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*Chambers and Partners 2012, 2013, 2014

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Mining & Minerals
Chambers Global 2013, Africa-wide
Exploration: Grant Thornton  
With investors becoming increasingly risk-averse, juniors have found it ever harder to raise funds. How has the reduction in spend affected Africa?

Funding: Standard Bank  
The mining industry has been influenced by several factors in recent years that have impacted on available funding options, including in Africa.

Development: Norton Rose Fulbright  
The challenges and opportunities for shared-use infrastructure in the African mining sector.

Technical: SRK Consulting  
An African perspective. Africa and its relevance in the global mining sector.

Contributor biographies  
Short biographies about the companies and people who contributed to and wrote the articles within the guide.
Changing perceptions

An introduction by Mining Journal

Generally brighter economic prospects and massive transformation of its natural resources sector over the past decade – with more significant change to come – have helped turn around perceptions of Africa, branded “the hopeless continent” by The Economist just over a decade ago. More recently, the same magazine produced “Africa rising”, a report mapping its reversal of fortunes.

Foreign direct investment (FDI) has played a key role, with the United Nations Conference on Trade and Development (UNCTAD) charting a rise in FDI from US$15 billion in 2002 to US$37 billion in 2006 and US$46 billion in 2012. Led by China, spending a reported US$15.6 billion in 2011 alone, investment in African mining projects and infrastructure has been central to this FDI bonanza.

Now, with a less certain global economic outlook and weaker mining equity and debt markets narrowing the project development pipeline, the spotlight is well and truly on financing options, challenges and trends related to the next wave of African mining developments.

It is a continent of 54 countries, more than 1 billion people
AN AFRICAN MINERAL HERITAGE THAT RUNS DEEP

Expertise in natural resources has formed the backbone of our business for more than 150 years. A heritage that means our knowledge scratches far beneath the surface. From exploration, to logistics, to risk, we see the bigger picture. Because in a value chain that involves processing, storage, trade and foreign exchange, it’s connecting that counts.

They call it Africa. We call it home.

www.standardbank.com/cib
speaking over 1,000 languages, 52 cities of at least 1 million people, and about one-third of its people now called ‘middle-class’ or very near to it. The continent holds 10% of the world's oil reserves, 40% of its gold reserves, most of its platinum-group metals and chromium still in the ground, and, most probably, the world’s next generation of great iron ore, uranium and industrial/agricultural mineral mining camps.

Finance for Africa’s natural resource development, and vital related infrastructure, has been a hot topic for a decade, if not longer. Certainly, the volume of the discussion has got louder, as governance standards have improved, government debt has receded, and wealth from resource development has continued to grow.

China has been a factor in most of the talk, often a controversial one.

Australian, Canadian and UK-sourced equity funds, as well as private and non-private debt, have flowed into natural resources, in the past decade, at an unprecedented rate.

The 2014 report of African Development Bank (ADB), OECD Development Centre, and United Nations Development Programme (UNDP) on Africa’s Economic Outlook said external financial flows and tax revenues were playing an increasingly important role in Africa’s development and economic growth prospects.

"External financial flows had quadrupled since 2000 and are projected to reach over US$200 billion in 2014"
External financial flows had quadrupled since 2000 and are projected to reach over US$200 billion in 2014. Their composition had also changed progressively with foreign investments and remittances from non-OECD countries underpinning the positive trend.

The ADB/OECD/UNDP report said foreign investment – direct and portfolio – had fully recovered from the 2009 economic crisis and was projected to reach over a record US$80 billion in 2014, making it the largest financial flow to Africa.

Resource-rich countries remained the prime destination for FDI to Africa, but manufacturing and services attracted an increasing share of the over 750 new greenfield FDI projects.

The report said official remittances had been continuing their increasing trend since 2009 and are projected to reach US$67.1 billion in 2014. In contrast, official development assistance’s (ODA’s) share of total external flows continued to diminish, from 38% in 2000 to 27% in 2014 (estimated at US$55.2 billion). “Despite this downward trend, ODA still represents the largest external financial flow to low-income African countries,” OECD reported. “Tax revenues continue to increase in Africa and reached US$527.3 billion in 2012.

“They should not be seen as an alternative to foreign aid but as a component of government revenues that grows as countries develop.”

Africa’s major infrastructure development and funding dilemmas remain.

With mining equity markets remaining subdued in mid-2014, and other traditional sources of funding constrained, African mining finance discussions have taken on some new dimensions.

The following pages present expert insights from experienced professionals at Standard Bank, SRK Consulting, Grant Thornton and Norton Rose Fulbright on these finance dimensions and the other key issues and trends shaping Africa’s mine-funding landscape.

In this guide, they share their unique insights into funding options and availability, risk management, regulatory trends, and new approaches to project development.

Richard Roberts
June 2014
Opportunities but challenges

Grant Thornton

The last few years have been pretty dismal for the mining sector, and in particular for the juniors. With investors becoming increasingly risk-averse, juniors have found it ever harder to raise funds. Coupled with the majors reducing their expenditure, this has translated into 2013 experiencing a reduction in exploration budgets of up to 30% compared to 2012.

How has the reduction in spend affected Africa?
In summary, not too badly. Per SNL Metals & Mining, 2013 saw Africa drop (just) from second place to third, with approximately 17% of worldwide exploration budgets. Top was Latin America, with Eurasian countries coming in second, led by Russia and China. Within Africa, the key destinations were the DRC, Burkina Faso, South Africa, Zambia and Ghana. Gold, unsurprisingly, was the most looked-for asset, with West Africa being a primary area of focus; Africa’s preference for gold is consistent with other parts of the world.

“The continent is richly endowed with over 30% of the planet’s mineral resources and mining these resources remains fundamental to the economic prospects of many African countries”

Africa and its relevance in the global mining sector
Africa’s relevance in the global mining sector surely can’t be disputed. The continent is richly endowed with over 30% of the planet’s mineral resources and mining these resources remains fundamental to the economic prospects of many African countries. Indeed, Africa’s resource wealth has the potential to act as a launch pad for the economic well-being for the whole continent which will only reaffirm Africa’s relevance in the global mining sector.

Africa’s growth story over the past two decades is compelling and in 2013 Africa was the world’s fastest-growing continent with total GDP growth of 5.6% and forecast growth of 6% per annum between 2013 and 2023. Prima facie, this growth should have a positive impact on the continent’s mining sector. Indeed, many analysts now consider Africa to be the investment destination of choice for the discerning global investor due to the expanding middle class and favourable
demographic changes which are now being referred to as the “demographic dividend” for future generations to benefit from. Since 2006, intra-African trade has increased from around US$48 billion a year to over US$100 billion a year and Chinese trade with Africa rose to around US$200 billion in 2012 from US$9 billion in 2000, representing a 2,300% increase over the 12-year period.

**Africa’s natural resource endowment**

So, what is in Africa? As one can see per the high-level summary below, a lot.

Whilst this summary is helpful, however, it should be recognised that the markets for many commodities are synonymous with certain African countries and, as we show in the table below, in 2013 African nations were responsible for the production of a significant percentage of the world’s platinum (and palladium), diamonds and gold, to cite just a few examples.
In addition to the above, approximately 85% of global phosphate reserves are located in North Africa.

**Where's the money coming from?**

Investment into the African mining sector comes from a range of sources including foreign direct investment (FDI) from banks, corporates and private equity. Recent surveys are showing Africa as having an increased attractiveness for FDI, with those already active in the continent showing the most optimism about future growth of their investment. Africa’s investment appeal has also increased significantly relative to other parts of the world known for their mining activity.

We’re not only seeing that increased attractiveness and optimism in surveys but also hearing it in our conversations with those active on the continent, and it was the prevailing sentiment during the 2014 Mining Indaba in Cape Town. Notwithstanding that sentiment, total investment into African mining projects remained relatively flat in 2013 compared to 2012 at c$110 billion. So is it all just talk?

The motivations for those investing in Africa remain clear: the abundance of

### African mineral commodities production

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Key producing countries in Africa</th>
<th>Total global production</th>
<th>Africa’s contribution (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold</td>
<td>South Africa, Ghana, Mali, Burkina Faso, Tanzania</td>
<td>2.64Mkg</td>
<td>19.1</td>
</tr>
<tr>
<td>Diamonds</td>
<td>Botswana, DRC, South Africa</td>
<td>127.3Mct</td>
<td>56.6</td>
</tr>
<tr>
<td>Platinum and palladium</td>
<td>South Africa, Zimbabwe</td>
<td>431t</td>
<td>63.4</td>
</tr>
<tr>
<td>combined</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron ore (ex-China)</td>
<td>South Africa, Mauritania, Sierra Leone</td>
<td>1,660Mt</td>
<td>5.4</td>
</tr>
<tr>
<td>Uranium</td>
<td>Niger, Namibia, South Africa</td>
<td>59,800t</td>
<td>18.3</td>
</tr>
<tr>
<td>Bauxite</td>
<td>Guinea</td>
<td>248Mt</td>
<td>7.6</td>
</tr>
<tr>
<td>Vanadium</td>
<td>South Africa</td>
<td>75,000t</td>
<td>26.0</td>
</tr>
<tr>
<td>Copper</td>
<td>Zambia, DRC</td>
<td>16.8Mt</td>
<td>8.5</td>
</tr>
<tr>
<td>Cobalt</td>
<td>DRC</td>
<td>128,000t</td>
<td>75.0</td>
</tr>
<tr>
<td>Coal (ex-China)</td>
<td>South Africa</td>
<td>4,264Mt</td>
<td>6.2</td>
</tr>
<tr>
<td>Manganese</td>
<td>South Africa, Gabon, Ghana</td>
<td>48.3Mt</td>
<td>30.0</td>
</tr>
</tbody>
</table>
untapped minerals waiting to be unlocked (it’s got over 30% of the world’s mining reserves), in a sector that can, where the right factors come together, drive economic growth. That growth and the potential return on investment is what keeps the eyes of the corporate or institutional investor on Africa. However, as we will highlight later in this chapter, political instability, resource nationalism, uncertainty surrounding mining laws and lack of infrastructure remain the obstacles to the optimism being realised in many African countries.

