

BULK MINING AND ASSOCIATED INFRASTRUCTURE DEVELOPMENT CAN SUPPORT AFRICA'S ECONOMIC GROWTH

Dr CJ Fauconnier

Chief Executive: Kumba Resources Limited

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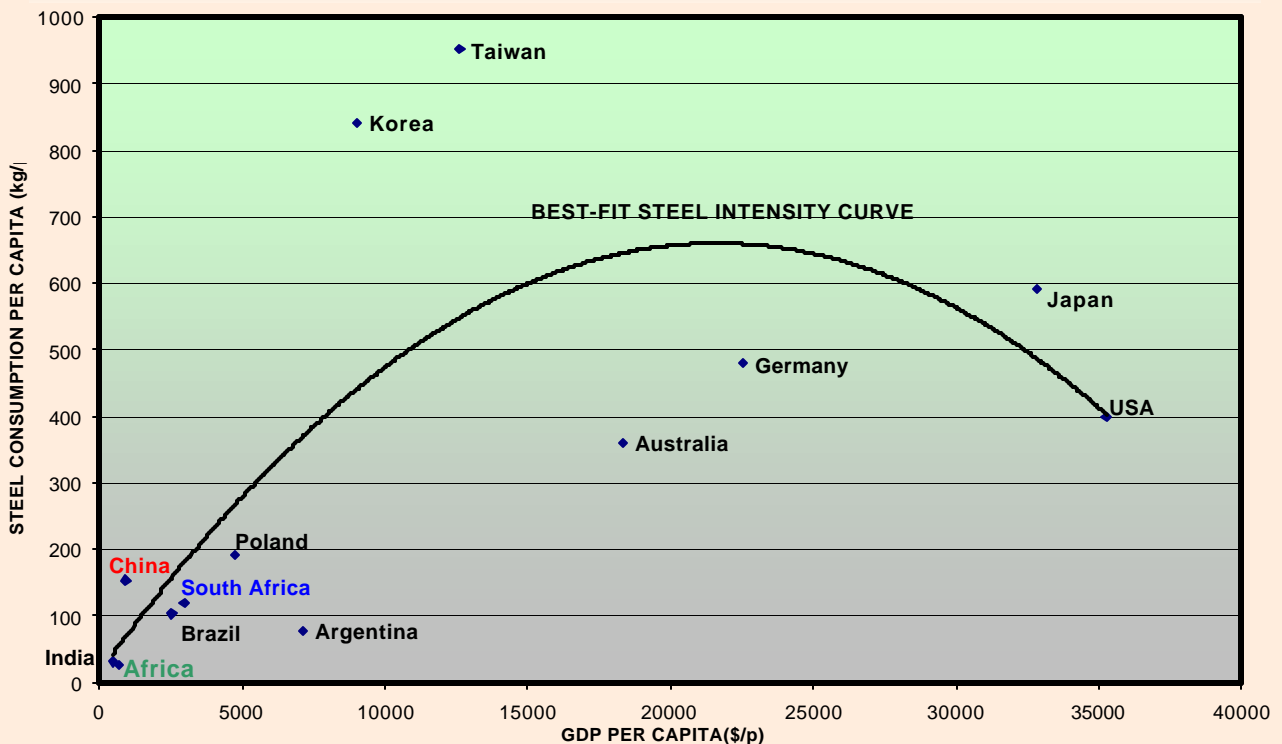
Mister Chairman, your Excellencies, Ministers and Deputy Ministers, foreign visitors, ladies and gentlemen, I am honoured to address today's august gathering.

In my presentation at last year's Indaba, I spoke about the role the mining industry can play in realising the vision of the African renaissance. Today, I will take this theme a step further and examine practical ways how bulk mining and associated infrastructure development can support economic growth in Africa.

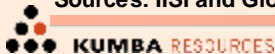
To place my following proposition in the correct context, let me first define bulk mining as being the mining of high volume, low value products, including commodities such as iron ore, coal, manganese, chrome ore, bauxite and phosphate rock. Copper and zinc concentrates and metals are sometimes also classified as bulk commodities. As iron ore and coal are the commodities that I know best, I will focus on these in my presentation.

