism market another year of minimal financial losses, coupled with a quiet windstorm season, has resulted in a return to the softening of prices albeit not at pre-2009 levels. Capacity continues to grow as Insurers seek to take advantage of the loss ratios and the stand alone Terrorism market capacity is approximately USD 1,750,000,000 (excluding Berkshire Hathaway).

TERRORISM AND POLITICAL VIOLENCE COVERAGE WITHIN THE MINING SECTOR

For Clients within the mining sector seeking Terrorism coverage, the overall market trend should apply in that there will be downwards pressure on pricing and readily available capacity. With regards to Political Violence Coverage, however, there have been a number of incidents within the mining sector, notably in South America, that have resulted in claims or potential claims to the insurance market. The claims have generally been as a result of Political Violence activities connected to pay disputes and work force conditions or opposition to mining operations from indigenous communities.

As a consequence the market conditions for Political Violence coverage for mining assets are bucking the trend seen within the overall Terrorism and Political Violence market. Not only are Insurers pushing for increased premiums, there is also a requirement for Clients to increase their retentions as a result of the perceived increased threat of Political Violence.

Capacity available is reducing and those Insurers willing to commit capacity will only do so on the receipt of detailed underwriting information. In particular, Insurers require information on security at mining locations, mine owners/operators relations with the workforce, trade unions (if applicable) and local community (including any local investment projects).

In addition, the perceived impact of mining operations on the local environment and the attitude of indigenous communities towards these operations will influence insurers in whether to commit capacity. Good and timely underwriting information incorporating commentary on these aspects will be key in securing support and competitive pricing from the market.
"MARKET CONDITIONS FOR POLITICAL VIOLENCE COVERAGE FOR MINING ASSETS ARE BUCKING THE TREND SEEN WITHIN THE OVERALL TERRORISM AND POLITICAL VIOLENCE MARKET."
SPECIAL REPORT

A CONSULTANT’S VIEW
INTRODUCTION

The mining industry, estimated to be worth approximately USD 2,000 billion annually, is important to us all as it provides many of the raw materials we rely upon for our day-to-day needs. The scale of the industry is vast, from world-class operations such as Grasberg in Indonesia, to the thousands of small-scale mines that exist globally.

For example, metals such as iron, copper, nickel, aluminium, and zinc, are vital for economic development. In addition, the precious metals including gold, silver and platinooids have a variety of uses such as a currency hedge (gold), jewellery, electronics and catalysts, whilst uranium is important as an energy source.

Similarly, industrial minerals such as coal, aggregates, clays, potash and phosphates are pivotal to our energy, construction, fertiliser and pharmaceutical needs.

This analysis will deal with the potential risks faced by the industry (excluding oil and gas) through the exploration, extraction, processing and aftercare of these resources and the implications this has for insuring the various parts of the mining business.

THE PROJECT CYCLE

It is worth outlining the various stages for project development, as each of these have their own inherent risks. Typically, there are five; “Grass roots” Exploration areas, Advanced exploration prospects, Pre-development projects, Developing mines and Operating mines.

The different stages of exploration and development carry variable levels of risk, which pertains to the likelihood of eventual or continued mineral production. As a property advances from the exploration stage, through the prospect evaluation stage, and on to the production stage, more information is collected to estimate resources and reserves, enabling studies to be carried out and thereby reducing the project risk factor.

Thus, as a project approaches maturity, knowledge will be gained on technical and economic issues such as geological, mining engineering, mineral processing, metallurgy, infrastructure, environmental, social, Health and Safety, financial, commercial and legal, as well as issues such as project ownership, structure, permitting, marketing and government relations.
Examples of insurance products/policies that match the five stages of the project cycle:

- **Grass roots**: Directors and Officers, Third Party Liability, Professional Indemnity, Prospectus Liability, Political Risk;
- **Exploration areas**: Accident and Health, Contract Plant and Machinery, General Liability, Employers Liability, Political Risk, Environmental Liability;
- **Advanced exploration prospect**: Accident and Health, Contract Plant and Machinery, General Liability, Employers Liability;
- **Pre-development projects**: Accident and Health, Contract Plant and Machinery, General Liability, Employers Liability, Construction;
- **Developing mines and Operating mines**: Construction, Advanced loss of profit/revenue, Operational physical loss or damage and consequent loss of profit/revenue, Terrorism (Riot, Strike, Civil Commotion), Environmental Financial Assurance for Mine Closure and Rehabilitation.

"There has been a recent increase in regulatory control of operations in OECD nations to make directors, managers and workers increasingly personally liable for environmental incidents."
RISKS TO THE INDUSTRY

Mining is inherently a high-risk business as it deals with the extraction of naturally-occurring materials, where some risks can simply not be quantified. However, assuming a viable project has been identified, is partially developed, or is in production, the following risks are most commonly found.

COUNTRY RISK
Unfortunately, man has no control over where commodities are found and therefore the geographical location of an orebody is an important issue with regards to security of tenure, political instability as well as personal security. As such, insurers and banks devise country risk ratings which reflect the perceived level of risk.

An example of security of tenure issues is First Quantum Mineral’s suspension of the build of the Kolwezi tailings copper mine in the Democratic Republic of the Congo, following actions taken by DRC authorities characterised by First Quantum as “illegal”. The future of the USD 593 million mine, 65% owned by First Quantum, and currently described as 65% complete, remains in doubt (2009).

Political Risk insurance covers expropriation (including confiscation, nationalisation, requisition, sequestration and deprivation by law, order, decree, directive or administrative decree of the Government of the Foreign Country), contingent business interruption risk, expected foreign investment risk, forced divestment and/or abandonment as well as selective discrimination.

Country risk could incorporate Kidnap and Ransom, Terrorism, Riots Strikes and Civil Commotion. Additionally Accident & Health risks may be cover incidents and accidents to property and health of employees and third parties.

GEOLOGICAL & GEOTECHNICAL RISK
The level of geological risk associated with a project should be relatively low assuming proper exploration has taken place. However, the actual geometry of the orebody may be different to that predicted, there may be increased faulting which might displace the ore zones, coal can typically suffer washouts and burning where intrusives interrupt the coal seam, there may be changes in mineralogy of the ore which may lead to processing problems, and less commonly, some reactive sulphide deposits can self-combust in air creating unique mining problems, for example, Ketchup Flats in Nevada.

Other geologic risks may include volcanic and earthquake activity, which are not uncommon, as ore deposits are often formed in these geologic environments.

From a geotechnical standpoint, slope failures present a major risk to open pit mining operations. One of the most public events recently was the 7.5Mt rock fall at the Kumtor gold mine in Kyrgyzstan in 2002 which caused loss of life and disrupted production for several months. Slope failures also occur on tailings dams and waste dumps, sometimes with tragic consequences (Aberfan coal tip failure, South Wales).

In underground operations, rock falls are an ever-present danger, and in deep mines, rock bursts caused by the high rock pressures, add to the risk. In addition, catastrophic flooding is also a potential risk in geologically wet areas.
RESOURCE RISK

The viability of a mining operation depends to a large extent on the size and grade of the resource. Unfortunately, no matter how thorough the exploration programme is, there will still be uncertainty regarding this resource estimate until, ultimately, the material is extracted. Thus, any small errors incurred during the sampling of an orebody from, commonly, drilling, the analysis of the samples, density determinations, or the resource estimation process itself, can be compounded to produce significant errors, particularly in those types of deposit that have a highly variable grade distribution, for example many types of gold deposit.

As an aside, the estimation of gold resources is not averse to fraud as exemplified by the Bre-X case when the company falsified results to create an enormous fictitious gold deposit at Busang in Indonesia with a market capitalisation of over CAD 6 billion. The share price went from a few cents to nearly CAD 267, before collapsing in 1997. However, some good did come out of what was arguably the world’s largest mining fraud in that the scandal did lead to the inception of tighter corporate governance rules worldwide. This constitutes a business risk.

The risks within mining are many and varied, some of which have already been touched upon such as ground conditions and geological uncertainty. In general, the underground environment is likely to present more potential risks than open pit, although the mining techniques adopted, grade control estimation, overall mine design, equipment selection and maintenance, ventilation (if underground), power and water requirements, handling of ore and waste and transportation all are areas where problems can occur.

Underground mines also introduce the added risk of fire and gas explosions, both of which can prove catastrophic to a mining operation.

These can lead to Operational Material Damage and may require consequent Business Interruption policy.

"HOWEVER, SOME GOOD DID COME OUT OF WHAT WAS ARGUABLY THE WORLD’S LARGEST MINING FRAUD IN THAT THE SCANDAL DID LEAD TO THE INCEPTION OF TIGHTER CORPORATE GOVERNANCE RULES WORLDWIDE. THIS CONSTITUTES A BUSINESS RISK."
METALLURGICAL RISK
The design of a processing plant should be based on rigorous testwork on representative samples of run-of-mine ore. However, potential risks are that the tested ore is not representative of the actual production with resultant lower recoveries, there may be unforeseen deleterious elements within the ore which may generate potential penalties, the valuable metals may not be freely liberated, or the ore may be refractory (very difficult to treat). However, with the appropriate technologies such as BIOX® (which uses bacterial leaching to oxidise a gold ore), such ores can be successfully treated, as at Suzdal in Kazakhstan.

Whilst this is undeniably a business risk it may be prudent to consider coverage for Construction risk or Products Liability.

ENVIRONMENTAL & SOCIAL
At the beginning of the 21st Century, the importance of sustaining the environment and society has never been more emotive. The mining industry, like others, must comply with national, and ideally, international best practice.

As with all industries, there are inherent risks which may have an impact on the environment such as liquid spillage, which can affect both surface and groundwater, air and noise pollution, acid-rock drainage from either disused workings or waste dumps, and the overall visual impact of operations. Social issues may include resettlement and the problems of artisanal miners. In addition, operators may acquire historic environmental liabilities when redeveloping a previous mining operation.