There are some indications that what the surveys are showing will soon translate into increased activity as there are a number of smaller private equity houses as well as larger firms (including the likes of KKR and Carlyle) that now have dedicated funds and teams for the region. So what’s changed and what is it that’s attracting investors into the African mining sector? As you can imagine, there are a lot of views, but common themes include:

**Government actions**
- Governments keen to show they are serious about getting their house in order and reforming of corporate governance procedures – for example, the Nigerian Stock Exchange (NSE) putting in place a Corporate Governance Index for listed companies. Other countries are working with the likes of the World Bank and the International Finance Corporation to create investor-friendly regulation. Actions like this are music to the ears of investors as it starts to paint a picture of a more sophisticated and grown-up financial environment in which to do business.
- Governments are also keen to help investment and infrastructure projects make more commercial sense, with mining concessions and import-duty exemptions. Nigeria, again, takes no free carried interest in mining operations. However, mining companies are mindful of the risk of the pattern of governments increasing taxes and regulation once investment is committed.

**Case study: Tanzania**

Fourth-largest gold producer in Africa with production currently standing at 40t/y and poised for further expansion. Tanzania has attracted interest from China and in 2013 mining companies paid over US$150 million in taxes, which represented 2.8% of East Africa’s GDP. According to the Tanzania Chamber of Minerals and Energy, the mining sector created over 14,000 jobs in 2010.

“Political instability, resource nationalism, uncertainty surrounding mining laws and lack of infrastructure remain the obstacles to the optimism being realised in many African countries”
Infrastructure improvements

- Improving infrastructure, as the provision of power and transport links continue to be a risk to investment, both FDI and internal investment start to fill the gaps, a great example is planned development of the Ezinmo coal block in Nigeria, a $3.7 billion investment by Chinese HTG Pacific Energy consortium, including a 1,000MW power plant, which could contribute 30% of the country’s power supply by 2020, in a country where current energy reliance is on hydroelectric dams and gas reserves.
- The state-owned railway and ports in Mozambique have set out to raise development capital to increase export capacity with a $2 billion development between Tete to Macuse. Also in Mozambique, the mining group Vale from Brazil is spending $4.4 billion on railway developments.
- The energy treaty between South Africa and the DRC, which looks to harness the power of the Congo with hydropower installations via an $80 billion project.

Case study: DRC

DRC is mineral-rich but has been dogged by allegations of corruption. DRC is estimated to have US$54 trillion worth of untapped deposits of raw mineral ores, including cobalt, diamonds and copper.

Typical infrastructure in Mozambique  Photo: SRK Consulting
Robust and developed financial services sector

- How Africa’s banks have fared during the global financial crisis, with growth in pre-tax profits at over 30% (more than twice the banks in China) and return on assets at 2.1% in 2013, and Africa’s top 200 banks growing by 34% over the past five years. For those with opportunities across the globe, it’s all relative, so this robustness compared to other parts of the world will fuel any existing plans to invest in Africa.
- Impressive growth in Africa’s use of technology to grow financial services. The Economist, in its May 2013 issues asked, “Why does Kenya lead the world in mobile money?” as it points out that it is easier to pay by mobile in Nairobi for a taxi than it is in New York. And that growth is symptomatic of the growth of middle-income countries across Africa, with technology making it possible for businesses to achieve what couldn’t be done even five years ago.

What are people investing in?

Africa’s share of global FDI reached its highest level in a decade in 2013 at 5.7%. The average size of FDI projects grew from $60 million in 2012 to $70 million in 2013. As they say, success breeds success, so what investment in African mining projects have been driving increased optimism?

Examples include:
- In South Africa, feasibility study of Bloemhoek and expansion of South Deep.
- In Ghana, $700 million feasibility study of Akyem.
- In the DRC, development of the Kamoa copper project.
- In Guinea, Simandou, a $20 billion Iron Ore project including development of the a railway to transport the ore to the port.
- In Sierra Leone, the Tonkolili iron and steel development.
- In Cameroon, iron-ore deposits in Mbalam and Nkout.
- Australia’s continuing interest, its Department of Foreign Affairs and Trade has stated that there are about 220 listed Australian natural resources companies in interests in 42 African countries.

Case study: Mozambique

Mozambique experienced economic growth of 7.4% in 2012 and is forecasted to average 8% annually between 2013 and 2017 owing to the minerals boom. There is much excitement surrounding the world’s largest untapped coal deposits in the Tete Province. However, metallurgical coal holds the biggest allure for investors given the high prices and limited global supply. There is also increased activity in heavy mineral sands and rare earths as well as gold mining.

“The average size of FDI projects grew from $60 million in 2012 to $70 million in 2013”
What about China?

China’s fascination with Africa and its mining sector is impossible to ignore. It has been suggested that China’s long-standing trade relationship with Africa could now be viewed as neo-colonialism as China seeks to secure a steady supply of low-cost raw materials and commodities to maintain its own rapid economic development.

Between 2000 and 2011, it is estimated that China invested more than US$73 billion in natural resources projects throughout Africa (including oil & gas) and, in 2011 alone, China invested US$15.6 billion in African mining projects, seven of which were worth more than US$1 billion each. Chinese investors initially concentrated on a few large resource-rich countries such as Algeria, Nigeria, South Africa, Sudan and Zambia, but now there is clear evidence that countries like Ethiopia, Congo and Sierra Leone (see Case Studies), where minerals are harder to extract, are getting more attention.

Examples of Chinese investment

Chinese investment in the African mining sector has taken a range of forms including merger and acquisition (M&A) activity, joint-venture agreements and direct investment in infrastructure projects.

During 2011 and 2012, there was a flurry of M&A activity between China and Africa. Significant transactions included: Shandong Iron and Steel Group Co Ltd, the China-based iron and steel manufacturer, acquiring a 25% stake in Tonkolili Iron Ore Project, from African Minerals Ltd, for US$1.5 billion; and CGNPC Uranium Resources Co Ltd and China Africa Development Fund acquiring a 57.26% stake in Extract Resources Ltd from Rio Tinto Ltd and Itochu Corporation via an unconditional public offer through a 60:40% jointly owned entity, named Taurus Mineral Ltd. China National Gold was also in talks with African Barrick Gold about the possibility of acquiring a majority stake but this deal collapsed in January 2013.

Last year was a quiet year in terms of M&A but in September 2013, Chinese mineral and resources company, Tewoo, agreed to purchase a 16.5% stake in the Tonkolili project, an iron-ore mine in Sierra Leone, for US$990 million from African Minerals. It has been estimated that the transaction could guarantee China’s supply of iron ore for the next 20 years.
**The impact of Chinese investment**

Chinese investment appears to have built up significant goodwill in Africa as it has led to the development of roads and the construction of railways and ports which may never have been built. Results, however, have not always been positive.

Zambia has been one of the biggest recipients of Chinese mining investment, particularly the country’s copper mines, which are a huge contributor to its economy – accounting for up to 75% of Zambia’s total exports annually.

To date, Chinese mining firms have invested approximately $1 billion in Zambia’s copper sector, which has helped boost production and create jobs. It has not all been good news, though, as in 2011 Human Rights Watch issued a negative report on Zambia’s copper industry that accused Chinese firms of a number of abuses, including forcing labourers to work excessive hours and endangering miners’ health and safety by failing to replace damaged equipment and providing inadequate ventilation underground.

This is one of several examples whereby foreign investors into Africa have failed to consider the wider ethical implications of their investment approach, especially the key issues of sustainability and corporate social responsibility which are now scrutinised more than ever by the global mining community.

**Chinese investment in 2014 and beyond**

This year has seen a resurgence of Chinese interest in the African mining sector with China National Nuclear Corporation taking a large stake in one of Africa’s largest uranium mines in Namibia for nearly $200 million, and China National Gold exploring the possibility of acquiring a copper mine in Congo from Ivanhoe Mines.

In January 2014, China Development Bank provided Wesizwe Platinum, a Johannesburg-listed mining company in South Africa, US$650 million to support the development of the

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**Case study: Sierra Leone**

Before the start of iron-ore mining and export, growth rates, driven by increased activities in agriculture, construction, manufacturing and services sectors, averaged 5.7% per annum during 2010-12. However, as two large mining projects began iron-ore production and export, real GDP grew by an impressive 15.2% in 2012, reflecting increased iron-ore production, from 137,000t in 2011 to 6.6Mt in 2012. Real GDP growth for 2013 is estimated at 16.3%.
Bakubung platinum mine, which is expected to reach full production capacity by 2021 and China National Nuclear Corp purchased a 25% share in the Langer Heinrich uranium mine in Namibia from Australian uranium producer Paladin Energy for US$190 million.

The majors, who are all developing assets throughout Africa, clearly see China as important to the development of their flagship projects. For example, Rio Tinto and its Chinese partners recently secured around US$20 billion to fund the development of Simandou, an iron-ore deposit in Guinea, along with the construction of a 650km railway and port which would help Rio unlock other potential deposits in that country. This collaborative approach towards financing could be a model for miners to fund their future projects in the face of the soaring development costs.

**Challenges**

So far, so good. As already noted, however, Africa’s mining industry is not without its challenges, some of which have been well documented such as the on-going unionisation of the South African mining sector following industrial disputes over miners’ pay and working conditions. Others, such as corruption risk, weak infrastructure and poor transport link are seen as inherent risks of doing business in Africa.

Furthermore, black economic empowerment (BEE) regulations in many African
countries, have also affected Africa’s attractiveness as an investment destination. Indeed, indices such as the World Bank Ease of Doing Business Index (www.doing-business.org/rankings) show that African nations rank poorly compared to other mineral-rich countries. For example, Australia (11), China (16) and Canada (19) rank relatively highly on the index compared to South Africa (41), which is the highest-ranked African country. The seven lowest-ranked countries on the index are all African and these include Eritrea (184) and the Republic of Congo (185), both of which are known for the potential of their mineral deposits.