To start off, and to indicate the economic background of my presentation, I would like to refer you to Slide 1 which depicts a measure that is commonly used as an indicator of industrial development in a country or region, namely the intensity of steel use. It is clear that developing countries (like Brazil) have very low steel usage intensity, whereas highly industrialised countries (like Japan, Korea, Taiwan) have high steel use intensity. Mature, post-industrial countries in Europe and North America have declining steel use intensity as they move away from manufacturing towards a services-based economy. Africa generally plots very low in terms of this indicator of industrialisation.

Intensity of Steel Consumption - 2001

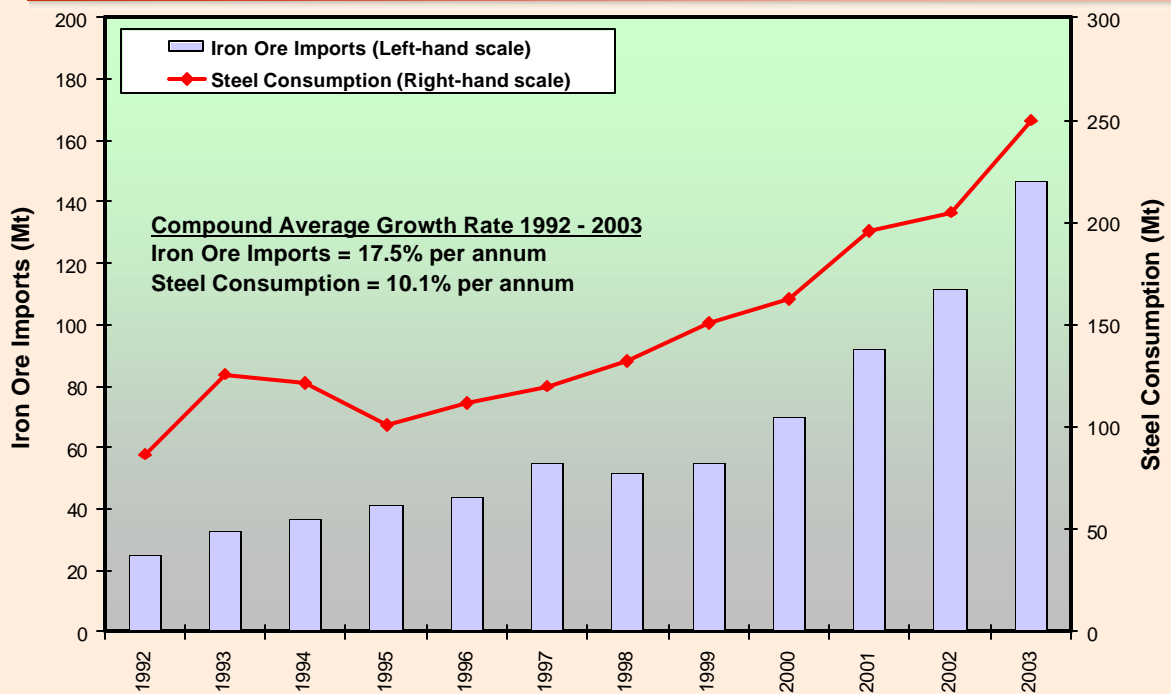


Sources: IISI and Global Insight



When we look at examples of successful industrialisation, it is appropriate to focus on China. This country is the world's most rapidly growing economy, having achieved an industrial production growth rate of some 17% in 2003. This is reflected in its steel and iron ore consumption figures, which grew at phenomenal rates during the past few years, as depicted on slide 2. Future rates of growth, although anticipated to ease somewhat, are expected to continue to be appreciably above the world average.

China's Steel Consumption & Iron Ore Imports



Sources: UNCTAD, CRU, IISI
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The expansion of its physical infrastructure has long been a cornerstone of China's industrial development plans, often associated with the exporting or importing of bulk mineral commodities. In several cases, the World Bank has been involved in the process of infrastructure rehabilitation and expansion in China. Of the steel consumed in China in 2002, more than 4 million tons were used in the construction of railway and power supply infrastructure. Even though the rapid expansion of China's infrastructure is continuing apace, the extraordinary level of economic expansion in this country is such that bottlenecks are being experienced more frequently.