However, from a media perspective, problems with tailings dams always seem to make the news. In 1998, the Aznalcollar tailings dam failure in Spain caused significant environmental damage and an international outcry. The incident was thought to have been caused by foundation failure, although it has much to do with on-going site management, as tailings dams in particular are still “active” often long after a mine has closed. Incidents such as this have brought about changes in legislation and an increase in environmental insurance risk, or can expose a company to potentially punitive fines or personal liability.
Risk mitigation measures can give confidence to investors and lenders in mining projects in potentially high-risk markets and improve knowledge of country conditions. These tools can also provide comfort that possible losses arising from non-commercial risks are less likely to occur and may be compensated for in the event that they happen.

In an effort to mitigate risk, from an operator’s standpoint, the correct planning, design and construction of a mine is vital followed by appropriate management and monitoring with a strict health and safety code. Proper maintenance and inspection is also required along with long-term assurances for the mine post-closure, which may include some form of bond or financial assurance arrangement to ensure satisfactory mine closure and rehabilitation. More specifically, for example, a good maintenance policy will reduce accidents and improve productivity, whilst geotechnical monitoring will minimise roof collapse and slope failure. Nevertheless, even with the best plans, technical difficulties may occur and accidents may happen. It is the role of an effective management system to mitigate these risks. Failure Modes and Effects Analysis (FMEA) is becoming an increasingly effective tool in assessing and managing risks and promoting sustainability. FMEA is considered to be a top-down, expert system approach to risk identification, quantification and prioritisation of mitigation measures.

The key initiative, from an insurer’s viewpoint, is to ensure that before any project is taken on, a thorough due diligence process is instigated to properly evaluate the potential risks to the business. It is essential that the evaluation team include representatives who understand the technical, regulatory and environmental requirements as well as the mine’s design, construction, operation and performance.

In cases where substantial risk has been identified and where failure could result in severe impacts, comprehensive and committed risk management will be required. Project environmental and social impact assessments (ESIA) are central to the process of risk management. The scope of an ESIA will depend on the nature, extent, scale and degree of impact of a proposed project. Independent consultants often work with their clients to define the parameters at the earliest stage and will normally be required to follow the internationally accepted performance standards and guidelines set by the World Bank Group or other leading authorities. Increasingly, government, industry and community organisations are working as partners in major mining projects.

Environmental and social risk management is set to play a greater role in the management of mining in the future than it does today. Performance-based regulatory requirements are one of the drivers of this trend. In this regard, there has been a recent increase in regulatory control of operations in OECD nations to make directors, managers and workers increasingly personally liable for environmental incidents. This has already resulted in a corresponding increasing resort to risk analysis/assessment to demonstrate due diligence as an aid to defence in the case of legal proceedings. Society has become increasingly litigious which has reinforced the need to demonstrate strong risk management measures.

There has also been a wide introduction of risk and performance based approaches into regulatory matters has extended into occupational/ community health and safety matters, the transport and handling of dangerous goods, land use control, climate change, greenhouse gas emissions and sustainability. Risk management in mining will therefore continue to grow in importance.

"SOCIETY HAS BECOME INCREASINGLY LITIGIOUS WHICH HAS REINFORCED THE NEED TO DEMONSTRATE STRONG RISK MANAGEMENT MEASURES."

Courtesy of Wardell Armstrong
ENVIRONMENTAL RISKS AND INSURANCE SOLUTIONS

The environmental responsibility of mining operations is the protection of the air, land, and water. Mining resources have been developed worldwide for nearly two centuries with few environmental controls. This is largely attributed to the fact that environmental impacts were not understood or appreciated as they are today. In addition, the technology available during this period was not always able to prevent or control environmental damage.

All methods of mining affect air quality. Particulate matter is released in surface mining when overburden is stripped from the site and stored or returned to the pit. When the soil is removed, vegetation is also removed, exposing the soil to the weather, causing particulates to become airborne through wind erosion and road traffic. Particulate matter can be composed of such noxious materials as arsenic, cadmium, and lead. In general, particulates affect human health adversely by contributing to illnesses relating to the respiratory tract, such as emphysema, but they also can be ingested or absorbed through the skin.

Mining can cause physical disturbances to the landscape, creating eyesores such as waste-rock piles and open pits. Such disturbances may contribute to the decline of wildlife and plant species in an area. In addition, it is possible that many of the pre-mining surface features cannot be replaced after mining ceases. Mine subsidence can cause damage to buildings and roads. Water-pollution problems caused by mining include acid mine drainage, metal contamination, and increased sediment levels in streams. Sources can include active or abandoned surface and underground mines, processing plants, waste-disposal areas, haulage roads, or tailings ponds. Sediments, typically from increased soil erosion, cause siltation or the smothering of streambeds. This siltation affects fisheries, swimming, domestic water supply, irrigation, and other uses of streams.

Acid mine drainage (AMD) is a potentially severe pollution hazard that can contaminate surrounding soil, groundwater, and surface water. The formation of acid mine drainage is a function of the geology, hydrology, and mining technology employed at a mine site. The primary sources for acid generation are sulphide minerals, such as pyrite (iron sulphide), which decompose in air and water.

"THE ENVIRONMENTAL RESPONSIBILITY OF MINING OPERATIONS IS THE PROTECTION OF THE AIR, LAND, AND WATER. MINING RESOURCES HAVE BEEN DEVELOPED WORLDWIDE FOR NEARLY TWO CENTURIES WITH FEW ENVIRONMENTAL CONTROLS."
Many of these sulphide minerals originate from waste-rock removed from the mine or from tailings. If water infiltrates pyrite-laden rock in the presence of air, it can become acidified, often at a pH level of two or three. This increased acidity in the water can destroy living organisms, and corrode culverts, piers, boat hulls, pumps, and other metal equipment in contact with the acid waters and render the water unacceptable for drinking or recreational use.

Environmental Impairment Insurance has today become a necessary practice in the corporate world. Historically, environmental insurance has not formed a core part of a company's insurance programme. However, today the scene is different. Many companies are considering their environmental exposures for the first time. The fact that every business is at threat is driving them to reach new levels of preparedness in the fast-changing world. As the following two sections of the Review show, Environmental legislation is continually evolving and becoming more stringent as is the regulators' enforcement of the legislation.

Policy forms continue to evolve offering extensive coverage. However, businesses have the option to enhance their policies to cover claims and losses arising from various environmental factors. These policies help protect buyers as well as sellers from a variety of environmental problems in business transactions.

The purpose of pollution liability insurance is to provide coverage for a variety of potential pollution conditions that could occur and result in legal liability and expense for the mine owner or operator. The insurance is designed to respond to claims for clean-up costs and bodily injury and property damage that can occur as a result of both pre-existing and new pollution conditions. Pre-existing pollution conditions are those that pre-exist the inception date of the policy, regardless of when they are discovered or when a claim takes place. These conditions are of special concern to parties acquiring an existing mine operation for which they are unaware or uncomfortable with the past practices. These conditions are often also a concern for the mine's lenders and investors. “New” pollution conditions are those conditions that take place after policy inception.

Interestingly, bodily injury is now defined to include mental anguish. Property damage is defined to include natural resource damages, as well as diminution in value of third party property regardless of actual physical injury to that property. Pollution liability policies also provide the insured with coverage for legal defense costs and expenses incurred as a result of pollution-related claims, or for those legal fees necessitated as a result of the discovery of contamination.

Environmental insurance provides a financial backstop against potential catastrophic events associated with both historic and daily operations. It also enhances financing prospects by allowing creditor protections. It is a transferable asset to future investors or buyers. The Environmental Impairment Insurance policy mitigates the uncertainty of environmental liabilities. It is an external fund that enables a company to finance environmental loss. Environmental insurance is very flexible in nature. It provides protection against environmental threats and offers solutions to regulatory and contractual requirements, lender requirements, mergers and acquisitions and landlord requirements.

By kind courtesy of James Halfacree, Chartis
Mining by its nature is a major source of environmental degradation. Whilst modern mining techniques minimise the potential for environmental impacts, mining activities present a wide range of pollution-related risks. The most notable environmental loss associated with mining was the 1998 Aznalcóllar disaster in Spain, in which a burst tailings dam released toxic tailings slurries into a river impacting several thousand hectares of farmland, and threatening the Doñana National Park, a U.N. World Heritage Area.

The claim for clean-up costs and legal costs of EUR 90 million is on-going. Legal liability claims for losses from environmental damage caused by mining activity can have significant financial and reputational implications for mine owners, operators, contractors, shareholders and investors.

Growth in the environmental insurance market is being driven by tightening environmental legislation resulting in increasing ‘pollution gaps’ in general insurance coverages. Mining companies are now also faced with emerging E.U. financial assurance mandates to cover their environmental exposures from normal operations.

MINING INDUSTRY POLLUTION EXPOSURE EXAMPLES

Legal liability claims against mine operators can be brought under civil law and statutory environmental laws as a result of:

- Dust, odour and noise emissions from surface mining and coal/waste stockpiles
- Contamination of surface water, groundwater and land from chemical releases from stored fuels, oils and other hazardous substances required for mining operations, heating, etc
- Acid mine drainage formation from abandoned mines impacting on water quality
- Habitat modification by damage to existing habitats and creation of new habitats on dormant/abandoned mining land
- Land contamination legacies attributable to former mining and industrial activity on mine sites

Under the recently implemented E.U. Environmental Liability Directive (ELD) claims for environmental damage can now be brought against companies, their officers and directors by a wider array of interested parties, including regulators, third party property owners, activist groups and members of the public. The ELD is discussed in further detail below.

WHAT POLLUTION COVER DO STANDARD GENERAL INSURANCE POLICIES OFFER?

Traditional insurance products provide limited, if any, cover for pollution. At best, public liability policies may offer cover for third party claims (although not necessarily statutory clean-up costs) arising from “sudden and accidental” pollution events (excludes “gradual” pollution). Property insurance generally excludes clean-up costs but may provide limited clean-up cover if the pollution is attributable to property damage as a result of an “insured peril” (such as flood or fire). Standard Directors and Officers insurance policies exclude pollution and certainly don’t provide any cover for costs directly related to a claim (such as clean-up costs), though cover for legal defences may be bought back into some D&O policies. E.U. Environmental laws are particularly onerous in that claims can be brought directly against Directors and Officers as well as companies.