Finally, what shouts out from the results of the Fraser Institute’s 2013 survey of mining companies, is the concern over government intervention – some might even call it interference. Uncertainties over permitting, royalties, tax and title (to name just a few) are commonplace.

Whilst the opportunities are huge, the list of challenges is not insubstantial. If this can be even partially resolved – in particular, providing greater regulatory stability – Africa’s mineral potential could (indeed, should) be enormous.

**Conclusion**

Africa’s extensive mineral endowment, coupled with growing levels of inward investment and China’s fascination in Africa’s resource deposits, means that its relevance in the global mining sector should never be questioned. With more than 30% of the world’s mineral resources, Africa will always be a destination of choice and will always offer up opportunities. The trick for investors, however, is to navigate the uncertainties noted above and then there’s always the question of cash and how to get it.

Whilst there is currently less than there was, there are still many out there willing to take a chance, with new and inventive approaches to investment, which is explored in more detail on p46.

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External influences

Standard Bank

The mining industry has been influenced by several factors in recent years that have impacted on available funding options, including in Africa.

These factors are summarised below.

**Sector-generic**

- Correction in commodity prices from 2012 onwards, driven by a slow-down of the growth in Chinese demand
- Investor scepticism toward the mining sector (in particular, management and financial performance) that has shifted emphasis from growth to returns
- Reduced willingness by providers of capital to finance greenfield projects
- The emergence of private capital as a provider of especially equity funding

**Africa-specific**

- A reduction in perceived political risk in several jurisdictions as a consequence of an improved macro-economic climate and better governance.
- Nonetheless, Africa remains a relatively high-risk investment destination; until 2012, such risk was unquestioned and considered acceptable in a high commodity price environment but, over the past 18 months, has been handicapped by the flight of capital to safer jurisdictions.
- Lack of existing infrastructure remains an obstacle to development, particularly for bulk commodities.
- China’s strategic focus to secure raw materials from Africa remains intact, but invites unique characteristics and challenges.

“Both borrowers and lenders have developed strategies and products to deal with the specific risks of doing business on the continent”

On balance, the funding environment has become more constrained, with fewer classical options open to companies, particularly juniors and developers, with providers of funding exercising greater discretion in making investment decisions. As a consequence, both borrowers and lenders have developed strategies and products to deal with the specific risks of doing business on the continent. The applicability of such strategies varies by jurisdiction, commodity and stage of development, but they have become even more critical in the new, more constrained environment.

**Debt funding**

Whilst debt flows into mining have slowed, loan funding has been significantly less affected by the downturn in the sector than equity. Bank lending appetite has
remained relatively robust: the decline in funding volumes has probably been more related to borrowers staying away from the market due to a lack of equity funding.

The appetite is not unconstrained, however, with evidence of more robust covenants, even more stringent technical analysis and a downward revision in commodity price projections increasing the scrutiny of projects or existing operations seeking commercial bank debt.

**The role of Development Finance Institutions (DFIs)**

One of the key tools for expanding debt funding capacity in Africa has been, and remains, the DFIs. These are particularly relevant where there is insufficient commercial bank capacity in the market or where there is a desire for a more extended tenor than what is acceptable to the commercial banks. They are also perceived as providing political cover, because of their close links with influential donor governments. Prominent examples include Base Resources, Kenmare Resources, and Hummingbird Resources. In recent years, some DFIs have also expanded their scope to acquire equity in mining companies whose projects they are funding, allowing developers to cement their relationship with the DFIs ahead of the debt funding stage. Examples of this include the IFC’s investment in Hummingbird Resources in Liberia and Baobab Resources in Mozambique.

**Export Credit Agency (ECA) cover**

Another critical mitigant for debt funding providers has been the ability to obtain export agency cover. Such cover is typically linked to key inputs being sourced in
the country of the relevant ECA, but is not necessarily limited to physical inputs such as mining fleet, plant and equipment but can also involve services such as consultancy and EPC contracting. Key institutions that have been active in Africa include the ECIC of South Africa, Canada’s EDC, EFIC of Australia and US Exim.

**Political risk cover**
The availability of political risk insurance from both the private Lloyds of London insurance market and World Bank Group institutions such as MIGA gives investors and lenders cross-border comfort against borrower default caused by political events.

The standard events covered are:

- Expropriation or other government action
- Currency inconvertibility or non-transfer
- Political violence
- War and civil war
- Forced abandonment
- Contractual agreement repudiation
- Operating licence cancellation
- Sanctions
- Export embargo

Such insurance cover adds to the overall borrowing cost, but can make a difference in terms of being able to fund projects in higher-risk jurisdictions in Africa.

**Supplier credit**
Providing debt funding for new investment, whether in relation to greenfield projects or expansions, has become an important competitive tool of the major equipment suppliers and this has become a key source of funding for mining companies in Africa. Yellow goods suppliers such as Caterpillar have been among the most active players in this space, in addition to providers of capital equipment for infrastructure solutions for bulk commodities, such as General Electric and Grindrod of South Africa. The finance arms of these manufacturers will rarely come in as the sole debt provider, but will typically sit alongside more experienced commercial lenders.

**The role of debt capital markets**
Whilst the Eurobond market can be tapped into by major mining companies with assets in Africa, such as First Quantum Minerals and the global majors, there is also a track record of smaller miners accessing the bond markets where the terms are more favourable than in the bank market or where commercial debt is not available due to political risk. For example, Banro Corporation found the bond market more receptive than the bank market when it came to fund the construct-
ion of its second mine in the DRC; Tizir Ltd, the mineral sands JV between Mineral Deposits Ltd and Eramet in Senegal, also issued a fixed-income note to fund its project, albeit secured on its downstream asset in Norway. Typically, such funding is only possible where there are existing cash flows in the business and there is strong demand in the fixed-income investor market at the time of issuance.

Commodity-linked funding
Given depressed valuations in the equity market, there has been strong demand from mining companies for funding solutions which avoids issuing straight equity, but equally does not limit the potentially available debt funding. Examples include commodity streams, royalties and commodity pre-pays.

Whilst structuring such products can be challenging in certain African jurisdictions, the sector has seen a strong increase in the number of commodity-linked funding deals in Africa. Blackrock has been active in the space, providing an iron-ore royalty to London Mining in Sierra Leone and a gold-linked preference share to Banro in the DRC, and niche providers such as Red Kite and Franco-Nevada have funded junior gold companies in West Africa. In addition the commodity trading houses such as Noble, Vitol, Trafigura, Cargill and Gerald Metals have become increasingly active on the continent.

Equity
As the highest-risk component in the funding spectrum, equity has tended to be the most sensitive financing tool available to miners.

Public equity markets
Whilst there is a long history of the public equity markets in the UK (LSE/AIM), Canada (TSX/Vancouver) and Australia (ASX) financing mining equity on the African continent, the correction seen in the sector over the past 18 months has led to such funding for particularly junior miners contract significantly.

But, as commodity prices have stabilised in recent months, junior miners with
quality projects in Africa have been able to raise equity from the public markets (examples include Aureus, Teranga, Amara and Sable Mining). However, the equity capital markets remain challenging both in terms of current valuations and investor appetite for the sector.

As a consequence, mining companies in Africa have increasingly focused on generating alternative sources of equity funding. This includes from private capital sources, (Private Equity funds, Sovereign Wealth Funds family offices, hedge funds), trading houses and strategics. In addition, mining companies have been responding to equity investors’ concerns by seeking to de-risk their projects by optimising capital spend – that is, reducing capex, which may also enhance project returns.

Private capital
Given the significant amounts of capital raised by private equity for investment into the mining sector, there has been an expectation for some time that such funds would start to replace the public markets as a source of funding for mining companies, including in Africa. Whilst the amount of realised investment flows from private equity into the continent has been limited to date, there appears to be strong interest from a number of such firms keen to invest in Africa. Indeed, their longer-term investment philosophy arguably makes them more suitable to African investment than some public market investors. QKR’s acquisition of AngloGold Ashanti’s Navachab gold mine provides an example of the type of transaction that can be expected to flow from the private equity space in coming years. In addition, Sovereign Wealth Funds and family offices in the Middle East and Asia have been actively reviewing opportunities on the continent, although few transactions have materialised.
Strategic equity
As public equity markets have dried up, mining companies have become increasingly willing to consider partnering with other strategics to fund new projects or expansions. A number of mining players with assets in Africa ranging from the majors to the juniors have launched processes over the past two years in search of JV or minority partners, in most cases with mixed success. Many companies have in particular targeted Chinese strategic players (see below) and, whilst there are success stories, such as African Minerals attracting Shandong Iron and Steel as a strategic investor for its Tonkolili iron-ore project in Sierra Leone, Chinese capital has also become more selective and risk-averse. Other North Asian players have also been actively reviewing opportunities in the space, but with few examples yet of actual investment. This makes the sector a buyers’ market for strategic equity capital.

African equity funding sources
Whilst there is limited accumulated capital in Africa that could be made available for investment in the mining sector, there are pockets of demand which

“A number of mining players with assets in Africa ranging from the majors to the juniors have launched processes over the last two years in search of JV or minority partners, in most cases with mixed success”
mining companies can tap into. For example, there is increasing appetite from institutional investors in South Africa to gain exposure to the rest of Africa and several institutions have set up separate ‘Rest of Africa’ funds. South African investors are sophisticated and highly knowledgeable about mining and, whilst they are not immune to the global issues affecting the sector, they are willing to consider attractive stories in the sector.