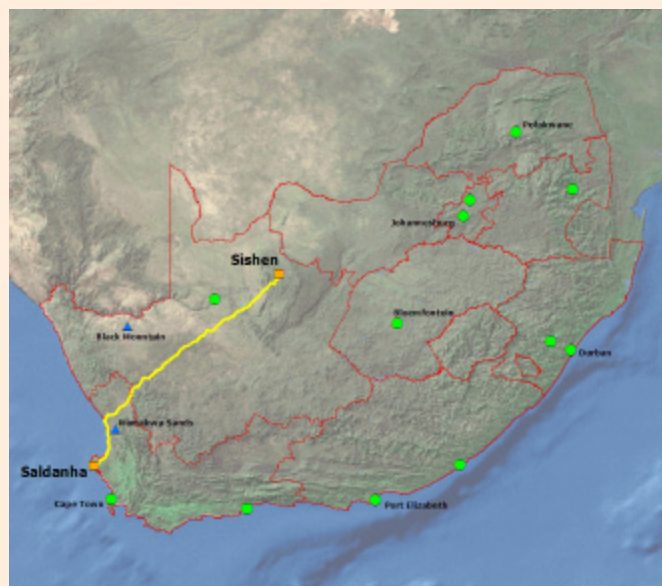
Moving closer to home, in Africa there are many examples where the synergistic relationship between bulk mining and infrastructure development has led to significant economic advantages. Examples that spring to mind are the iron ore industry of Mauritania, the manganese industry of Gabon and the phosphate industry of Morocco.

However, let me move on to focus on iron ore and coal, and specifically the iron ore and coal exporting industries in South Africa, of which I have an intimate knowledge. I will use South African examples to demonstrate how infrastructure development that supports major bulk mining projects has enabled these projects to expand, that it has created opportunities for the development of additional projects, and that it has generally brought significant benefits to the country.

During 1972 legislation was promulgated in South Africa that paved the way for the construction of an iron ore terminal at Saldanha Bay, not too far from today's venue, on the country's west coast. (See slide 3). A railway line was built from the iron ore mine at Sishen in the Northern Cape province to the port, a distance of 861 kilometres. The first train containing iron ore destined for the overseas market left Sishen mine in April 1976, and the first ship loaded with iron ore destined for Europe left Saldanha in September that year. The port's design capacity of 18 million tons per annum allowed the Assmang iron ore mining company to also begin exporting from its mine in the Postmasburg area, which is near Sishen, on the same line in early 1979. Today the two mines have about 30 customers in 16 countries around the world. Products from the Black Mountain base metals operations and Namakwa Mineral Sands operations are also transported along this railway line.

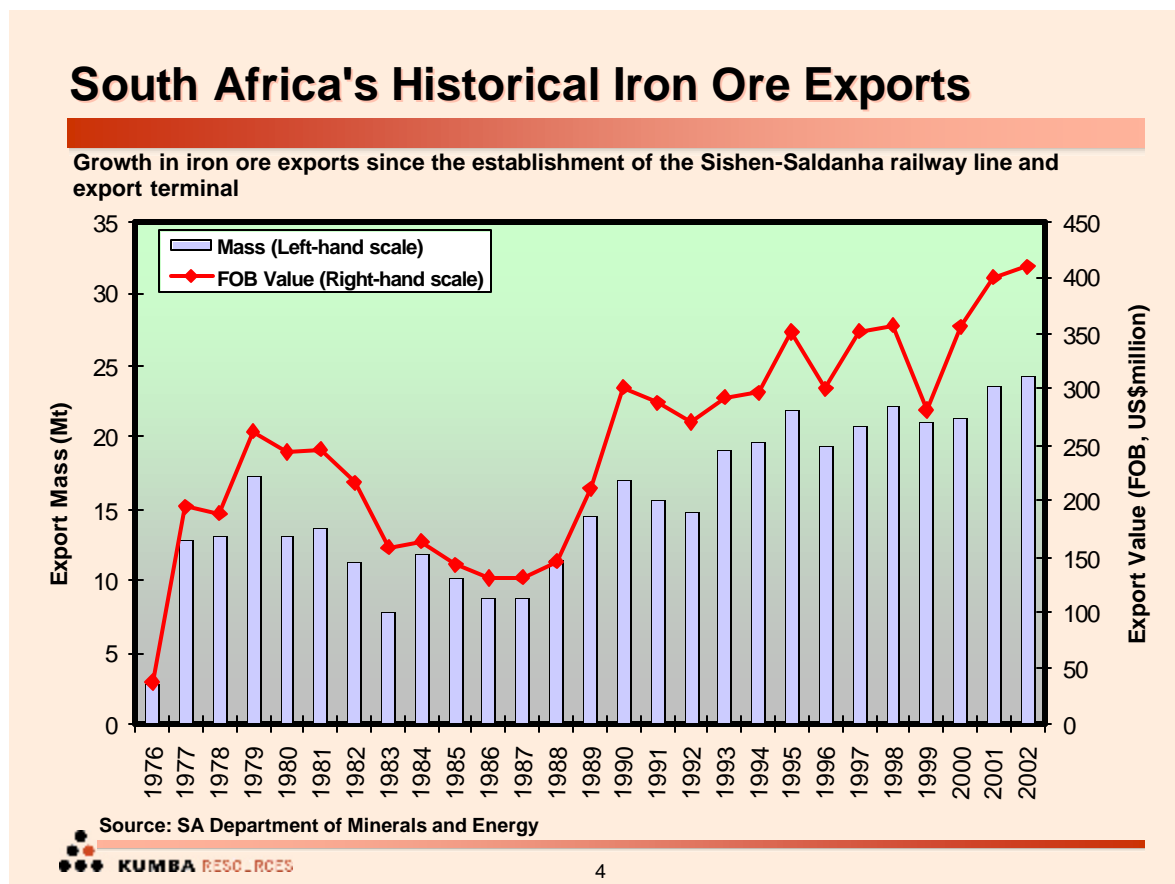
Flourishing Bulk Mining-driven Infrastructure Projects