Such policies are clearly inappropriate for the majority of environmental risks, particularly those associated with historic contamination which is often a key concern for legacy sites and during property transactions.
**WHAT DO ENVIRONMENTAL INSURANCE POLICIES COVER?**

Environmental insurance can be arranged for future liabilities arising from “pre-existing” contamination (i.e. contamination present beneath the site as a result of historic industrial activities) and/or “new” pollution incidents (i.e. incidents arising from on-going site operations). An example of a future loss arising from “pre-existing” contamination would be the gradual release of contamination as a result of former industrial activities. A “new” pollution incident would relate to the spillage/discharge of pollutants as a result of on-going site operations (e.g. chemicals handling, leaking tanks, fugitive dust), which could be sudden and accidental or gradual in nature.

Environmental Insurance cover generally extends to include:

- Third party claims for property damage or bodily injury. For example, in the event contamination migrates off-site causing damage
- Third party site clean-up
- Statutory clean-up costs – on or off site. For example, clean up action required by an environmental regulator via their statutory powers by virtue of the:
  2. Environmental Protection Act 1990 (Part IIA) (U.K.)
- Associated legal defence costs and costs of investigation
- Business Interruption

Unlike most general liability policies, environmental insurance cover is NOT restricted to sudden and accidental pollution events, but also extends to gradual pollution. In addition, environmental insurance cover extends to on-site as well as off-site clean-up costs, and can be designed to respond to losses arising from historic contamination as well as “new” pollution incidents. The losses associated with business interruption can be substantial, even if the cost of investigations, clean-up and monitoring is relatively minor.

**CLAIMS EXPERIENCE**

The majority of environmental claims are not reported in the public domain and advising clients on risk in a quantified manner can be problematic when there is no reliable data of either insured or uninsured claims. The nature of environmental risks also makes them unquantifiable. Environmental legislation has created liability and awareness, and enforcement (or threat of) has “triggered” environmental insurance claims; however lack of recorded enforcement can ‘mask’ risk. Claims include bodily injury, diminution in value, groundwater pollution through to reputational risk.

**INSURANCE SOLUTIONS**

Environmental insurance policies are readily available to address risk exposures faced by the mining industry. It is important to evaluate existing insurance programmes, paying particular attention to the pollution exclusions in General Liability and Professional Liability policies, and then consider the use of Environmental Insurance to address those gaps.

"_UNDER THE RECENTLY IMPLEMENTED E.U. ENVIRONMENTAL LIABILITY DIRECTIVE (ELD) CLAIMS FOR ENVIRONMENTAL DAMAGE CAN NOW BE BROUGHT AGAINST COMPANIES, THEIR OFFICERS AND DIRECTORS BY A WIDER ARRAY OF INTERESTED PARTIES, INCLUDING REGULATORS, THIRD PARTY PROPERTY OWNERS, ACTIVIST GROUPS AND MEMBERS OF THE PUBLIC."_
E.U. ENVIRONMENTAL LIABILITY DIRECTIVE (ELD)

The European Union enacted the Environmental Liability Directive (ELD) in 2007 and it has since been implemented into national legislation in most member states. The ELD creates an environmental liability framework requiring the prevention and remediation of various categories of environmental damage. These include damage to protected species and/or habitats, water contamination and land contamination. Under the ELD, operators are required not only to remediate environmental damage but to take preventative steps to avoid damage occurring in the first place.

The ELD leaves the implementation of certain issues to the discretion of the member states, for example: scope of liability; legal defences available, scope of habitats covered and financial security provisions. What is certain though, and what risk managers have to prepare for is:

- Strict liability – polluter pays principle
- Unprecedented remedial measures
- Preventative measures
- Unlimited liability
- Claims being instigated by environmental pressure groups and/or private citizens
- Penalties of unlimited fines and imprisonment up to two years.

It is widely acknowledged that the new liabilities created by the implementation of the ELD will be most comprehensively protected by a specialist environmental liability policy given that standard Property, Public Liability and Directors & Officers insurance policies will most probably exclude cover by virtue of standard policy triggers, insuring agreements and definitions.

The ELD does not as yet dictate the mandatory use of insurance to manage liabilities, but requires member states to “take measures to encourage the development of financial security instruments and markets by the appropriate economic and financial operators,” with the aim of enabling operators to use financial guarantees to cover their responsibilities under the ELD.

The effectiveness of the ELD, including the uptake of financial security measures, will be reviewed in 2010, with the possibility of mandatory financial security being introduced thereafter. Certain Member States (with the exclusion of the U.K.) are, however, known to be considering making financial security mandatory which could include the use of environmental insurance such as Spain, Poland, Czechoslovakia, Hungary, Latvia, Estonia and Lithuania.

Each environmental insurer has responded with insurance products and policy modifications designed to specifically address the liabilities under the Directive.

Generally, insured parties have sought environmental insurance cover that includes liability for clean-up costs under the Directive. Insureds often use such cover as a means to respond to “catastrophic” events using a high level of self-insured retention within the insurance structure.

"UNDER THE ELD, OPERATORS ARE REQUIRED NOT ONLY TO REMEDIATE ENVIRONMENTAL DAMAGE BUT TO TAKE PREVENTATIVE STEPS TO AVOID DAMAGE OCCURRING IN THE FIRST PLACE."
CLASS ACTION CLAIMS FOR NUISANCE

An increasing and unwelcome trend, though more so at present in the waste industry, is the bringing of class actions from local residents in respect of nuisance claims for odour. Class actions are driven largely by ‘no win no fee’ law firms who track emerging publicity around such issues at waste sites and actively generate interest amongst the local community close to a site in bringing the claims against the operators. A number of seven-figure claims for odour nuisance have been paid under environmental insurance policies in the last few years in relation to the waste management industry. Whilst such claims have not prevailed as yet in the mining industry, one can see the potential for such claims in relation to dust or odour nuisance and this is a potential exposure to which awareness is increasing across many industrial sectors.

ENVIRONMENTAL INSURANCE MARKET UPDATE

The environmental insurance market is a specialist market which has continued to evolve in Europe significantly since the late 1990s. In recent years premiums have dropped progressively and there has been an increase in the available products and competition within the market. Markets have adapted products to accommodate additional risks such as changes in legislation (e.g. ELD). The market for environmental risks outside North America is focused in London with a number of the environmental insurers developing a European network using their local office and in many cases have the ability to provide country-specific policies in the local language. The London market is now host to more environmental insurers than at any time with a steadily increasing range of products that can be tailored to individual client requirements.

Environmental insurance policies can be obtained on a single site basis or for a number of sites in a number of different countries on a portfolio basis.

"A NUMBER OF SEVEN-Figure CLAIMS FOR ODour nUISANCE HAVE BEEN PAID UNDER ENVIRONMENTAL INSURANCE POLICIES IN THE LAST FEW YEARS IN RELATION TO THE WASTE MANAGEMENT INDUSTRY."
The mining industry is facing a tough road ahead according to a recent report from PricewaterhouseCoopers LLP. Market capitalisation of the top 40 mining companies plunged 62 percent in 2008. The first quarter of 2009 saw 14 of the top 40 announce mine closures, production cuts or moves to place mines on care and maintenance. Additionally, USD 13 billion of capital expenditure has also been deferred or cancelled. Combined, this has led to more than 40,000 planned layoffs across the industry.

It is clearly a tough time in the mining industry and reducing expenditures and managing production levels is crucial for mining companies wanting to combat the current economic conditions. All mining sectors are affected, from hard rock to coal, from industrial minerals to sand and gravel quarries.

Unfortunately, the mining industry has a long legacy of environmental impacts which has, in recent years, come under considerable scrutiny. This scrutiny has increased rapidly with rising concerns over climate change, a vocal global environmental lobby and increasing regulatory enforcement worldwide. The mining industry is taking active steps to address its environmental liabilities and risks aggressively, regardless of the global economic picture. Efficient management of environmental risk and social responsibility directly impacts profitability and is crucial to the successful operations of most mining companies.

With the impacts of cost reductions becoming more acute, the mining industry must still prudently manage environmental risk, despite staff reductions and reduced environmental budgets.

How can miners respond? The answer is by environmental risk transfer. Mining companies have a long history of self insuring environmental risk. This will continue to be a prudent strategy but having other viable alternatives for managing risk is crucial. As budgets become tighter, transferring environmental risk to an insurer has become more and more attractive. Also, insurance companies are expressing more interest in evaluating mining risks and offering risk transfer products at reasonable premiums. There are now more choices for mining risk managers.

Mining companies have a very high environmental risk profile and face considerable environmental challenges for both legacy and operational risks. It is crucial to understand what are the highest potential exposures facing mining and what solutions may be available to mitigate them.

“THE MINING INDUSTRY IS TAKING ACTIVE STEPS TO ADDRESS ITS ENVIRONMENTAL LIABILITIES AND RISKS AGGRESSIVELY, REGARDLESS OF THE GLOBAL ECONOMIC PICTURE.”
MINING EXPOSURES

NATURAL RESOURCE DAMAGES
Natural resources damages claims are looming as perhaps the most significant potential environmental liability to mining companies. Impacts to rainforest, wetlands, drinking water aquifers, tidal systems, coral reefs, air quality, endangered wildlife, and many other ecologic systems can be caused by mining. They are very visible to the public and are receiving a great deal of attention, internationally. Damages can be huge and potentially catastrophic for mining companies. These claims can be brought not only by regulatory agencies and governments but indigenous peoples and non-governmental organizations and citizens groups. This is a very significant area of concern and several lawsuits are being litigated which will influence how these claims are addressed in the future.

CLIMATE CHANGE
As the evidence of the damaging effects of climate change mounts, the mining industry is a primary target for claims. Environmental risk exposure for mine operations from climate issues is becoming more complex and potentially expensive. Exposure to climate change liability is a real issue and will have to be factored into risk management strategies for vulnerable properties, particularly refineries, smelters, crushing operations and mills but also open pit mines which reduce forest and vegetative cover. Greenhouse gas emissions are very much at the forefront of the climate change debate.