In addition, recent regulatory changes in South Africa are helping international mining companies to access this capital, as the regulator now allows foreign mining companies to become part of South African investors’ domestic investment allocation if they obtain a secondary listing on the Johannesburg Stock Exchange. This allows funding which would otherwise be ‘trapped’ in South Africa to be put to use for groups with assets elsewhere on the continent. As a result of these regulatory changes, Glencore decided to list in Johannesburg in 2013 and other groups are also considering this option. In addition, public South African institutions such as the Industrial Development Corporation (IDC) and Public Investment Corporation (PIC) have an increasingly Pan-African mandate when it comes to investing in mining and other sectors.

“The drive to access African natural resources has been a strategic imperative for China for some time and as a result Chinese capital has flowed into African mining through a number of channels”
The role of China in funding African mining assets

The drive to access African natural resources has been a strategic imperative for China for some time and, as a result, Chinese capital has flowed into African mining through a number of channels. Chinese mining State-Owned Enterprises (SOEs) have been acquiring assets across the continent in a number of strategic commodities and they have frequently been supported financially by equivalent SOEs in the rail and construction space looking to access EPC contracts in relation to mine and infrastructure development.

Such investments have been supported by debt funding from policy banks such as China Development Bank (CDB) as well as commercial banks such as Industrial and Commercial Bank of China (ICBC). Historically, Chinese investments into the sector were typically predicated on a Chinese SOE gaining control of the assets and funding was usually provided by Chinese banks. With the changing sector environment and the slow-down in Chinese GDP growth, the strategy of securing African raw materials for Africa remains intact, but the means by which it is realised appear to be changing.

A more cautious approach has led to less emphasis on controlling mining assets and an increased willingness to partner with Western players in Africa, as well as a preference for producing mines over greenfield projects. We are also seeing that as the SOEs have become more cautious, there is an increasing interest from private Chinese entities to invest in Africa and these players take a more Western-style approach to funding, tapping into the equity capital markets as well as the commercial bank debt market where possible. There is also an increasing interest from Chinese banks to participate in commercial bank debt transactions in the sector in Africa.

This is not to say China won’t pursue landmark deals in the sector – the recent acquisition by Minmetals of the Las Bambas copper project is evidence of this – but it is likely that such investment will be reserved for top-tier, large-scale assets.

“...an increasing interest from Chinese banks to participate in commercial bank debt transactions in the sector in Africa.”

Conclusion

Whilst the overall environment for Mining Finance has become more challenging, the political environment in Africa has been steadily improving and there is increasing interest from the bank and capital markets to fund the growth of the African continent. Against this backdrop, mining companies will be able to finance quality projects in Africa, assuming that they understand what providers of finance are looking for and exercise the appropriate levers to maximise their funding capacity. New, emerging sources of funding such as private capital and local African capital hold the promise of adding incremental funding capacity for the continent.
Recognising the potential for shared use

It will come as no surprise that a discussion on infrastructure in Africa highlights the limited access to infrastructure across the continent. The estimated annual funding gap for infrastructure development is staggering. According to the World Bank’s Africa Infrastructure Country Diagnostic published in 2008, the cost of redressing Africa’s infrastructure deficit is estimated at around US$75 billion, with the current funding gap being around US$35 billion annually.

While its infrastructure is underdeveloped and spending needs are vast, Africa is hailed as a resource rich continent. About a third of the world’s mineral reserves are in Africa, including more than half of the world’s platinum group metals, cobalt and diamond reserves and nearly 40% of its gold reserves. Africa has among the largest reserves of manganese and chromium in the world, and is also a major producer of nickel, bauxite, and uranium.

The need for infrastructure development, including railways, ports, power capacity, water and information and communication technology, to making extracting these valuable resources viable means that the infrastructure spend for mining companies often dwarfs the spend required to construct the mine. As mining companies already anticipate that they will have to finance and deliver the infrastructure they require, there is an opportunity for governments to leverage mining-related infrastructure for regional economic development. Governments will try to coordinate delivery of this infrastructure with their national infrastructure objectives to narrow the funding gap.

Facilitating shared use of mining infrastructure between the mining company and third parties is the key to distributing the benefits of mining-related investments more widely. But this is by no means a simple solution:

• governments may prefer to target tax revenues rather than infrastructure sharing solutions;
• mining companies typically prefer vertically integrated logistics which they can control to ensure sufficient capacity for their operations; and
• potential third party users may have very different needs which infrastructure designed to service a mine may not be able to deliver.
To be a viable solution the mining and associated infrastructure project needs to align with the country’s long-term infrastructure strategy, and mining companies need to be offered the right incentives.

It is crucial that the parties involved explore the potential for shared use infrastructure in the early stages of structuring a project. There are a myriad of important issues to consider, and the earlier on in the process these issues are discussed with the relevant government, the better. In our experience acting for both lenders and sponsors, the parties frequently seek to progress a transaction on the basis of a term sheet which hasn’t been negotiated taking all possible stakeholders’ views into account. Dealing with bankability issues upfront in discussions with government, and in structuring the implementation of a transaction, goes a long way towards creating a package that is both practically workable for the mining company and bankable for its lenders.

This chapter considers the case for shared use infrastructure in the context of mining in Africa. It explores some of the key issues role players including governments, mining companies, third party users of infrastructure and funders will consider in relation to shared use infrastructure. It sets out some of the barriers to implementing the shared use of infrastructure and ways to facilitate it. It then proposes some structures for delivering shared use infrastructure, picking up on some of the more practical implementation issues.

The case for shared used mining infrastructure

Factors to consider: is it feasible in the circumstances?

It is important for governments planning for their current and future infrastructure needs to consider the potential benefits of leveraging off the demand to exploit their natural resources. Local communities also have an expectation that they will benefit from the development of mining and infrastructure projects in their region. A number of factors will influence whether it’s worthwhile for a government to press for a shared use model when granting infrastructure development concessions alongside mineral development rights:

- The specific mineral to be extracted will dictate the infrastructure requirements of the mining company. For example, whilst coal mining will require rail networks and a port terminal with coal handling capability to get the product to market, processed gold may well be airlifted by helicopter.
- Whether any processing will take place at the site of the mine will inform decisions as to whether there is a need to develop additional power capacity, or water storage or wastewater facilities.
The location of the mine will play into the strategic importance of shared use infrastructure and whether there will be any demand for its shared use. The rail links of remote mines may provide little benefit as passenger rail links, but may have the ability to make smaller scale mining by juniors in the area viable. This would enable the government to grant a greater number of mining concessions to investors who would not have been able to develop the necessary infrastructure themselves.

Alternative infrastructure which already exists or may be developed in the same area may compete with the newly developed infrastructure. The option to use a road or alternative rail line may result in more competitive access tariffs for third party users of all sectors. However, if the sponsors and funders of a new rail line are relying on the demand of other users to cover the costs of developing more capacity than the mining company needs, they are unlikely to support shared use if potential demand is likely to be low.

**Economic development**

A major focus for mining companies is the development of rail and port access, which are also two of the most complex types of infrastructure for which to grant access to third party users. However, the economic benefits for a country in developing these types of infrastructure in the right geographic locations cannot be underestimated. For example, forestry and agriculture in fertile but rural areas can be properly developed where there is a means to transport the timber and crops to urban markets, processing plants and ports for export. ‘Stranded’ mining assets can also be accessed by junior miners using

**Nigeria: capitalising on coal reserves**

As part of its efforts to boost power generation in Nigeria, the federal government is capitalising on the country’s coal reserves.

In August 2013 the Nigerian Ministry of Mines and Steel Development signed a memorandum of understanding with Chinese-Nigerian consortium HTG-Pacific Energy relating to the mining licence granted for the exploitation of the Ezinmo coal block in Enugu State.

The consortium will develop a mine to extract coal and as part of phase 2 develop a 1000MW coal-fired power plant near the mine site. Total development costs in the region of $3.7 billion are expected to be funded by foreign institutions. Power generated is expected to supply the national grid: developing this infrastructure alongside the mine will substantially increase power capacity in Nigeria.
shared infrastructure, allowing development where majors would previously have had the competitive advantage. Mining companies are showing an increased willingness to contribute to this strategic economic development. Rio Tinto states in relation to its Simandou iron ore project in Guinea (which is being developed with associated rail and port infrastructure) that it is ‘making sure its investments are in line with Government’s development priorities’.

**Access to finance sources**
Planning infrastructure around mineral resource exploitation would allow mining companies to involve private and public finance options which would not otherwise have been available. Both commercial banks and development funders such as development finance institutions (DFIs) and export credit agencies (ECAs) are more likely to participate in financing infrastructure where the cash flow and other risks can be mitigated by guaranteed use of the infrastructure by the mining company.

**Economies of scale**
The economies of scale and lower marginal costs derived from shared use infrastructure, particularly in the context of rail links and port terminal usage, means increased profit margins for mining companies. It also generates higher tax revenues for the government.

**Perspectives of different role players**

**A balancing act**
Mining companies are already incentivised to raise large amounts to spend on infrastructure development: there is the potential to offer them additional incentives to develop extra capacity to be taken up by third party users. To make this work, governments have to address the concerns of the mining company to ensure an efficient, cost effective mining and logistics operation. They also have to address the concerns of the project’s funders who are seeking to mitigate construction, operational, cash flow and interface risks.

The shared use of mining infrastructure requires coordination between the government, the mining company, the mining company’s funders and potential third party users of the infrastructure, including other mining companies and local users. Each of these participants has a different assessment of the risks, and a
preferred approach to designing, funding, delivering, accessing and owning the infrastructure. These must be carefully balanced and negotiated to achieve a successful outcome.

“To guarantee the highest level of efficiency, mining companies typically seek to implement a vertically integrated operations and logistics model and require control of the construction and operation of their infrastructure”

The mining company’s approach
Mining companies are typically not incentivised to coordinate their infrastructure development efforts with a country’s national infrastructure development plans. A mining company’s objective is to ensure it has sufficient infrastructure capacity to meet its needs. To guarantee the highest level of efficiency, mining companies typically seek to implement a vertically integrated operations and logistics model and require control of the construction and operation of their infrastructure.