Sishen-Saldanha example



Several improvement projects that were implemented over the years resulted in an increase in throughput capacity from the original 18 million tons per annum to an actual throughput of 24.3 million tons in 2002. Further expansions currently in progress, are expected to see the capacity of the line increase to 29 million tons per annum by 2005, and possibly to 38 million tons per annum by 2008.

Slide 4 gives an indication of South Africa's iron ore exports since the completion of the first phase of the Sishen-Saldanha project, as well as the dollar value of these exports. From 1977 to 2002 some 416 million tons of ore, contributing total revenues of some US\$6.7 billion, were exported.



The economies of scale engendered through the opening up of an export channel for Sishen iron ore also had the complementary effect of more cost-effective and efficient provision of iron ore to the domestic Iscor steel operations, which, no doubt, contributes to the success of these operations and to the growth in steel consumption in South Africa. This is a truly symbiotic relationship in which the local market is protected and supported by export demand - and *vice versa*.

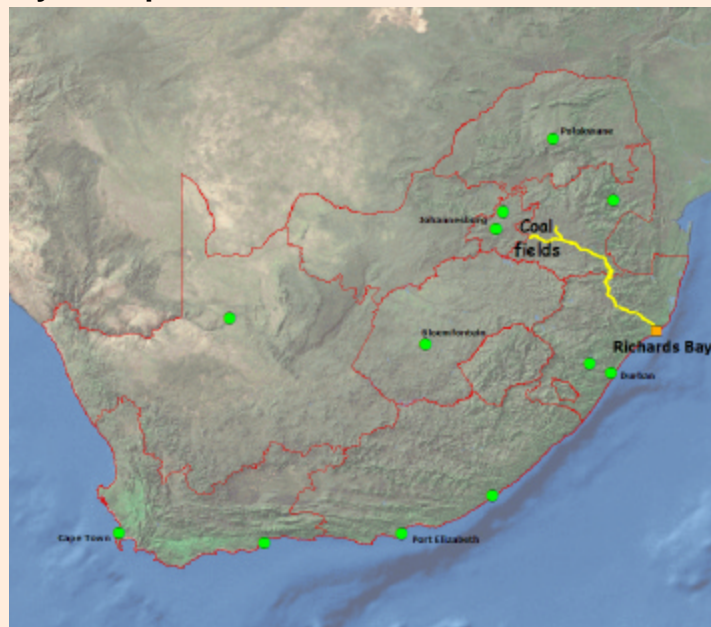
Using the iron ore available from Sishen as a platform, construction of a 1.25 million ton steel plant at Saldanha Bay was completed in 1999. Duferco also established a downstream galvanised steel operation in association with this steel plant. The development of the deep-sea port at Saldanha also created favourable conditions for the establishment of an oil import and storage facility as well as the Namakwa Sands titanium slag smelter.

Again, it's all about infrastructure – when it's there, it enables the development and expansion of bulk mining projects which attract the resultant economic benefits for the region and country as a whole.