Litigation and legislation on the causes and effects of climate change are still unfolding; however foreign and domestic governments and regulatory agencies, environmental advocacy groups, and other stakeholders are demanding greater action on energy and climate change. This is generating unavoidable pressure for companies to examine and quantify their climate change risk and financial exposure and identify strategies to protect themselves from future litigation and claims.

NEW POLLUTION INCIDENTS TO ALL MEDIA FROM CURRENT OPERATIONS
Mining, milling and refining operations typically have substantially high hazard exposures that can cause the release of various types of contaminants into soil, water and air. The liability for bodily injury and property damage to third parties from these risks can be considerable. Class action lawsuits against mining operations generally toll into the millions in damages and legal defense costs. Many of these sites are located in geographic areas that have indigenous peoples, protected natural resources, such as wetlands, rainforests, waterways and endangered species. Major releases trigger significant government regulatory responses. Additionally, changes in regulatory positions such as contaminant levels can have huge cost impacts to mining operations, such as capping thicknesses and tailings construction. Furthermore, as many mines transition into closure and post-closure activities, long-term water quality treatment is gaining more and more attention as a significant future risk.

HISTORIC POLLUTION CONDITIONS TO ALL MEDIA
Mining companies have left billions of dollars in reclamation liabilities and clean-up costs to government agencies worldwide. This has prompted substantial claims and settlements. Because of this, regulatory scrutiny has become intense and focused on legacy sites with historic pollution conditions. This is underscored by a recent U.S. Federal Court Decision in which the United States Environmental Protection Agency has identified the hard rock mining industry as a priority for developing new rules for establishing and maintaining financial responsibility consistent with the risk from the hazardous substances they work with. This assures clean-up costs for miners’ environmental incidents are not borne by the public in the event of operator or owner insolvency or dissolution. Mine water treatment will have a significant impact on operators’ permitting, financial assurance estimates and long-term obligations. Awareness and understanding of the significant financial impact from this rule-making on the mining industry is critical.

FINES, PENALTIES AND ASSESSMENTS
Fines, penalties and assessments levied against mining companies are frequent and painful. Fines, penalties and assessments are increasing in both magnitude and frequency, globally. Canada and Brazil are but two of a growing list of countries enacting regulations to impose higher fines and penalties for mining environmental violations. This trend is anticipated as continuing.
REAL SOLUTIONS
There are real solutions to these complex environmental challenges, some of which are presented below. It is possible to adapt existing environmental insurance products to address pollution incidents and restoration liabilities. By their very nature, such programmes are highly specific and are tailored to each individual situation.

ENVIRONMENTAL LIABILITY INSURANCE
These policies generally cover the unknown or unanticipated environmental liabilities of an insured’s ongoing business operations and those stemming from historic operations. This insurance is location-specific and tailored to cover liability for pollution incidents at, and migrating from, an insured’s real property in all media. The incidents covered can be sudden and accidental and gradual in nature. These policies can also cover a portfolio of sites and address liability to third parties for bodily injury and property damage, remediation costs mandated by environmental regulatory agencies, and the associated legal defense expenses. These coverage areas can be offered for both on-site and off-site exposures.

Enhancements can include coverage for pollution exposures from vehicles transporting hazardous materials and liability that the insured has for wastes delivered to disposal facilities, such as landfills and incinerators. In addition, these policies can be structured to cover damage to natural resources and non-criminal fines, penalties and assessments – crucial enhancements for the mining industry.

Because of the types of coverage offered by environmental liability insurance, and the unusually high exposures observed in the mining industry, obtaining this coverage is very desirable.

COST CAP INSURANCE
Cost cap or ‘stop loss’ policies are designed to pay for unanticipated, additional remediation or, in some cases, discrete reclamation costs once they have exceeded original estimates.

The insurance ‘attachment point’ above which the policy will pay out (subject to the policy limit and conditions) is the subject of a negotiated agreement with the insurer. Insurers therefore need to understand the agency-approved work plan, the cost projections and risk controls in some detail before they will offer coverage and the insurance attachment points can be agreed. Where a number of separate clean-up exercises form part of a larger programme, it is possible to structure an aggregate cost cap programme across its various stages.

"NATURAL RESOURCES DAMAGES CLAIMS ARE LOOMING AS PERHAPS THE MOST SIGNIFICANT POTENTIAL ENVIRONMENTAL LIABILITY TO MINING COMPANIES...DAMAGES CAN BE HUGE AND POTENTIALLY CATASTROPHIC"
MINE RECLAMATION OR REMEDIATION INSURANCE PROGRAMMES AND SURETY

Meeting Financial Assurance (FA) requirements is a necessity for obtaining and maintaining operating permits in the mining industry worldwide. Solutions such as letters of credit and bonds are the most commonly employed. However, when not available, reclamation and remediation insurance programmes offer an alternative to the necessary capitalisation required of many mining companies to meet the financial assurance requirements of Agency or Governmental permits.

These programmes entail a premium deposit into an experience account equal to the net present value of reclamation or remediation costs (plus programme fees) as agreed to by the Insurer. The Insurer then guarantees the FA amount reflecting the agencies’ reclamation estimates, often significantly higher than the mining company’s.

The Insurer makes an investment return on the interest from the experience account. Once reclamation or remediation begins the miner pays for the reclamation activities completed, applies to the regulatory agency to reduce the FA and is reimbursed by the Insurer. The account is commutable and if reclamation or remediation comes in under budget, portions of the account may be returned to the miner.

Additional enhancements might include cost cap insurance for very tightly defined overruns and pollution legal liability coverage designed to provide coverage against previously unknown risks.

If the regulatory agency will not accept insurance to satisfy the FA, a performance bond may be provided by the Insurer.

ENVIRONMENTAL RISK MANAGEMENT CONSULTING SERVICES

No matter what type of environmental insurance policy or programme best fits the needs of the mining industry, each programme is crafted specifically for the operation and company. This requires a significant level of technical consultative services, regardless of a policy or policies being placed. This further entails technical expertise and time commitment. The role of a broker involves bringing together insurance, mining, environmental, engineering, legal and business experts to work as close liaison (ideally as a de facto partner) between the underwriters and insureds to build the best possible environmental risk transfer programme.

TWO EXPENSIVE EXAMPLES

- In 2008, one company paid a USD 20 million civil penalty to resolve waste water violations at coal mines in the U.S. Appalachia.
- In 2009, owners of an inactive mine in Alaska paid a civil penalty of about USD 880,000 to resolve violations of a storm water discharge permit.
SPECIAL REPORT
NORTH AMERICAN PERSPECTIVE:
KING COAL
Insurance of U.S. coal mines is one of the most challenging and uniquely specialist classes of property insurance with a volatile and at times costly history from which many carriers shy away. The London and Bermuda markets, however, have for many years been major players in the provision of property insurance for U.S. coal mines and indeed for the last 20 years arguably the leading global carriers.

To understand the challenges facing insurers it is clearly important to understand the physical exposures inherent in the very process of coal production – but it is also important to understand the history of the U.S. Coal industry and the outside forces beyond the control of the mine operator that can, and have, dramatically impacted the ability of coal mines to withstand loss.

**KING COAL**

The United States is by any measure the King of Coal. Its recoverable reserves of some 246,643 million tonnes (a metric tonne being 1,000 kilograms or 2,206 lbs) dwarf those of any other nation (the global number two, Russia has some 157,010 million tonnes). U.S. reserves equate to over 27% of known recoverable reserves.

**THE PHYSICAL CHALLENGE**

At its most simplistic, the insurance of many property risks, whilst clearly affected by their specific occupancy, does have a commonality of exposure – the impact of a natural catastrophe on a school building or an office block, a shopping mall or a casino, etc. being much the same, and quite possibly the major insurance exposure.

Mine buildings are not exempt from such natural exposures but catastrophe insurance is only a fairly minor part of the overall risk considered by underwriters when assessing a mining client. Much attention is given to the unique exposures of insuring multi-million dollar pieces of heavy mining equipment operating miles below the earth’s surface. With a long wall miner costing perhaps some USD 75 million and continuous miners some USD 3 million each, and all operated for multiple hourly shifts in an atmosphere frequently dusty and dark, the challenge becomes more obvious. However, when combined with the ever-present possibility of roof collapse, or methane explosion, underground flood, fire, collision or human error, the uniquely hazardous nature of the class becomes apparent. Similarly, on the surface, massive drag lines perhaps worth over USD 100 million, operating in open-pit mines and servicing a battery of huge 200 ton trucks present a very different exposure to the majority of typical “property” risks.

And throughout mining history accidents have happened.
THE CREATION OF MSHA

Today the coal mining industry is one of the most highly regulated industries in the United States. U.S. mining health and safety standards are amongst the highest of any in the world. This was not always the case. As recently as the two years between 1941 and 1943 alone there were an estimated 240,000 injuries or deaths among miners, an unconscionable figure in today’s world (to date in 2009 sustained 16 fatalities).

As recently as the 1950s there was little Federal safety regulation. Today’s MSHA (the Miners Health and Safety Authority) did not exist, and inspections of mines only became mandatory in 1952 – and then only for those underground mines employing more than 15 miners. Following recurring disasters, regulation increased, albeit slowly, and it was only in 1966 that the “Coal Act” was passed which, for the first time, mandated annual inspections of all surface mines and four annual inspections of all underground mines. Tougher penalties were introduced for safety violations and defined health standards imposed. In 1972, following the Buffalo Creek disaster (which killed 126, injured 1,100 and made some 4,000 homeless) MESA (the Mining Enforcement and Safety Administration), MSHA’s forerunner, was formed and in 1977 MSHA came into being, with its power to close down a violating or damaged mine.

LABOUR RELATIONS

Labour relations, exacerbated by historically low wage and benefits levels, have also frequently been a cause of friction. Despite the coal industry growing, the impact of the depression of the ’20s was still being felt in the late 1940s with employment levels stubbornly below those of pre-depression times, and wage levels stagnating. With America’s entry into World War II in 1941, President Roosevelt demanded a no strike pledge from all unions and also instituted a wage freeze. A year later Congress made a strike at time of war punishable by imprisonment.