- Priority access rights to its required capacity
- Operational control to avoid disruptions, delays and additional repair and maintenance costs, and have flexibility to deal with breakdowns and force majeure events
- To maintain competitive and first mover advantage

In addition to capacity and efficiency, a mining company may also have other concerns with a proposal that it share its infrastructure. Where the mining company is required to share with competitors mining in the same region, it may lose the competitive and first mover advantages gained by controlling

Vale builds rail link in Mozambique

Given the limited capacity of the Sena railway connecting its Moatize mine with the port of Beira (which is currently being expanded and rehabilitated), Vale is constructing a multi-million dollar 912 km long railway line linking the mine in Tete province to Nacala in Nampula province, where Vale will build a deep-water sea port.

The railway will pass through southern Malawi. There has been talk of allowing other companies developing mines in the region, including Rio Tinto and Beacon Hill Resources, access to the railway line.

Vale is familiar with sharing infrastructure with third party users – it currently operates railway lines in Brazil which offer logistics services to third parties, and operates long distance passenger trains along stretches of those lines.
access to the region and having an integrated business. The more costly and strategic the infrastructure, the more incentives governments will have to offer to encourage the mining company to develop multi user infrastructure.

A mining company will also be concerned with being exposed to the credit risk of its competitors if another user of the infrastructure becomes unable to pay its way. The mining company will either accept this risk (and have to become comfortable that it may be underwriting its competitor) or seek to cover the risk with security from each other user of the infrastructure. Depending on the quantum of the security, that requirement alone can make the shared use of infrastructure unviable.

**Funders’ views**
Project finance lenders, whether banks or DFIs, lending to companies developing mines and infrastructure assets typically require extensive risk analysis and due diligence. They focus particularly on completion risk and ensuring cash flows will be available to service debt during the operational phase. Lenders are also concerned with interface risk, and accordingly prefer to finance an integrated development of the mine and associated infrastructure as this is the most predictable structure allowing lenders to have the greatest level of control. The less integrated the project, the greater the complexity and associated costs and risks from a lender’s perspective. A single EPC wrap with integrated completion testing is possible in an integrated project, resulting in minimised completion interface risk and delays.

However, where there is a proposal that certain aspects, such as the rail or port, will be shared use, a fully integrated approach may not be the funders’ preferred structure. Lenders will want to know in advance who the future users of the assets will be, or have the right to consent to new users being granted access to the infrastructure if their identity is unknown at the outset. This can mean that a third party mining company seeking to access the infrastructure is exposed to extensive due diligence by its own lenders and the lenders of the mining company developing the infrastructure. This level of scrutiny may not be acceptable to a third party user if it is concerned with information about its development flowing back to its competitor (as the developer of the infrastructure).

Lenders may also require additional sponsor completion if one or more of the infrastructure assets will be owned separately. Lenders will closely scrutinise the pricing and risk allocation between the various entities (usually SPVs) that hold each asset.
Different users means different issues
Third party users of mining infrastructure will differ depending on the circumstances. It may be that a mining company is required to share its infrastructure assets with other miners in the region – this may be the case where a large-scale mining operation is adjacent to junior mines or undeveloped mineral deposits. Alternatively, the focus may be on allowing one or more diverse users access to the mining company’s infrastructure – in the context of rail or road infrastructure this may mean allowing forestry or agriculture players, or even passengers, to use the transport network. Different issues will arise where the shared use is between multiple users with similar requirements, such as multiple miners, and where the shared use is between multiple users with different requirements, such as a miner and passengers using the same railway line. For example, on shared rail infrastructure passengers are usually given priority over freight which can become problematic for the developer of the infrastructure, particularly if that developer requires priority access to the infrastructure.

“Third party users will aim to obtain access rights which secure their required capacity and are granted for a long term, at reasonable tariffs”

Shared use infrastructure: the Richards Bay Coal Terminal
An existing example of infrastructure developed for the shared use of mining companies is the Richards Bay Coal Terminal (pictured) in South Africa, the largest coal export terminal in the world. RBCT is run independently, with its shares held by mining heavyweights Anglo American, BHP Billiton, Glencore, Exxaro, Sasol Mining and Total Coal, amongst others. The railway servicing the RBCT is owned and operated by stated-owned Transnet, who is considering developing another coal terminal near RBCT to service the needs of other, smaller mining companies who have limited access to the RBCT.
In all cases where the third party users are reliant on their rights to access the mining company’s infrastructure, the users will aim to obtain access rights which secure their required capacity, are granted for a long term, and to which reasonable and predictable access tariffs apply.

Where the third party users are other mining companies, these users may seek an equity share in the infrastructure asset to secure access to excess capacity – this will usually depend on the timing of the project and the financial resources of the user. Alternatively, these users may only seek access on the basis of user fees once the infrastructure is completed, in which case they may prefer a third party operator to manage the asset.

Governments may seek to intervene to ensure that users are granted access rights for a reasonable tariff. Neither the forestry nor agriculture players, and certainly not the passengers, who are relying on the infrastructure will have the financial resources to fund access charges which seek to recover capital and all operating costs. Government subsidies and regulatory intervention are likely to feature heavily in these contexts, particularly where the infrastructure investment to accommodate other users diverges from the mining company’s requirements – passenger rail links require additional safety measures, stations for regular stops, and different rolling stock for trains which travel faster. A mining company is likely to look for government support for capital expenditure and the operation of these aspects, although the government will be looking to the mining company to subsidise the use of the infrastructure by those users less able to pay.

**The government’s focus**

Using the exploitation of resources to build long-term assets has the potential to support sustainable and inclusive growth. This may provide greater benefit for the country than focusing purely on tax revenues and other fiscal advantages of granting mining rights.

Governments already take into account certain non-fiscal returns such as social...
and environmental development in the area adjacent to mines. However to incentivise mining companies to participate in shared use infrastructure models and compensate them for the capital expenditure required to develop excess capacity, governments may have to consider fiscal trade-offs such as agreeing to lower tax revenues.

The Putu project in Liberia: power to the people

In Liberia, the government requires the mining company developing the Putu iron ore project to ensure that the power plant being constructed as part of the project has excess capacity to service local communities within a 10km radius of the mine. Charges for the electricity provided must be based on residential users’ ability to pay, and for commercial users should be reasonable rates based on their usage.

This means governments have to internally prioritise the benefits of granting mineral extraction and infrastructure concessions. Where the minister of finance may be pushing for increased tax revenues, the minister of transport will be seeking to deliver logistics solutions for industry and possibly public transport solutions, while the interior minister is focusing on social welfare and employment opportunities – not all of these priorities can be achieved in every instance. This is where discussions with government early in the structuring process can yield real results for the sponsor by ensuring the best possible package is negotiated.

“Ultimately the government’s stance on a particular project will depend on the strategic importance of developing the specific type of infrastructure in the specific region”

Implementing shared use infrastructure

Cost and timing implications

Shared use infrastructure has short and long term cost implications: initial capital costs for construction, possible expansion or future development costs to increase capacity, and maintenance and on-going operating costs. Who will bear each of these costs, and in what proportion, will be a critical aspect of any shared use negotiation.
Access requested to ArcelorMittal’s railway in Liberia

ArcelorMittal has been requested by the government of Liberia to grant access to its railway line, linking iron ore mining operations with Buchanan port, to Sable Mining and other third party users, to facilitate the export of iron ore from Guinea. Expansion of the rail line will be required to ensure excess capacity is available for shared use whilst maintaining capacity for Arcelor-Mittal’s operations – how potential users will contribute to the costs of the expansion is under discussion.

To accommodate excess capacity for third party users the initial capital costs may well exceed the mining company’s original estimates. Where users have similar needs to the mining company, the additional costs will be lower – for example where the other users of a rail line are mining companies, costs will include additional spurs, loading facilities and extra rolling stock. Where the users have different needs there is a potential for vast sums of additional capital costs – for example, if passengers will have access to a rail line being built to transport coal, different rolling stock with enhanced safety specifications, and new passenger stations, will be required. This is one of the many reasons why sharing mining rail infrastructure with passengers is so difficult to achieve in practice.

Similar considerations apply to the operating costs. Multi-purpose infrastructure has to be carefully coordinated to ensure each user has access to its required capacity, at the times and intervals most efficient for its operations. Of course this depends on the infrastructure in question - it is easy to see complex coordination issues arising where coal freight and passengers use the same line, especially where it is only single-track, but a power station is unlikely to face the same coordination issues as long as it has sufficient capacity to supply all its users.

Mining companies should seek appropriate incentives and support from governments to mitigate these costs and risks.

The timing of construction can also become an issue, particularly if multiple mines are sharing the same infrastructure. The infrastructure must be fully available for use whether only one, or all, the associated mines are operating and ready...
to access it. The result is that the early user may end up paying disproportionately high tariffs until other users start accessing the infrastructure. Alternatively, later users may be required to enter into take-or-pay arrangements for their access rights, paying tariffs whether or not they are ready to access the infrastructure. To mitigate this, mines would need to developed in line with the infrastructure development timetable, which reduces the flexibility of the mining company to speed up or slow down the mine development based on changes to market conditions. In Australia proposals for shared use infrastructure projects have not proceeded due to this scenario being unacceptable to the parties involved – this is likely to be the case in Africa too.

“Mining companies, particularly large scale iron and coal miners, want to avoid the coordination costs and loss of control which result from separate ownership”

The ownership dilemma and government’s golden share

One of the principal dilemmas in facilitating the shared use of infrastructure is how to structure the ownership of the infrastructure and mining concessions. Mining companies, particularly large scale iron and coal miners, want to avoid the coordination costs and loss of control which result from separate ownership. They prefer an integrated approach where the mine and infrastructure are owned by the same entity. However, where the mining company owns the infrastructure governments may be concerned that it will exert its monopoly power, possibly charging high access tariffs and restricting access directly or indirectly by limiting available capacity.