Let's look at another example. On the east coast of South Africa, the signing of long-term coal supply contracts in 1969 led to the establishment of a new deep water port and coal terminal at Richards Bay and the construction of a 600 kilometre rail link from the main coal producing areas. (See slide 5). This was the result of a unique cooperation process between Government and industry, with the latter responsible for the coal-loading terminal.

Flourishing Bulk Mining-driven Infrastructure Projects

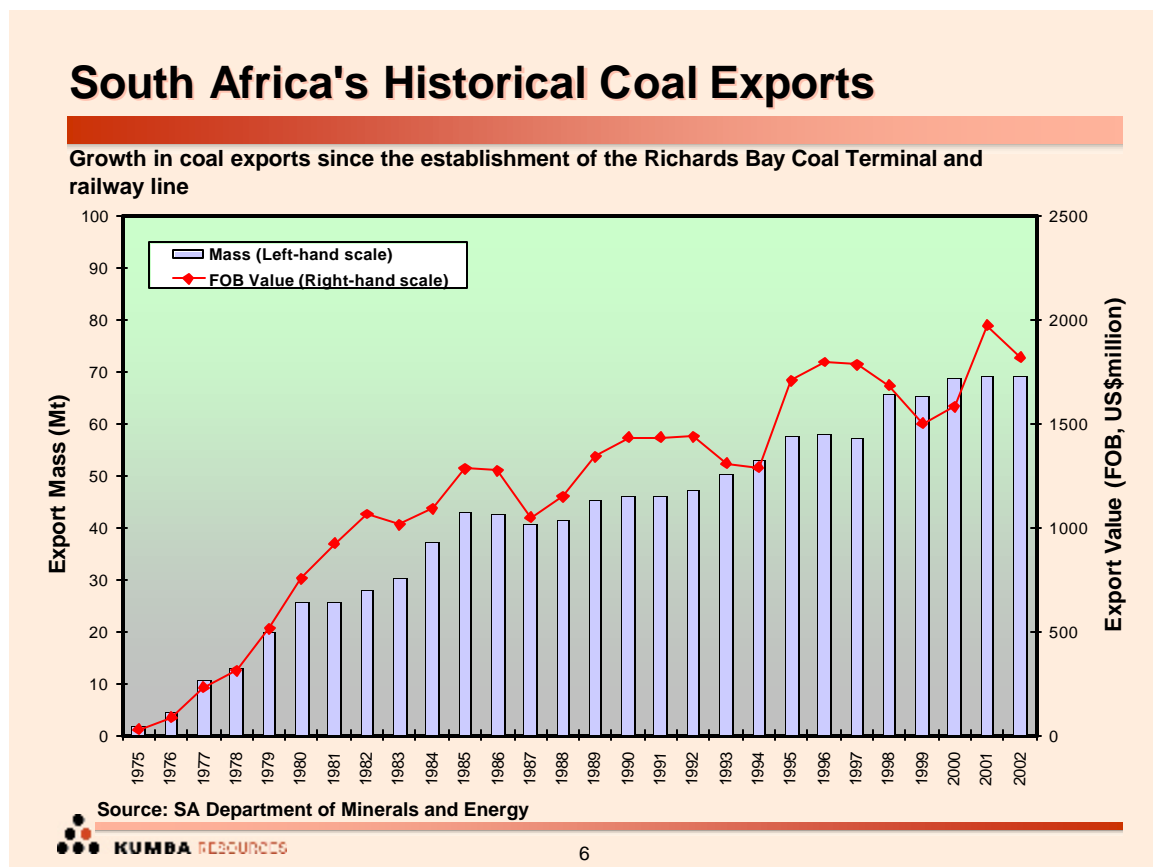
Richards Bay example



The project became operational in 1976 with a design capacity of 10 million tons per annum. Through the phased implementation of various expansion projects, this capacity has increased to the current 72 million tons per annum. The Phase 5 expansion project, due to be

implemented soon, will increase the capacity even further, to 82 million tons per annum by 2005/2006.

Slide 6 shows the growth in South Africa's bituminous coal exports since the establishment of the Richards Bay rail and port facilities, including the dollar value of these exports. Only a small fraction of these derive from coal exports through Durban and Maputo. From 1976 to 2002 some 1 160 million tons of bituminous coal were exported, contributing about US\$32.8 billion in foreign exchange.