Despite these measures aggrieved miners, caught in a low pay treadmill, walked out demanding better pay, (including four strikes in 1943 alone). But it was in 1946 with the war over that the UMWA flexed its muscle and in May 400,000 miners went on strike (being part of a nationwide wave of industrial action by more than four million striking workers). The Truman administration, desperate to resolve the massive strike and particularly to get the coal moving, eventually agreed to a pay increase, and to a range of benefits including for the first time vacation pay, welfare and health cover, and a retirement fund for miners and their dependants.

THE COST

While the improvement in miners’ conditions and pay levels is to be applauded, such improvements came with additional costs to the mine operators that could not always be passed onto the end user.

Frequent strikes were costly for mine owners and the cost to the coal operators of creating the benefits pool earned by the striking miners in 1946 was some USD 25 million a year, a cost that has inevitably escalated over the years. MSHA, whilst a vital and necessary body, by imposing tightened safety requirements created a cost to the mines, particularly with its power of mine closure. So, whilst mine output increased dramatically between 1973 and 2003 (from 598,568 short tons to 1,071,753 short tons), profitability for mines has been less sparkling, particularly as mines have been too often at the mercy of outside economic forces.

"MSHA, Whilst a Vital and Necessary Body, by Imposing Tightened Safety Requirements Created a Cost to the Mines, Particularly with its Power of Mine Closure."
U.S. COAL MINES AND THE LONDON PROPERTY INSURANCE MARKET

OUTSIDE FORCES

U.S. coal mines have, over the last 40 years, been both the beneficiaries and victims of the vagaries and moving tastes of the U.S. (and indeed the global economy) and have survived – or not survived – a roller-coaster ride.

The staple form of power for the U.S. for most of the 19th and 20th centuries, by the late 1960s other fuels were making an impact on coal’s dominance, particularly oil. In 1973, however, the Arab Oil Embargo meant that the U.S. turned again to coal to lessen its reliability on a resource it did not own. In 1978 it went to the extent of passing legislation mandating conversion of most oil burning power plants to coal and natural gas. Coal was again king. In the ten years between 1973 and 1983 the cost per tonne of bituminous coal almost doubled (from USD 27.35 to USD 47.71). But this was not to last. Twenty years later, with the advent of the increasingly powerful environmental lobby and the consequent move toward cleaner power alternatives – and oil being again “cheap” – coal prices fell, to the extent that by 2003 the bituminous coal price was back to 1973 levels.

But the ride was not over. With the global economic boom of the early 2000s and particularly the voracious appetite of the emerging markets for steel for construction – and thus coal for making steel – the price of coal in the U.S. went through the roof with metallurgical coal almost doubled (from USD 27.35 to USD 47.71). But this was not to last. Twenty years later, with the advent of the increasingly powerful environmental lobby and the consequent move toward cleaner power alternatives – and oil being again “cheap” – coal prices fell, to the extent that by 2003 the bituminous coal price was back to 1973 levels.

However with the possible glimmer of a recovery will demand pick up again? Perhaps - but then there is, quite rightly, the Green lobby to consider.

INSURANCE

SO WHAT DOES THIS HISTORY HAVE TO DO WITH INSURANCE OF COAL MINES?

Despite its chequered history, London underwriters take comfort from the fact that the increased regulation of bodies such as MSHA has clearly made the industry safer. With the underwriting parameters, the sub-limits and deductibles and base rates they have hammered-out over the last few years, they are optimistic they have a model for a property programme structure that they believe is resilient enough to withstand the unpredictable exposures of this historically “dirty business.”

THE LONDON AND BERMUDA MARKET

After some extremely volatile years in the early 2000s the make-up of the overall U.S. coal mining market, particularly for surface risks, has changed less dramatically during the last five years. Whilst there are a number of U.S. carriers who participate, it is not untypical for a placement to be rated and led in London and for the majority of capacity to be provided by the London and Bermuda markets. Market leaders such as Beazley and Harrington continue to lead a significant number of placements and are supported by a relatively stable following market. Whilst no new major capacity has emerged on either side of the pond, new start-up syndicates in the Lloyd’s market periodically produce potential new players and the Bermuda market remains competitive and consistent.
"WHILST NO NEW MAJOR CAPACITY HAS EMERGED ON EITHER SIDE OF THE POND, NEW START-UP SYNDICATES IN THE LLOYD’S MARKET PERIODICALLY PRODUCE POTENTIAL NEW PLAYERS AND THE BERMUDA MARKET REMAINS COMPETITIVE AND CONSISTENT."

The market for underground coal mines however, is more limited, with many carriers having withdrawn from the class five years ago and not been replaced. Excess capacity is particularly scarce. Whilst a limit of say, USD 500 million for an open cast operator is feasible, a limit of more than USD 50 million for underground coal – while achievable – is more challenging and frequently becomes a function of price.

**ASSESSMENT OF RISK**

Before getting into the placement structure and pricing parameters for a specific programme, underwriters are concerned to be satisfied with the financial stability of each client. The roller-coaster of the last 40 years has meant that the financial strength of many U.S. coal mines has been severely tested. Many household names have either voluntarily or by coercion been obliged to declare bankruptcy. Some have emerged better and stronger, some have been absorbed through acquisition, some have simply expired. The impact of this environment has perhaps been most hard-felt by those older companies who have been carrying the “legacy liability” of the miners’ long-term pension and healthcare responsibilities. Underwriters wish to understand this exposure as amongst other issues it will directly affect a potential client’s ability to invest in capital projects, be it risk-management and safety measures or new equipment and updated processes.

Following this financial overview, underwriters’ next major concern is to ensure that insured values are accurately reported. Property and equipment must be correctly declared for Replacement or Actual Cash value (a replacement long-wall miner or drag line may be several times the book cost of a 15 year-old item). Additionally, with the huge swings in coal prices that can occur in relative short time frames, they are very concerned to be given correct Business Interruption values. Incorrect reporting, or indeed delayed reporting, of values can have a devastating impact on settlement of claims.

Underwriters always wish to review engineering reports. If these are not available underwriters will insist that full engineering inspections be carried out by reputable firms of specialist mining inspectors. They analyse such reports to ensure, inter alia, that safety standards are imposed, that mining conditions are safe and that standards of housekeeping are adequately maintained.

Underwriters look for complete clarity of policy wording and go to great lengths to define and eliminate as far as possible any ambiguity.

Finally, underwriters will closely review the loss history. A good record is the best place to start if looking for premium reduction – a bad record will invariably put upward pressure on pricing.
U.S. COAL MINES AND THE LONDON PROPERTY INSURANCE MARKET

STRUCTURE
Once satisfied as to the exposure the placement structure will be developed. This will clearly be based on a balance of the limits required by the client, the capacity available, the cost of such capacity and the client’s ability to retain risk and thus the deductible levels they can carry. Original base rates used by underwriters to develop premiums have not changed dramatically in the last two or three years, only “drifting” up or down by comparison to other classes. As said, however, final developed rates will be impacted by the issues detailed above: loss record, risk management, capital investment, financial security, accurate valuations, availability of spare parts, breadth of coverage sought and so on, and can show greater variance by specific account.

With respect to deductible levels for U.S. coal risks separate (rather than combined) Property Damage and Business Interruption deductibles have become the norm. The larger the retention above the required “minimum” a client can bear clearly has an impact on premium levels. For example, on the property side, if the deductible level can be shown to absorb much of the mobile equipment exposure, underwriters will rate accordingly. Larger deductibles will be required on those items such as long-wall miners and drag-lines which have historically been costly exposures for insurers. Business Interruption deductibles of a per diem waiting period have become standard, with many markets unwilling to look at risks without a 30 day above ground and 60 day below ground deductible.

CONCLUSION
Insurance of U.S. coal mines is a specialist business requiring specialist knowledge from carriers. Over the years many insurers have entered the field and later, badly bruised, have departed. London and Bermuda underwriters, however, have worked through the turbulent losses of the last ten years, and rather than walk away, have continued to provide insurance. The result is that these markets have emerged with a deep knowledge of the class and of its history – and a determination to continue to develop their long relationship with the U.S. coal mining industry.

With such a complex, specialist class of insurance it is also critical that the intermediary has the specialist knowledge and understanding necessary to be able to produce the best coverage solution for the challenging exposures that each mining client brings. It is important that today’s mining broker is not only an expert purveyor of insurance but, working closely with the client, can draw on both a deep knowledge of the industry and years of experience with many different insureds, to develop that bespoke programme most specifically tailored to each insured’s unique exposures. A true partnership.

"INCORRECT REPORTING, OR INDEED DELAYED REPORTING, OF VALUES CAN HAVE A DEVASTATING IMPACT ON SETTLEMENT OF CLAIMS"
"Insurance of U.S. coal mines is a specialist business requiring specialist knowledge from carriers. Over the years many insurers have entered the field and later, badly bruised, have departed. London and Bermuda underwriters, however, have worked through the turbulent losses of the last ten years, and rather than walk away, have continued to provide insurance."
SPECIAL REPORT

EXCLUSIVE ANALYSIS:
FOCUS ON PHILIPPINES, PERU AND DRC
In the 2009 Mining Market Review, Exclusive Analysis (EA) provided a global summary of threats and opportunities to the mining industry. This year, EA have followed up with another Special Report, focusing on three territories of particular interest: the Philippines, Peru – and the DRC.

**THE PHILIPPINES**
- Sector Overview
- Key Actors include the Department of Environment and Natural Resources (DENR), Philippines Mining Development Corporation (PMDC) and the Catholic Church.
- The Arroyo administration is strongly pro-mining; the post-Arroyo administration is unlikely to enact wholesale changes to the current government’s pro-mining policies.
- Mining projects face risks of disruption and cancellation due to local political opposition.
- Delays to Environmental Compliance Certificate applications are commonplace; companies face demands from officials for bribes to expedite the process.
- Despite recourse to international dispute settlement, foreign investors are likely to face difficulties getting a foreign award recognised and enforced by domestic courts.