Separate ownership: the Simandou project, Guinea

The development by Rio Tinto of the Simandou iron ore project in Guinea provides a good example of separate ownership of mine and infrastructure, and an interest held by the government. The Simandou project consists of an open-pit mine in South East Guinea, a 650km long railway and a port at Conakry, along with associated infrastructure generally required for the operation of the mine such as water supply, power plants and access roads. The mine and the rail and port infrastructure will be developed as two separate projects: The mine will be developed and owned by project company Simfer, held by Rio Tinto, China’s Chalco and the IFC, with share options held by the Government of Guinea. A third party consortium will fund, build and own the rail line and the port infrastructure. This infrastructure will be accessed by multiple users, opening up the interior of Guinea.
A separation of ownership of the infrastructure and the mine, typically with the mine acting as the anchor tenant of the infrastructure, incentivises the owner (or third party manager) of the infrastructure to maximise profits. This model facilitates shared use because the infrastructure is designed and operated to maximise capacity. However, this focus on profits, often in an environment with no competitors, means that the infrastructure is likely to be expensive for users, including the mining company, which may ultimately hinder third party access.

The natural alternative is to follow the ‘golden share’ approach, where ownership is separated into different SPVs which may have some common shareholders, and where the government holds an ownership stake in the infrastructure SPV allowing it to influence key strategic decisions.

**Acknowledging the risks**

Ideally a discussion of the potential for the shared use of mining infrastructure should take place early on between the mining company and the government, so all stakeholders are aware of and can manage and negotiate the risk allocation.

Having these negotiations early on alongside the negotiation of the applicable fiscal regime means that governments will be in a better position to clearly set out the full incentive package to the sponsor. This may include protections and compensation for the mining company in the event that it suffers losses directly related to granting access to third parties – for example, government guarantees to support the obligations and liabilities of third party users. Mining companies may also look to governments to provide additional flexibility in markets where commodity prices are falling, acknowledging that the profitability of the project will be affected in these circumstances.

It also means that once the design stage commences, the parties are clear on the capacity constraints and requirements which must be achieved, and incremental capital costs can be avoided.

**The role of a regulator and controlling tariffs**

Currently, there is little or no regulatory incentive for private developers to design projects, or expand them, to create excess capacity (other than potential excess capacity the mining company may require in the context of an expansion of its mining operations). Alongside bilateral negotiations with mining companies, governments are likely to start implementing a regulatory framework that encourages sharing infrastructure with third parties.

“Alongside bilateral negotiations with mining companies, governments are likely to start implementing a regulatory framework that encourages sharing infrastructure with third parties.”
They are also likely to put in place strong regulators to oversee the implementation of shared use infrastructure. For example, a regulator may be required to set, or if there is regulation in place which already does so, enforce the application of maximum access tariffs to ensure users are not exploited.

**What are the possible structures for delivery?**

When it comes to structuring delivery of the various types of infrastructure required by mining companies, there are a range of options to consider. The mining company may look to:

- Develop and finance all related infrastructure itself under a single financing or series of separate financings; or
- Develop and finance only parts of the infrastructure itself and instead participate with other interested parties in the financing and development of the remaining required infrastructure.

Typically mining infrastructure will be delivered using a project finance solution under which there is limited recourse for the lenders against those developing the infrastructure. Instead, lenders’ recourse will be to the assets and cash flows of the relevant project. Therefore it is on these assets (including project contracts) and cash flows that the lenders will perform due diligence to establish the extent to which the project is ‘bankable’.

It is important that the mining company carefully plans the proposed delivery solution at project inception stage to achieve a cost effective and bankable solution. Any bankability concerns later will usually give rise to a lender requirement for the mining company to provide liquidity support to meet contingent risks not adequately transferred into the contracting structure.

You don’t have to look far to see examples of projects falling at the final hurdle prior to financing because of bankability issues in the structure that were not properly addressed through the project planning stage and which cannot, in the view of the lending market, be appropriately mitigated by the mining company.

Construction risk is a key concern for lenders, since until the relevant works are completed there is no project and no access to cash flows to service debt repayment – but at the same time the lenders will have money out of the door and in the ground. A key mitigant to construction risk for lenders will be the manner in which the works are delivered and the party delivering them.
Single versus multi-contract approaches

The lenders will prefer to see the works being delivered under a lump sum, turnkey engineering, procurement and construction (EPC) contract arrangement. Under this contracting structure, the contractor will guarantee completion of the works on time, on budget and to a required specification. Depending on the covenant strength of the contractor and the security package it offers, lenders are likely to be more comfortable that completion support (or at least uncapped support) will not be required from the mining company when contracting on this basis. Conversely, where a multi-contracting solution is adopted using, for example, engineering, procurement and construction management (EPCM) arrangements, the lenders will typically see interface risk which may give rise to time and cost overrun exposure that is not easily transferred into and managed by the contracting structure. Consequently, lenders are more likely to require completion support and other contingencies and reserves from the mining company.

Key for the mining company will be to secure a position where recourse to its balance sheet, the requirement for uncapped credit support and other forms of liquidity support is limited to the fullest extent possible.

Fully integrated infrastructure delivery solution

A fully integrated solution under which the mining company finances all aspects of mine and infrastructure delivery using a single EPC contract arrangement will provide least complexity from a delivery and financing perspective.

"The lenders will prefer to see the works being delivered under a lump sum, turnkey engineering, procurement and construction (EPC) contract arrangement"
The EPC ‘wrap’ of project delivery risk will facilitate an integrated completion test and will minimise project-to-project interface risk. Accordingly, it is this structure that is least likely to require mining company completion support. This being said, it is likely that the EPC contractor will include significant contingency within its price to manage known and unknown risks. This can give rise to affordability concerns. There is also the risk that there may be no single contractor prepared to accept full project delivery risk or indeed, even if there is such a contractor, lenders may not accept that it has the covenant strength to manage this risk in a cost overrun scenario.

Whilst a single integrated completion test may be possible, there will be the possibility to stagger the financing and phase the manner in which the individual infrastructure projects are brought on-line. This may assist in opening up cash flows to the lenders to start servicing debt at the earliest point possible, to the extent that any aspect of the infrastructure is able to operate on a standalone basis. Naturally the lenders will want to control use of this cash flow until such time as the fully integrated project is completed. Lenders are also likely to require that mining company support remains in place for each aspect of the project infrastructure until the fully integrated project is complete.

Rail and port infrastructure will lend itself to a multi-user solution. Mining companies have tended to take a monopolistic approach to rail infrastructure, in particular, not wanting to open up opportunities for competitors and wanting to retain operational freedom on the infrastructure which will best enable it to achieve efficiencies and a stronger internal rate of return. This being said, the cash flow advantages that shared use can bring cannot be ignored.

Provided that the mining company retains design control and is able to manage the extent of spare capacity that is able to be used on a multi-user basis, it may feel that it retains sufficient control for such shared use of its infrastructure not to impact materially on its operations. Also, it is more likely to achieve government support if access is opened up, both in terms of restrictions being placed on competing infrastructure and subsidies on tariffs charged, for example, to private individuals using a rail line. It may also be able to obtain first refusal rights on future expansion as operations grow.

It is likely that the government will want control over tariff setting and indeed there may be independent regulation in this regard. Project finance lenders may want to see a floor price below which the local government will subsidise tariffs and they may even seek a guaranteed level of usage to remove, to some extent, demand risk from the project. It is not unusual for lenders to look for the mining company itself to accept take-or-pay obligations in respect of infrastructure usage, again to mitigate against any demand risk being assumed by lenders.
Non-integrated infrastructure delivery solution
In contrast to the fully integrated solution, limited or no integration of the separate infrastructure projects is likely to lead to increased complexity. By way of example, this may involve separate funding and a separate EPC arrangement for each aspect of the infrastructure.

Whilst increased complexity will be seen because of the interfaces created under the separate funding solutions, it is these separate funding solutions that will provide enhanced flexibility with regard to the project-wide funding mix. This may be of particular advantage where the level of debt required for one project cannot be satisfied by one source or type of funding. The structure and risk profile for each infrastructure type can, under these proposals, be shaped to suit preferred categories of debt and equity providers.

Rail and port infrastructure may be developed on a fully open access basis and this may improve the credit profile for these funding packages. The funders may still require the mining company to be the anchor user under a take-or-pay type arrangement and the funder for the mine will perform extensive due diligence on these arrangements and the mining company’s access rights and exposure to tariff escalation.

The inherent interface risk created under this structure is likely to give rise to a requirement for credit support from the mining company, particularly with regard to construction completion. The key risk for the mine funder, for example, will be

“Separate funding solutions will provide an enhanced flexibility with regard to the project-wide funding mix”
non-delivery of infrastructure required to transport raw or processed materials to market. The sizing of any completion support required from the mining company by its lenders is likely to take into account worst-case scenarios but perceived risk may be mitigated through the use of contingent facilities required to be utilised cost to complete-type tests are failed.

Funders of each of the separate portions will also be sensitive to intercreditor risks, particularly as the rail and port lenders will be structurally subordinated to the mine lenders due to the direction of cash flows through the project as a whole. Cross default provisions will have to be carefully structured to balance risk between the different groups of lenders.

Collaborative approach to infrastructure delivery

An alternative approach would be for the mining company to participate in the development of one aspect of the infrastructure, for example the rail or port, along with the third party users, whether they are other mining companies or users from other sectors also requiring development of infrastructure to more fully exploit a commodity or product, such as investors in the agricultural sector. Investment in small holding farmers by international food producers (such as that by Nestle and Unilever) to generate reliability in crop supply and quality will yield little if the international markets cannot be opened up due to the lack of transportation infrastructure required to get product to market.

Early feasibility planning in respect of the relevant infrastructure may be performed by government bodies or other quasi-governmental agencies with a view to attracting key stakeholders.