Since the establishment of the Richards Bay deep-sea port, this infrastructure hub has seen the development around it of mineral sands mines and titanium slag smelting operations, aluminium

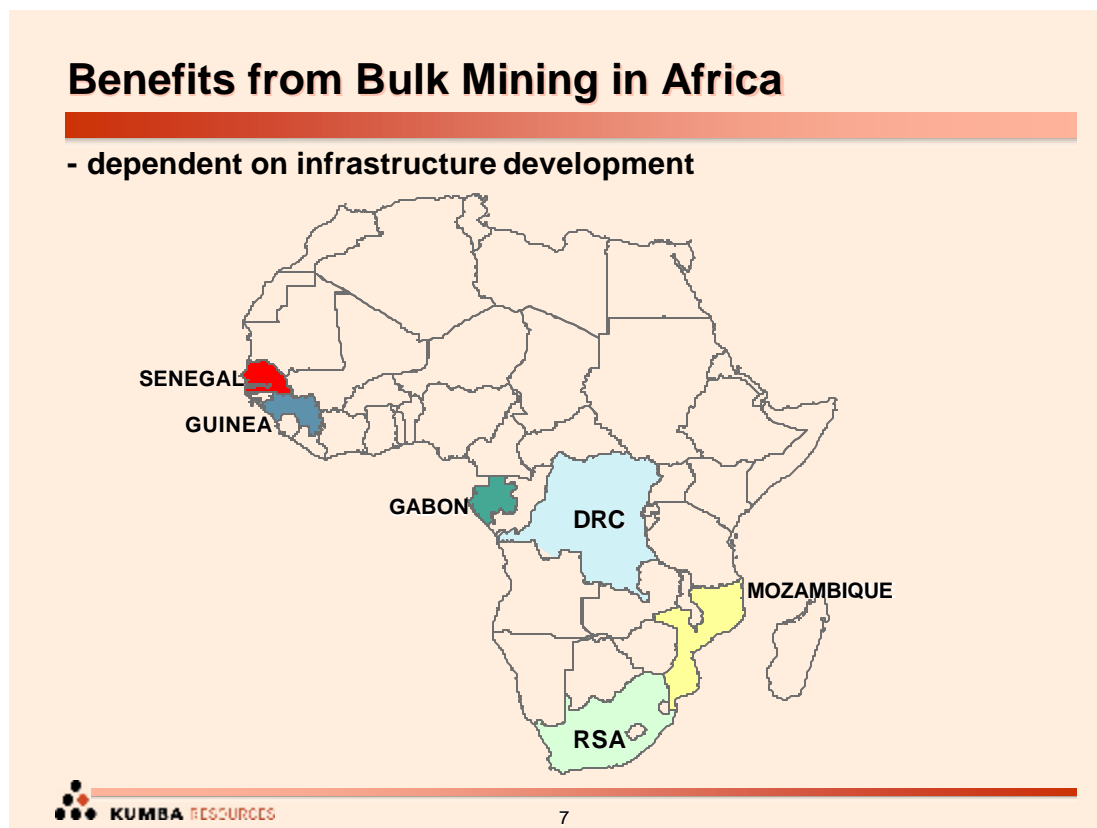
smelters, phosphoric acid production facilities and paper and wood industries, primarily for export markets. A ferrochrome smelter is also currently being planned. The port also serves as an important conduit for the importation of bulk commodities, destined primarily for industries in the Gauteng province.

The establishment of transport and energy infrastructure linked to bulk mining operations not only leads to the direct establishment of employment opportunities and foreign exchange revenues, but also to the establishment of regional development hubs, as has been the case with the Saldanha and Richards Bay port developments. The construction of the infrastructure also requires the provision of other bulk commodities that are often sourced internally, such as aggregate, sand and limestone. In addition, the availability of the primary bulk commodities being mined in their country of origin, under the right conditions, usually stimulates further beneficiation and fabrication, as well as industries that render products and services to these industries. For example, the development of the Richards Bay Coal Terminal and the port led to Richards Bay area being one of the fastest growing areas in South Africa. Not only were large industries attracted, but financial services, retail, the property market and a host of other services boomed. None of this could have happened without the development of the port as the result of bulk commodity mining.