**PERU**
- Sector Overview
- Key Actors include the Ministry of Energy and Mines.
- Between 1992 and 2007, investment in Peru's mining sector was around USD 12.4 billion. Almost all of the large mining projects in Peru are controlled by the local subsidiaries of multinational companies.
- According to the Public Ombudsman Office, environmentally-motivated protests rose by over 70% in the year to August 2009. They totalled 135, of which 70% were targeted at mining, while oil and gas accounted for 10%.
- Although major changes to the current investor-friendly environment are unlikely, there is a risk that pressure will grow ahead of November 2011 presidential elections to secure more revenues from foreign mining firms.

**DRC**
- Sector Overview
- Key Actors include Katangan State Governor Moise Katumbi and State Mining Companies Gecamines and Miba.
- Four private companies enjoy particularly close relations with the government: the Central African Mining and Exploration Company (Camec), Anvil Mining, Katanga Mining and Metorex.
- Substantial Chinese investment into mining operations will likely improve infrastructure links in the key mining area of Katanga, in addition to developing the operations of state miner Gecamines.
- A review of 61 mining contracts issued during the civil war has been concluded.
- We do not expect further contract reviews, as the government is keen to attract foreign investment.
- Unreliable electricity supply is likely to adversely affect mining operations for at least the next five years, but increased investment is likely to mitigate this risk in the 10-year outlook.
- Limited commitment to reform programmes and widespread corruption within the judiciary offer poor investor protection.
- Environmental issues are likely to gain in prominence, with new legislation and stricter enforcement of existing legislation likely to impact the mining sector.
- New rules are likely to be aimed at increasing local processing of minerals and reducing export of raw commodities.
THE PHILIPPINES
DETAILED ANALYSIS

SECTOR OVERVIEW
In terms of mineral resources, the Philippines is ranked third in the world for gold deposits, fourth for copper, fifth for nickel and sixth for chromite deposits. The country also has deposits of silver, manganese and bauxite. According to the National Economic and Development Authority of the Philippines, the country’s mineral resources are estimated to be worth around USD 840 billion. Large-scale mining operations in the Philippines can be 100% foreign-owned. This position was confirmed in 2004, when the Philippines Supreme Court rejected a challenge to the 1995 Mining Act by anti-mining groups. Despite that ruling, international investment in the sector has not substantially increased. The Philippines Board of Investment has reported that about 30% of the country’s land area is geologically attractive, but that permits have only been granted to cover 1.4% of that area.

In 2008, the mining industry accounted for only about 1.4% of GDP at about USD 2.3 billion. The government is looking to obtain investments of up to USD 7 billion by 2011. Due to the global economic downturn and the associated decline in commodity prices, investment in the Philippines mining sector has slowed. Original government projections were that it would attract around USD 1 billion in mining investment in 2009, but this target has now been revised down to around USD 600 million.

KEY ACTORS
Department of Environment and Natural Resources (DENR)
The Department of Environment and Natural Resources (DENR) is the central government body principally responsible for environmental issues in the Philippines. The DENR’s mandate is reinforced by Presidential Decree 1586, which identifies environmentally critical areas and projects. Through its Environmental Management Bureau, the DENR requires every mining project to secure an Environmental Compliance Certificate (ECC). However, the DENR is under-resourced to process ECC applications, which often face substantial delays beyond the allowed 120-day time limit.

Philippines Mining Development Corporation (PMDC)
The PMDC is a vertically integrated, government-owned company responsible for overseeing the entire mining sector’s supply chain. In 2007, Arroyo transferred control over the PMDC from the DENR to the Office of the President, despite substantial political opposition.

The Catholic Church
Mining operations in the Philippines face strong opposition from the Catholic Church and, consequently, pressure to ensure their operations are environmentally sound.
The Catholic Church is another key influence group in the Philippines’ mining sector as it plays an influential role in anti-mining protests. For instance, the Marbel diocese in South Cotabato province has repeatedly urged local communities to oppose the Tampakan gold and copper project by Sagittarius Mines, a local subsidiary of Xstrata. In January 2006 on Mindoro Island, 10,000 protested against Crew Gold Mining a day after Catholic bishops pressed for the cancellation of mining concessions. These incidents have been a catalyst for media attention and highlight the historical sensitivity to mining in the Philippines.

In November 2009, a protest by locals and a Catholic priest led to the DENR overturning the environmental compliance certificate issued to Intex Resources, the subsidiary of a Norwegian mining company, in four towns in Mindoro Oriental and Occidental provinces. Disputes with local communities and the Catholic Church are very likely to lead to the government missing its target of attracting a total of USD 14.5 billion of foreign investment in mining by 2013. (Since 2004, foreign mining companies have invested only USD 2.4 billion in the country.)

The Catholic Bishops’ Conference of Philippines (CBCP) has urged President Arroyo to cancel all approved mining concessions and refuse future ones. These include mining projects such as Lafayette’s Rapu-Rapu Polymetallic Project in Albay, HPP Project in Palawan, Didippio Gold-Copper Project in Nueva Vizcaya, Tampakan Copper-Gold Project in South Cotabato, Canatuan Gold Project in Zamboanga del Norte and the San Antonio Copper Project in Marinduque.

The Bishops claim that any economic benefits of mining are outweighed by massive environmental damage and other social and health risks. In response, politicians have accused the Bishops of opposing mining in regional areas only because of the Church’s concern at losing control of its flock. This situation poses a dilemma for the government which, while seeking to exploit mining’s economic benefits, cannot afford to upset the Church, given its influence over millions of voters. Thus the manner in which such mining incidents are handled is a significant issue for the government. However, some elements of the Catholic Church appear to have moderated their opposition to the present government (several dioceses have been accused of receiving bribes from the Arroyo administration), reducing to some degree opposition from these elements to mining investment. Nevertheless, should there be a major environmental disaster resulting from mining activities, the government will likely face strong demands from the Church to review mining concessions.
Government level. In the meantime, President Arroyo’s Lakas-CMD party and its allies have majority control in the Congress, but not in the Senate (the lower and upper houses of Parliament respectively). This has weakened her ability to push through further pro-mining bills during the remainder of her term.

**Key Risks**

(i) Government Interference and Contract Cancellation Risks

Mining projects face risks of disruption and cancellation due to local political opposition. In the September 2007 parliamentary elections, many candidates ran and won on anti-mining platforms (particularly those who did not want to be perceived as colluding with the central government and mining companies). The most prominent case was in Nueva Vizcaya province, where Governor Luisa Cuaresma actively campaigned against several mining projects in the province. In early 2007, Cuaresma asked the government to reject an exploration licence application from Britain’s Metals Exploration Mineral Resources Corporation to develop a project in Runruno village. Although the request was rejected, Cuaresma’s open challenge against the government encouraged the province’s anti-mining lobby to pursue further protests, which expires in mid-2010.

Local courts, vulnerable to interference from local politicians, have come under pressure to support these protests and are becoming more likely to rule against mining companies. For instance, in January 2008, the court ordered New Zealand’s OceanaGold Philippines to stop exploration activities in Kasibu town after OceanaGold employees were forced by villagers to leave the area. Local politicians who are loyal to President Arroyo, like the governor of Masbate, Olga Kho, are less likely to contravene her pro-mining policies. However, when President Arroyo’s term ends in 2010, some of this local support for her mining policies is likely to be weakened. Despite this, the 23 mining projects designated as priorities in the government’s 2004 Mineral Action Plan, including the Masbate Gold Project, are less at risk of government interference and contract revision. All of those projects have secured relevant licences, such as environmental compliance certificates and mineral production-sharing agreements.

In November 2009, presidential candidate Manuel Villar of the Nacionalista Party chose Loren Legarda as his running mate. Legarda is known as a staunch environmentalist who has, in the past, opposed projects such as airport expansions. In the event of a Villar victory, Legarda has promised to strictly enact environmental legislation, though fundamental changes to mining laws would still be unlikely.
(ii) Regulatory and Corruption Risks

Delays to Environmental Compliance Certificate applications are commonplace; companies face demands from officials for bribes to expedite the process.

The Philippines’ mining sector is governed by the 1995 Mining Act, which regulates the development of the country’s mineral resources. The Mining Act also contains clauses on the protection of indigenous peoples, taxation and social and environmental provisions. Other relevant legislation, particularly the Indigenous People’s Rights Act and the Labour Code, are also directly applicable to the mining sector. In July 2007, President Arroyo transferred control of the Philippines Mining Development Corporation (PMDC) from the Department of Environment and Natural Resources (DENR) to the Office of the President. Through its Environmental Management Bureau, the DENR requires every mining project to secure an Environmental Compliance Certificate (ECC). However, the DENR is under-resourced to process ECC applications efficiently, although on paper ECC applications should require no more than 120 days. Most applications are facilitated by designated local agents, whose expertise and strength of local government connections are key determinants of how quickly applications are to be approved. Our sources say some DENR officials demand bribes from companies in order to fast-track their applications. We assess that these procedural problems are unlikely to improve even soon after the new government is elected in 2010, because substantial bureaucratic restructuring is required.

Foreign investors are confronted with a weak legal system and regulatory framework that favour those with powerful political connections and pose corruption risks.

"LOCAL COURTS, VULNERABLE TO INTERFERENCE FROM LOCAL POLITICIANS, HAVE COME UNDER PRESSURE TO SUPPORT THESE PROTESTS AND ARE BECOMING MORE LIKELY TO RULE AGAINST MINING COMPANIES."
The Philippines' judicial system is vulnerable to political interference, and court rulings are not always strictly enforced, particularly if rulings are directed against the government or high-profile political and business figures. In addition, the system is inefficient in that cases can take a long time to be resolved. The former chief justice, Panganiban, had been a strong advocate for judicial reform, and carried out significant changes to improve judicial independence, transparency and accountability. However, his retirement in December 2006 stalled reform initiatives. In 2009, President Arroyo's unsuccessful attempts to reform the Constitution to permit her to run for a second term compromised the urgency of judicial reforms. The legal environment is thus unlikely to improve significantly in 2010. Local companies with close connections to senators and provincial governors, who are the actual power-brokers in their regions of influence, are more likely to be favoured for contracts. To counter local competition, foreign companies often pay bribes in order to secure bids, thereby posing significant risks to their contracts and reputation if exposed. Since September 2007, the congressional opposition has filed at least two impeachment cases against the Arroyo administration following allegations that the government received bribes from China's ZTE Corporation in exchange for the National Broadband Network project. It was also alleged that a prominent member of the administration, Commission on Elections Chair Benjamin Abalos Sr, had offered the opposition lower house speaker USD 10 million to withdraw his bid for the same project. Consequently, Abalos resigned, and President Arroyo was forced to cancel the contract with ZTE Corp, resulting in a strong Chinese reaction.