“Early feasibility planning in respect of the relevant infrastructure may be performed by government bodies or other quasi-governmental agencies with a view to attracting key stakeholders”
outline the design and agree a share in development cost risk. These arrangements must be sufficiently flexible so as to allow new participants to join during the development process, subject to the interests of the other parties not being materially affected.

Whilst the mining company will not be controlling the development of the relevant infrastructure, it will have a seat at the table with an opportunity to shape the development to meet its own particular requirements.

Once the proposals have been agreed and the outline design finalised, the project may be procured by the relevant government on a concession basis with a private sector bidder financing, constructing and operating the infrastructure for the agreed concession period. It is likely that members of the InfraCo would retain a right to contribute equity in the project to retain a level of control over key issues around access and tariff setting.

“Whilst the mining company will not be controlling the development of the relevant infrastructure, it will have a seat at the table with an opportunity to shape the development to meet its own particular requirements”

*Infrastructure company formed by key stakeholders to procure infrastructure on a long-term concession basis*
The concession will be likely to prescribe the means by which tariffs will be set but it is also likely that these aspects will need to be subject to independent regulation. The concessionaire will enter into direct access agreements with the relevant participants.

Whilst the mining company will have less control over the development, it will also have a reduced risk in the development when compared to the other structures discussed above. Its lenders for the mine development will scrutinize the shared use arrangements and will require that the mining company has certain controls (akin to a golden share type arrangement) over the granting of new access, use of spare capacity and the revision of tariff levels. The credit exposure for this lender could also be said to be mitigated through open use as an element of the demand risk to which the mining company may otherwise be exposed is reduced.

Delivering infrastructure on a shared use basis is not without its challenges and the above examples represent only suggestions as to how this may be achieved.

It is clear, however, that the success of any such strategy will require cooperation and planning, starting at central government level. This must be used to foster public and private sector investment, participation and innovation to properly harness the potential that Africa has to offer.
Conclusion

The infrastructure shortage in Africa is a hindrance to economic development and wider prosperity. It is therefore necessary for infrastructure development to be planned from a strategic point of view at a national and cross border level if such infrastructure is to properly support broad based economic development.

The opportunities for governments to leverage off the demand for their natural resource wealth should not be underestimated, but as this chapter highlights, doing so is not without its challenges. Key issues to consider are the incentives which drive each of the stakeholders and how ownership and risk allocation should be structured.

Ultimately, the higher the benefits of shared use and the more stakeholders are involved, the more important it is for the government to play an active role in negotiating and incentivising, facilitating the delivery of infrastructure with sufficient capacity, and overseeing the operation of a shared use access model.

Shared use is always going to require a give-and-take approach from all parties involved, and governments will have to take the lead in ensuring collaboration and coordination between the multiple stakeholders.

“The opportunities for governments to leverage off the demand for their natural resource wealth should not be underestimated, but as this chapter highlights, doing so is not without its challenges.”
An African perspective

SRK Consulting

Africa and its relevance in the global mining sector
There is no doubt that mineral potential in Africa is high. While South Africa’s gold sector is waning, gold is still the exploration play of choice around the rest of the continent – with about half of Africa’s current exploration spend still being employed in search of gold.

Lufilian Arc world-class orebody
Photo: SRK Consulting
The Nubian belt in Ethiopia is one of the areas holding great promise. The Lufilian Arc, stretching for some 800km from eastern Angola, through the Katanga Province of the southern Democratic Republic of the Congo to the northwest of Zambia, hosts some of the world’s most exciting copper and cobalt deposits.

While deposits in Zambia and DRC have been mined for decades, they are once again showing their true potential. Copper is also likely to play a key role in facilitating the development of new infrastructure in the region, which could pave the way for broader economic revival.

In West Africa, truly world-class deposits of iron ore in countries such as Guinea, Sierra Leone, Liberia, Cameroon and Congo-Brazzaville have recently been catching the headlines.

As uncertainties over ownership and mineral rights are resolved, these prospects look set to bring substantial opportunities to the region.

Coal will continue to sustain economic development in southern Africa – as in

“While deposits in Zambia and DRC have been mined for decades, they are once again showing their true potential”
most regions of the world – and South Africa still hosts substantial quantities of this vital commodity; the country currently needs to open new coalfields in Limpopo province as the Middelburg coalfields in Mpumalanga enter a downward trajectory.

Mozambique looks set to enter as a prominent coal player, as infrastructure is developed to link new deposits with ports and markets.

Although South Africa’s platinum sector is momentarily under severe stress from labour unrest, the country still holds most of the world’s resources in its Bushveld Igneous Complex and the metal has a long future in a range of crucial applications. Zimbabwe is also well endowed with platinum resources along its Great Dyke.

Manganese is another key commodity in South Africa’s treasure trove, and the mineral is also opening opportunities in West Africa.

“Coal will continue to sustain economic development in southern Africa – as in most regions of the world – and South Africa still hosts substantial quantities of this vital commodity”
as a less risk-averse approach to African mineral investment, with investors taking a longer-term view than has usually been the case.

**Funding and valuations**

Questions around mineral property valuation have come into stark relief following a number of large writedowns by major mining companies in the recent past. For us as consulting engineers, it puts a focus squarely on the level of due-diligence studies required for mineral investments, and reinforces the need for high-quality technical studies as a vital foundation for any mineral investment.

In this regard, uncertainty around security of mineral rights and licences remains an investor concern when mitigating risk and applying a full understanding of modifying factors to a resource estimation.

Recent issues in Guinea, DRC and SA have been unsettling to many present and potential investors. Indeed, investor security relates both to mining legislation at a high level, and to the capacity of government bureaucracy to manage processes fairly, transparently and timeously.

"Questions around mineral property valuation have come into stark relief following a number of large writedowns by major mining companies in the recent past"
While some major miners seem to have drawn back from Africa, this has left increased scope for juniors which are often acquired by mid-tier firms; there is also likely to be more Chinese engagement on the funding side.

Given Africa’s need for large (often cross-border) infrastructure projects as a pre-condition for mineral developments, there is a growing demand for new funding models that will allow the public and private sector to work together more closely so that infrastructure required for a project can be better integrated into national and regional development plans. This will also require more strategic engagement between neighbouring countries, on both a planning and implementation level.

These models need to be practically feasible, and capable of dealing with potentially large numbers of interested and affected parties.

The importance of the Equator Principles continues to be recognised when seeking funding.

*Construction of the New Kribi Container Terminal in Cameroon*
*Photo: SRK Consulting*
Working in Africa today

Much has been made of the sheer size and value of Africa’s mineral endowment, and the infrastructural and institutional difficulties of bringing this to account. However, as much as Africa is increasingly vibrant as a minerals investment destination, the investment approach itself needs to change, by incorporating a keener focus on shared value and sustainability.

For mining investors and mine operators, this means being far more sensitive to – and becoming a pro-active corporate citizen in – the socio-economic expectations and needs of host countries and host communities.

Foreign mining companies, for instance, often bring their own (external) supply chains to compensate for a lack of local skills and supplies; but there remains an obligation to build local capacity and skills. Importation of skills, while expensive and disruptive to project continuity, also erodes the investment’s potential for local development impact and undermines the sustainability and multiplier effect of mining projects.

“The investment approach itself needs to change, by incorporating a keener focus on shared value and sustainability”
Many areas of Africa boast strong local mining skills – such as Zambia and Ghana; these must be recognised, encouraged and used by mining companies to spread benefits of projects and create a more positive legacy.

The importance of community empowerment and economic development strategies to ensure long-term positive impact from mining can no longer be overlooked. Initiatives like Anglo Platinum’s Alchemy project are salutary – to engage participating communities as shareholders, to fund community-managed local development trusts, and to pursue an integrated process that builds lasting partnerships with government, business and civil society.

There has also been considerable progress by some new mining countries in paving the way for a good regulatory and contractual foundation for future mining ventures. SRK has been working closely with the government of Cameroon in such an endeavour.

In this regard, the importance of better collaboration cannot be overstated. The positive impacts of many projects are frequently undermined by insufficient co-ordination and planning at high level between government structures and mining companies.

Too often, the goal of such co-operation is limited to meeting minimum requirements for compliance, and the relationships to achieve it tend to be arduous and uncreative.

This could be different. All elements of project development - technical, financial and legal - should first be viewed from a high level by public and private
sector stakeholders, and then innovatively implemented at local level. This can lead to much greater opportunity to embrace stakeholder engagement as a valuable tool for long-term sustainability and shared value. This could also help address, for example, the tension between optimal job creation versus mechanisation – where the temptation for investors is to bring in automated processes to reduce project risk.

Governments themselves could enhance their mineral sectors’ attractiveness to foreign investment by ensuring better communication between all the relevant departments and agencies that control access to exploration and mining. Especially where infrastructure deficiencies are stalling the consideration or implementation of large projects, it is often only concerted political intervention and leadership that can pave the way for progress.

In terms of the diversity of countries which are now actively involved in mining in Africa – including Canada, Australia and China – it is perhaps surprising to note that South Africa’s role, while substantial, has not been more assertive. There is clearly more opportunity for South Africa to share its considerable experience, skills, technology and capital with the rest of Africa – considering the joint interests it shares in the potential benefits of a continent-wide energy grid, for instance.

This situation requires a more visionary approach from Africa’s southern-most nation, taking a bolder view based on a clearer framework for mutual cooperation and building on past achievements at home. It seems too frequently forgotten – even by South Africa’s own citizens and decision-makers – that the country boasts a range of world class industries from which the continent’s mining sector could easily benefit.

“There is clearly more opportunity for South Africa to share its considerable experience, skills, technology and capital with the rest of Africa”
Map showing the number of Chinese mining bureaus in each country

China’s industrial metal demand: Jan-Oct imports (annual percentage change)
Chinese mining –
FTSE indices (rebased)
Sources: FT Research; Macquarie;
Thomson Reuters Datastream
The infrastructure challenge

While Africa’s current lack of well-maintained infrastructure continues to place logistical challenges in the path of mining projects and raises operating cost hurdles, there is great potential for the mining sector to be a motivating force for integrated infrastructure development.