In the event of a Villar or Benigno Aquino (currently the leading candidate) victory, some mining contracts signed under the Arroyo regime could be investigated for corruption, posing reputational risks to mining companies.

(iii) Legal Risks and Arbitration
Despite recourse to international dispute settlement, foreign investors are likely to face difficulties getting a foreign award recognised and enforced by domestic courts.

In relation to the mining sector, the 2004 Supreme Court decision to reject a constitutional challenge to 100% foreign ownership of mining companies was a positive development. However, this does not indicate that the Philippines judiciary will not be prone to influence in the future against mining interests. Foreign investors may seek to resolve any disputes through international tribunals. Since 1978, the Philippines has been a member state of the International Convention on the Settlement of Investment Disputes (ICSID). The country is a signatory of the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards, which came into force for the Philippines in 1964. Despite recourse to international dispute settlement, foreign investors are likely to face risks in terms of getting a foreign award recognised by domestic courts or in terms of delay in enforcing those awarded.
Precious metals have been mined in Peru for thousands of years; the country’s minerals played a major role in the Spanish empire from the 16th Century. Mining attracts the largest flows of capital from foreign investment, accounts for 30% of tax revenues and 63% of exports revenues. In 2008, almost 6% of GDP came from mining. This fell to 1.4% between January and September 2009, reflecting the drops of up to 30% in some international metals prices. Globally, Peru ranks first in silver production, sixth in gold production, third in copper and among the top five for lead, zinc, bismuth, molybdenum and tellurium.

Mining activity and exports have grown exponentially since 1991, when the government adopted a series of new rules and tax benefits for large-scale mining. The government announced a plan for USD 17 billion in mining investment for 2008-2012. Although some of these projects have been shelved due to the downturn in global prices, many are going ahead. This expansion is being met by strong opposition by some local communities.

**KEY ACTORS**

*Ministry of Energy and Mines*

Given the key economic role of mining in Peru, this is one of the key Cabinet positions. Pedro Sanchez Gamarra was appointed in October 2008, after the previous incumbent resigned in the wake of a bribes scandal with a Norwegian oil company. There is a dedicated vice-minister for the mining sector, who oversees regulation, investment promotion and environmental aspects. Unlike the oil sector, there is no state mining firm. The government of President Alan Garcia (2006-2011) has adopted a very pro-mining stance.

**FOREIGN INVESTMENT**

Between 1992 and 2007, investment in Peru’s mining sector was around USD 12.4 billion. Almost all of the large mining projects in Peru are controlled by the local subsidiaries of multinational companies.

U.S. firm Newmont operates Yanacocha, the biggest gold mine in Latin America. Canadian firm barrick Gold also operates several large mines. The Antamina project (BHP Billiton, Xstrata, Teck Cominco and Mitsubishi) is the world’s largest copper and zinc mine. Southern Copper (a division of Grupo Mexico), Doe Run, Anglo American and Freeport McMoRan also operate several large copper mines. The majority of the USD 7.3 billion invested by China in Peru in 2008 was in mining projects. Chinese state company Chinalco plans to invest around USD 3 billion to extract copper, molybdenum and silver from Toromocho Mountain in Peru’s central highlands.
The Minmetals/Jiangxi Chinese Copper Company will invest around USD 1.4 billion in the Galeno project in Cajamarca province. Shougang Hierro has been mining iron ore in Peru for more than 15 years. Other Chinese firms include Zijin which has bought the troubled Rio Blanco Copper Project in the far north of the country.

There are around 10 local companies in Peru’s mining and minerals sector including firms like Volcan Compania Minera and Buenaventura. The competitive landscape is changing rapidly as traditionally family-run local companies seek closer ties with international firms.

KEY RISKS
(i) Anti-Mining Protests
According to the Public Ombudsman Office, environmentally-motivated protests rose by over 70% in the year to August 2009. They totalled 135, of which 70% were targeted at mining, while oil and gas accounted for 10%.

Most opposition to mining projects is based on concerns of pollution and other environmental issues. However, unrest around mines can also occur due to demands for greater local investment, or over the distribution of royalties between nearby communities. Most protests involve blocking access roads. However, there have been several examples of mines being overrun and looted for up to five weeks. In one September 2009 incident, protesters forced their way past 100 policemen and burned exploration equipment. The November 2009 attack against Zijin’s Rio Blanco site in Piura, during which masked gunmen shot dead three guards and burned down several buildings, is atypical. Reports suggest that this was carried out by drug traffickers attempting to warn off foreign investors.

(ii) Mining Contract Revocations, Royalties and Environmental Standards
Although major changes to the current investor-friendly environment are unlikely, there is a risk that pressure will grow ahead of November 2011 presidential elections to secure more revenues from foreign mining firms.

Nationalist candidate Ollanta Humala won the first round of presidential elections in 2006, only losing to García by a margin of 5% in the run-off vote. With global mineral prices at record highs in 2006, the Nationalists pressed hard in Congress to revise the contracts of multinational mining firms, many of which included tax stability agreements. However, García has resisted such pressures, plus demands to bring in windfall taxes, instead opting to introduce a ‘voluntary contribution’ of 3.75% of net income to a social investment fund. Nonetheless, increasing pressure to enact a more restrictive investment climate is likely prior to the 2011 elections, specifically in regards to environmental standards. We also expect civil unrest risks will rise. The relative success of anti-oil protesters in mid-2009, who pressured the government into revoking several laws and introducing more rigorous requirements for operators, is likely to spur on the anti-mining lobby to press for new legislation.
The mining sector is regulated by the Federal and Provincial Ministry of Mines. A group of President Kabila's allies tightly controls the awarding of contracts. A close network of Kabila allies controls the awarding and administration of mining contracts in DRC. Maintaining strong allies within this circle is key to acquiring mineral extraction licences and to minimising risks of contract frustration. The Mining Cadastre (CAMI), which is headed by close Kabila associate Jean-Felix Mupande, is the administrative body responsible for issuing contracts. The protracted 2007-09 mining review process is now complete – with the exception of the Tenke Fungurume contract – and has improved international investor confidence, as suggested by the entry of new players such as Rio Tinto into the Congolese mineral sector. The 2007 USD 6 billion loan deal with China - secured against copper and cobalt reserves and revised in October 2009 - and the development of the Tenke Fungurume reserve (led by Freeport McMoRan and Lundin Mining) are the government's key mining concerns at the present time.

President Kabila's administration is faced with a lack of broad-based support and a continued failure to enforce control over the entirety of Congolese territory. Rebel groups remain active in the mineral-rich North and South Kivu provinces, particularly around the tin and coltan rich Walikale mines, despite the January to February 2009 joint military operation with Rwanda and the Kimia II operations which officially ended in December 2009. The probability of unconstitutional regime change is mitigated by the presence of heavily-invested donors including the E.U., U.S. and South Africa, and strong regional support for Kabila's administration. Supporters of Kabila's main opponent, Jean-Pierre Bemba (currently on trial in The Hague) are unlikely to be capable of mounting a successful bid to change the government by force though Bemba supporters have been implicated in a new insurgency around the north-western town of Dongo. Criticism of Prime Minister Muzito has increased the president's control over state finances as he looks to dictate budgetary policy ahead of 2011 elections. In the principal mining district of Katanga, Governor Moise Katumbi is loyal to Kabila but has increasingly criticised the central government over its failure to return 40% of tax revenues to the province as required by the 2006 constitution. If the dispute is not resolved, mining companies are at risk of an increased tax burden, disruption by local authorities and possible export controls.
endemic corruption within the revenue distribution authorities. In the meantime, Katumbi is likely to ask mining companies to pay 40% of royalties direct to the provincial authority, raising risks that mining companies caught in the middle of a tug-of-war between Lubumbashi and Kinshasa will face increase costs and business disruption.

State Mining Companies - Gecamines and Miba

In accordance with the Mining Code, the state mining companies hold equity stakes in all production sites; however, they face significant problems, particularly Miba and Gecamines.

Whilst Gecamines is the largest single holder of copper reserves within DRC, the recent slump in the mining sector has served as a reminder of the company’s fragility, since it has minimal control over production levels. This is because Gecamines relies on its foreign partners to cover the majority of operating costs, and it has contributed to low morale amongst Gecamines staff, many of whom have not been paid since November 2005. Employees are particularly unhappy that Gecamines has yet to pass on any of the Chinese down payment made in March 2009 - USD 100 million of which was due to cover unpaid salaries. Gecamines workers are heavily unionised and strike action is likely to spread rapidly out of any of the key mining towns such as Lubumbashi, Kipushi or Likasi, particularly where allegations of severe misconduct by senior management emerge. Meanwhile workers at state diamond company Miba have not been paid since summer 2007, and have been on a total strike since November 2008 which has brought industrial diamond production in the DRC to a standstill. However, the company agreed a restructuring programme in May 2009 which will see the business stripped down under the terms of a newly agreed loan deal with external financial backers and salary payments are expected in 2010 following a USD 20 million government cash injection. Furthermore, the probable entry of Rio Tinto into the Congolese diamond sector is likely to reduce the risk of strike action as Miba is likely to use Rio’s entry payments to ensure that production levels recover.
FOREIGN INVESTMENT
Private Mining Companies
Four companies enjoy particularly close relations with the government: the Central African Mining and Exploration Company (Camec), Anvil Mining, Katanga Mining and Metorex.