With better collaboration between mining companies and governments, projects including road, rail, ports and electricity can be harnessed to serve broader economic development around mine sites. With larger projects, there is also potential for better collaboration between governments, in pursuit of cross-border infrastructure schemes to facilitate mining investments.

It should be remembered that infrastructure is not just a necessary condition for inward investment, but is a key imperative for the domestic economies of African countries – most of which must confront relatively high population growth rates. The pressure is on these countries to realise the value of their respective mineral wealth endowments, to address the needs of their growing populations.

A steady supply of affordable electricity is key to the evolution of all economic sectors, so a continental grid is vital. This will require innovative funding of projects that cross national borders.

Water is also a vital resource that will require careful management, as much in cities and towns as in mining operations.

While some areas have too little water, some have too much; in both scenarios, industrial development will have an impact on communities and agriculture, and this needs to be managed by well-trained and experienced professionals.

Adapting to change

An enduring trend in the sector, as mining companies adapt to challenging market conditions, has been restructuring, right-sizing or slimming down. As targets are chased to ensure the expected investor returns, corporations often sacrifice high-level technical staff – and parcel the work out to...
consultants. An unfortunate side-effect can be the loss of institutional capacity or memory from mining companies, but it certainly places huge responsibility on the consultants concerned – to deliver a growing range of specialist, technical services with high levels of professionalism and integrity.

A related trend is the incorporation of consulting practices into large contracting or EPCM firms, which effectively leads to a situation where contractors are conducting engineering studies.

It must inevitably be asked whether their interest in the outcome of the studies can compromise their performance, as they are required to present a professional and independent view to the client.

**Risk versus reward**

The greatest risk of working in Africa’s mineral sector today is managing the expectations of communities around mines, as well as the relationship with government – in particular with the agency that is custodian of mineral rights. There is growing acknowledgement the world over that minerals must benefit all affected parties, and this has sadly not been the case in many African countries. The rise of resource nationalism is partly a response to this fact, and mining companies have to become proactive partners...
in ensuring and demonstrating more positive impacts from mining. This is not to deny the real difficulties in redressing this situation; greater government intervention without a well-prepared framework and sufficient institutional capacity can increase potential for corruption and discretionary behaviour.

“Mining companies have to become proactive partners in ensuring and demonstrating more positive impacts from mining”

However, there is nonetheless a growing need for mining companies to invest heavily in engaging stakeholders – including government and communities – and helping ensure that the various arms of government work in concert. Indeed, lack of capacity within government departments – whose respective mandates, responsibilities and regulations also sometimes need to be better aligned – can delay projects and disrupt operations.

The vast potential now on the horizon for a number of African countries in the mining of bulk commodities – such as iron ore in Guinea – highlights the importance of institutional capacity. Pit-to-port operations are complex and capital-intensive, requiring both committed partnerships and careful negotiation to construct a supply chain that releases mineral value for purposes of national development. The rewards are indeed alluring, if there is the political will and corporate vision to work towards common goals through transparent processes that allay risk.

In the current economic climate, Africa’s stature as an investment destination will receive a valuable boost if and when just one or two large projects of this
description can be successfully rolled out. There is no doubt that the expertise and technology is there to make it happen.

In terms of operational risk management, companies need to fully understand local compliance regulations, and also need to understand that global financial institutions will demand adherence to the Equator Principles in cases where national compliance standards do not match international best practice.

But equally, they need to understand that legal compliance may not be sufficient to allay all social risk; mining companies today need to recognise and understand that they must earn and maintain a social licence to mine, and this requires early and on-going engagement with host communities to ensure that their socio-economic impact is well managed.

Commodities can no longer be mined and shipped out of Africa without ensuring that value is shared effectively with host countries and host communities — to build the foundation for future growth and prosperity even after the mine has come to the end of its economic life.

This challenge demands designing for sustainability, at the technical, environmental and social level. Mines of today need to be conceived with a post-mining future in mind, and as far as possible avoiding (rather than just mitigating) negative impacts on the natural or social environment. The hidden costs of mining can no longer be externalised.

The issues outlined above point to a shifting risk profile that should be tackled from the earliest days of project conceptualisation and feasibility analysis.

The right design and strategy can save several millions of dollars in amendments and mitigation further down the line. There is always a temptation to over-accelerate and under-fund the early stages of project planning when risk is high, capital is
short and there are high levels of uncertainty about future prospects. However, there can be no excuse for unduly risking investors’ contributions when sound and independent expertise is widely available to guide new opportunities.

“The engagement and nurturing of local experts in mining companies is an essential contribution to addressing long-term sustainability practices”

On this score, it is vital to highlight the growing foundation of local skills and experience in Africa’s mining and consulting fields, which should feature strongly in the efforts of foreign investors to root their projects in host countries.

There are a number of countries in Africa with mining schools within universities or at university level – such as South Africa, Ghana, Zimbabwe, Zambia, the DRC and Egypt – and many African engineers employed in the mining sector have studied abroad.

The engagement and nurturing of local experts in mining companies is an essential contribution to addressing long-term sustainability practices; it is also an important strategy to address risk at various stages in the life of a mining project – by applying a set of skills and experience that more clearly understands local conditions and demands.

This expertise, when developed to world-class technical standards, will also be best suited for evolving and implementing the most effective responses to the various challenges that face mining in Africa.

**Conclusion**

The technical demands of working on mineral-related projects in Africa remain challenging, but the continent has seen no shortage of bold interventions by engineers and experts – both local and foreign – to tackle difficult projects and succeed. Opportunities abound in the continent’s vast resource base, estimated to constitute some 30% of the world’s mineral resources, and the industry is alive to this. Governments see the urgent need not only to attract mining investment but to ensure that these inputs leverage sustainable development in other sectors. Community expectations are high, and this can become a significant risk if not managed and addressed by proactive corporate leadership.

The future of building mines in Africa lies in closer working partnerships between governments, mining companies and citizens that are rooted in a common vision and shared value. Once regarded as lofty ideals, these are now forming part of the range of technical imperatives that must be applied at project and policy level. Sustainable development is no longer an aim but a requirement, and its benefits must now reach unprecedented numbers of Africans. Positive developments on the continent suggest that political and corporate leadership can collaborate with the abundant technical expertise available to deliver this result.
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David is an authorised Nominated Adviser with a wide range of corporate finance experience. He currently advises a portfolio of listed companies in the mining sector, all of which are at different stages of their development and many of which have assets in Africa and other emerging markets.
**Norton Rose Fulbright**

Norton Rose Fulbright is a global legal practice. It provides the world’s pre-eminent corporations and financial institutions with a full business law service. The firm has more than 3,800 lawyers based in over 50 cities across Europe, the US, Canada, Latin America, Asia, Australia, Africa, the Middle East and Central Asia. Recognised for its industry focus, the firm is strong across all the key industry sectors: financial institutions; energy; infrastructure, mining and commodities; transport; technology and innovation; and life sciences and healthcare.

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**Martin McCann**

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Martin is a recognised expert in project finance and has extensive experience of advising on the project financing of mining projects globally. He is recognised as an expert on Africa mining and finance and recently closed several African projects, including the Sierra Rutile financing in Sierra Leone, the Esaase Gold Project in Ghana and the New Liberty Gold Project in Liberia.

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SRK Consulting

SRK Consulting was formed in Johannesburg, South Africa, in 1974 as Steffen Robertson and Kirsten. Today, SRK provides focused advice and solutions for clients requiring specialized, technical services, mainly in the fields of mining, surface and underground geotechnics, water, waste materials, process engineering, the environment and social aspects as well as and mineral economics. The group employs more than 1,500 professionals internationally and has over 50 permanently staffed offices in 23 countries on six continents. In Africa, SRK has a staff of more than 470 engineers, geologists, scientists and support staff, with nine offices in South Africa, as well as offices in Zimbabwe, Ghana, DRC, Angola and Cameroon. The African offices are supported by the SRK global network. SRK is a focused mining consulting group with around 90% of the company’s businesses sourced from the international mining sector. It has completed projects globally for a variety of clients including mining companies, financial institutions, securities commissions, private industry, government departments, utilities corporations and attorneys.

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Roger is a mining engineering graduate of the Royal School of Mines with over 43 years’ experience in the industry. He spent the first 29 years of his career in management of deep-level gold mines in the Witwatersrand Basin and was a founder member of the Gold and Platinum Committee in the Safety in Mines Research Advisory Committee (SIMRAC) system, where he served as chairman for eight years. In 1996, he represented the Chamber of Mines in helping compile the Mine Health and Safety Act. He served as president of the South African Institute of Mining and Metallurgy (SAIMM) in 1998-99, and was a founder member and chairperson of the SA Mineral Resource Committee (SAMREC). He was also instrumental in the development of the SAMREC Code, first published in March 2000. He is still a member of the SAMREC/SAMVAL Committee (SSC), which revised and published the SAMREC Code in 2007 and published the SA Mineral Asset Valuation Code (SAMVAL) in 2009. He is a past chairperson and a current member of the Committee for Mineral Reserves International Reporting Standards (CRIRSCO).
Standard Bank

Standard Bank Group is the largest African banking group by assets and earnings offering a full range of banking and related financial services.

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Rajat Kohli

Global Head of Mining & Metals Coverage, London

Rajat has over 25 years’ experience in the Metals & Mining industry in various buy and sell side roles.

Before joining Standard Bank as Global Head of Mining & Metals in January 2011, Rajat ran his own boutique (2009-10), was Co-Head of M&A at ArcelorMittal (2007-08) and Managing Director in the Resources & Energy Group (running the Metals and Mining team) at HSBC (2000-07).

Rajat has an extensive advisory and capital markets track record and has worked on some of the most significant sector transactions in recent years. He has a wide relationship network, incorporating junior, midcap and senior miners, steel mills, and providers of capital (the latter including SWFs, private equity funds and trading houses).
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