Following the contract review – which was estimated to have earned the government an additional USD 315 million in down-payments alone – we assess that these favoured investors are unlikely to see their contracts renegotiated under the current government. Smaller companies are at a much greater risk: in October, Deputy Mines Minister threatened 25 smaller projects with cancellation if they failed to produce a clear timetable towards production for 2010. Local businessmen such as George Forrest are however unlikely to suffer interference and will likely be offered concessions prior to any possible cancellation.

Chinese Investors
Substantial Chinese investment into mining operations will likely improve infrastructure links in the key mining area of Katanga, in addition to developing the operations of state miner Gecamines.

Substantial Chinese investment into mining operations will likely improve infrastructure links in the key mining area of Katanga, in addition to developing the operations of state miner Gecamines.

A USD 6 billion Chinese resource-backed investment package is likely to include the establishment of a joint venture between state miner, Gecamines, which is expected to hold a 32% stake, and a Chinese consortium. The new company, Sicomin, is intended to acquire rights to mine 10.6 million tonnes of copper and 626,610 tonnes of cobalt in exchange for the Chinese investment commitment. Gecamines is set to benefit, with the planned construction of railways and paved roads around mining sites particularly likely to improve productivity and the profitability of operations. A new line is planned between Kinshasa and Katanga, with an extension to the DRC’s main port at Matadi. China’s presence in the sector is actively supported by President Kabila and Chinese companies are likely to gain increasing access to resources. In January 2008, Sinohydro and CREC acquired a 68% stake in a Gecamines joint venture for the renovation of the Dikuluwe and Mashamba projects as part of the USD 6 billion resourced-backed finance agreement. Following criticism from the IMF over the increased debt incurred through the Chinese deal, the guarantees of loans against mining reserves were relaxed in October 2009 to pave the way for new IMF debt relief which was agreed in December.

KEY RISKS
(i) Contract Reviews and Future Contract Certainty
A review of 61 mining contracts issued during the civil war has been concluded.

A review of controversial contracts signed during the civil war began in March 2007, under Minister of Mines Martin Kabwelulu. Contracts were criticised for undervaluing the assets of state companies Gecamines and Société Minière de Bakwanga (MIBA), and for providing excessively favourable terms to international investors. The majority of Gecamines joint ventures issued less than 25% of shares to Gecamines, and some provided for up 20-year tax exemptions. The Mining Contracts Review Commission was composed of 28 state officials reporting directly to the minister of mines.
Whilst many companies had feared widespread cancellations of contracts, most contracts were only subject to revisions in accordance with the 2002 Mining Code. Whilst this did provide for greater government stakes within mining concessions, it also allows for some benefits for investors, for example exemptions from import duties and exemption from sales tax. Many of these changes were accepted by smaller investors and companies holding older contracts, such as Metorex which accepted a 5% increase in Gecamines’ stake, which is now at 25%. Typical demands were for a 2.5% royalty fee on mining revenues and down payments for access to reserves. However, some multinationals objected to the government’s demands for increased royalties and shares. The most problematic negotiations were with AngloGold Ashanti, Banro, First Quantum, Freeport-McMoRan, Gold Fields and Mwana Africa. These contracts were finally approved in August 2009, with the exceptions of First Quantum, which had its contract cancelled (although renegotiation is likely to follow) and Tenke Fungurume, which now has an unspecified time framework to finalise a deal – likely in Q1 2010. We expect the review of the Tenke Fungurume contract to be accelerated following pressure from Paris Club creditors, who finalised a USD 550 million loan and USD 9 billion debt relief agreement with the government in December. The Freeport negotiations over the Tenke Fungurume area have been particularly acrimonious, with the government seeking to increase its stake from 17.5% to 45%. Whilst the government is likely to hold out for as long as possible for the maximum share of revenues, it is unlikely that the government will be able to significantly increase its stake in the Tenke holding.

**We do not expect further contract reviews, as the government is keen to attract foreign investment.**

Revival of the mining sector is a key objective of the Congolese government. The fall in global commodity prices and consequent upsurge in unemployment in the mining regions in early 2009 (around 300,000 mine workers are estimated to have lost their jobs in Katanga alone) significantly reduced the government’s leverage over foreign mining companies. Both President Kabila and the influential governor of Katanga, Moise Katumbi, are keen to encourage foreign investment into the industry, and as such are unlikely to risk major renegotiations of contracts signed after the review. However, smaller operators are threatened by a December 2009 deadline to produce feasibility studies as the government looks to accelerate production. We expect President Kabila’s government to remain in power until at least 2011, and any successor administration would share the same dependence on mining revenues.

Therefore, major contract reviews are unlikely. Nonetheless, risks would increase marginally if environmental standards around mines or lack of infrastructure become major electoral campaign issues. Even in this case, re-negotiations are likely to be focused on particular agreements and not widespread across the sector.
(ii) Power Provision Difficulties
Unreliable electricity supply is likely to adversely affect mining operations for at least the next five years, but increased investment is likely to mitigate this risk in the 10-year outlook.

Despite an estimated 100,000 megawatts of hydroelectric potential, access to electricity is limited by poor infrastructure resulting from corruption, neglect, low investment and damage during the civil war. State electricity company Snel has a very poor maintenance record and outages are likely to disrupt mining activity throughout 2010, particularly in Katanga. Projects have been identified to address the low power supply, including the 45,000 megawatt USD 80 billion Grand Inga project, which is expected to be connected to a southern African grid. However, despite World Bank and African Development Bank agreements to fund the project, no firm timeline has been established. South African electricity utility Eskom, which has considerable experience of large-scale civil engineering projects, estimates that construction would take 10 years. Further power projects include rehabilitation of the Tshopo power station and construction of a hydroelectric dam near Kolwezi. China is expected to invest heavily in the construction of new power plants and transmission infrastructure as part of investment agreements. Nonetheless, we assess that it is unlikely that increases in power generating capacity will keep pace with investment in the mining sector in the five-year outlook, given difficulties in raising finance for major projects. However, in the 10-year outlook the situation is likely to improve as facilities are renovated and constructed. This is especially true if funding is found for the Grand Inga project.

(iii) The Judicial System and Anti-Corruption Measures
Limited commitment to reform programmes and widespread corruption within the judiciary offer poor investor protection.

The Mining Code, established in 2002 under World Bank supervision, is intended to improve transparency in licence allocation and to limit the influence of government relationships in the tendering process. Further reforms include joining the Extractive Industries Transparency Initiative in 2005 and undertaking measures to restructure state mining firm Gecamines. Progress at reforming the sector has been slowed by limited bureaucratic capacity and powerful vested interests. Efforts to counter corruption, which have included the establishment of an Ethics and Anti-Corruption Commission in 2003 and the passing of an Anti-Corruption Law in 2005, have done little to reduce levels. Most concrete steps that have been taken are more likely motivated by the need to demonstrate efforts to international donors rather than a genuine will to reduce corrupt practices. In 2007, 26 senior state company managers were dismissed, but their replacements were for the most part close associates of President Kabila.

Judicial protection from contract infringements is also limited, with corruption rife across under-funded and under-staffed courts. Court rulings that contradict the government’s position are rare.

(iv) Environmental Protection
Environmental issues are likely to gain in prominence, with new legislation and stricter enforcement of existing legislation likely to impact the mining sector.

The Mining Environment Protection Directorate is responsible for the implementation of environmental regulations pertaining to the mining sector contained in the Mining Code and Mining Regulation. Existing rules state that an environmental impact study, as well a plan for the management of the environmental impact of mining must be undertaken prior to the launching of mining projects. There is no legislation in place relating to pollution created during mining, which is something that the government is likely to seek to address as international pressure for environmental accountability increases. The majority of international pressure from NGO groups has been focused on the logging industry, but emphasis is likely to increasingly shift to mining as successes are recorded.
In June 2007, an independent inquiry into 156 logging concessions was launched following demands by rights groups backed by the World Bank. International advocacy relating to the mining sector has primarily focused on labour rights and working conditions. However, we expect environmental concerns to receive increasing attention as production in the sector picks up following the conclusion of the contract review process and increases in global commodity prices. Goodwill generated as a result of reforms in the forestry sector is likely to increase the government’s appetite to increase environmental demands on mining companies. Penalties stipulated in new legislation are likely to include heavy fines, licence revocation and even imprisonment. However, ability to monitor infringements and enforce new rules is limited, increasing the risks that the government will use the new regulation as a pretext for interfering with the operations of out-of-favour companies.

(v) Local Processing
New rules are likely to be aimed at increasing local processing of minerals and reducing export of raw commodities.

Increasing domestic processing capacity is part of the government’s efforts to increase revenues and gain greater control over exports. Existing legislation in the 2002 Mining Code stipulates that unprocessed commodities can only be exported in exceptional circumstances. In March 2007, the governor of Katanga province closed the border with Zambia, which had been where the majority of mineral exports were processed, demanding that regulations on local processing be adhered to. The following April, the deputy minister of mines suspended exports from North and South Kivu in a similar move. Prior to these events, enforcement of these laws had been lax. These disruptive actions prompted investors to invest in productive capacity with BHP Billiton investing USD 3 billion in an aluminium smelter and China’s Cobalt Nickels Material Corporation investing USD 350 million in a copper and cobalt mining and refining project. Initiatives have also been launched to improve the government’s ability to monitor exports, in an effort to counter smuggling. To this end, First Quantum Minerals were asked to construct a dry port close to the Zambian border which would facilitate monitoring of shipments. The government is likely to increase demands for local processing in the five-year outlook. This strategy will require a combination of more effective border controls and improved local power generation. The government is likely to increase incentives for mining companies to process minerals domestically by conditioning licence renewals on meeting processing targets. Furthermore, the government is more likely to enforce an ore export ban if copper prices improve as it seeks to maximise profitability through processing within Katanga. Companies with processing facilities, such as Anvil at Dikulushi, are likely to be favoured by the government in the allocation of future concessions.

(All intelligence is current at the 30th December 2009).