The Chamber of Mines of South Africa calculates that the local mining industry has a multiplier effect of 1.5 in terms of the contribution to the GDP of the country. Infrastructure thus creates positive spin-offs for a country's broader economy as the other

industries and economic activity can 'piggy-back' on the rail network and port facilities. An additional golden thread that runs through this all is the complementary development of human capacity.

Bulk mining then has undoubtedly had an enormous positive impact on the South African economy. Let's look beyond the country's borders to the rest of Africa. Broadly speaking, the African continent is rich in minerals, and this includes a range of the bulk minerals. Slide 7 shows some African countries with significant deposits for example, of iron ore and coal where the provision of infrastructure could have a marked impact on the development of these deposits, as well as the economies of these countries and their neighbours. In several cases, pre-existing rail lines have been damaged or destroyed through civil war, at huge cost to the economic development potential of the continent.



The well-explored part of the Faleme iron ore deposit in south-eastern Senegal has a measured reserve of 260 million tons. The exploitation of this resource would require the construction of port facilities near Dakar and a railway line of 741 kilometres, of which an existing stretch of 430 kilometres will need to be upgraded. Such a line could also have a positive impact on mining and economic developments in neighbouring landlocked Mali, to say nothing of the impact on the interior of Senegal itself.

The iron ore deposits of the Nimba mountain range of southern Guinea hold an estimated 300 million tons of iron ore. Development of these would require port facilities and a railway line of about 750 kilometres through Guinea, of which some 450 kilometres would have to be upgraded. A railway line from the region in which these deposits are situated to the port of Buchanan in Liberia would be much shorter and would obviously also be favourable for the economy of Liberia. This would require the reconstruction of the existing railway line of 240 kilometres and port facilities, an option that can begin to be considered with the return of peace and good government to that country.

Gabon, already a significant exporter of manganese ore, also has some 560 million tons of iron ore resources situated at Belinga in the north-east of the country. Development of this iron ore deposit would require a railway spur of some 230 kilometres to the Libreville line. The latter would need to be upgraded over a distance of some 340 kilometres, as would the port facilities at Libreville. Such a line

could also be of great importance to the northern landlocked regions of Congo Brazzaville.

In Mozambique, the Moatize coal deposit in north-western Tete province in the Zambezi River valley could support both a power station and a coking coal export venture. The deposit has a total resource of more than 1.5 billion tons of coal. In addition to the power station, such a development would require the extensive refurbishment of some 575 kilometres of railway infrastructure from Moatize to Beira, as well as the export facilities at that port.

Historically, Zimbabwe too has had viable iron ore, coal and steel industries which, through lack of capital and unfavourable investment conditions in recent years, have fallen into decline - but they could be resuscitated. In Nigeria, a bold initiative was made a decade ago to develop the domestic Ajakouta iron ore, coal and steel project, but an inadequate business model and the loss of capital funding following the collapse of the Soviet Union resulted in this grand initiative being suspended when close to completion. It too might be revived.

As a last example, the greatest impact in Africa would probably flow from the reconstruction of the railway line from Lubumbashi in the DRC to Lobito in Angola - both countries that have been ravaged by decades of political instability and that have seen the mining industry of the DRC reduced to a shadow of its former glory.

These are just a few examples to show that under stable political conditions, with legislation conducive to foreign investment, African

countries have the potential to benefit hugely from the proceeds of large bulk mining projects.

It is the mining of bulk commodities like iron ore - and also coal, copper, zinc and others - that can truly contribute to sustainable economic development. With due respect to my peers in the diamond and gold mining industries, although these activities certainly generate substantial wealth, they do not normally have the potential to create extensive local long-term infrastructure development as is the case with bulk mining.

But to enable all of this to become a reality, the process needs to be kick-started. It is just not economically viable for a single bulk-mining project to carry the costs of the infrastructure developments as outlined in this presentation. African governments will need to act as primary catalyst to get international development institutions on board to assist with the establishment of the required infrastructure. Infrastructure development is capital intensive, these are numerous examples of how this investment can be recouped in the long run through transport and port tariffs. In this respect, South Africa's Orex and Coallink lines are undoubtedly the most profitable of the state-owned transport utility Transnet's rail operations and enable it to fund less profitable, though essential general freight and commuter services. In addition, once an infrastructure base has been established, expansions are possible at marginal cost, yielding attractive returns, thus stimulating further investment.

The outlook for the bulk commodity markets is also excellent, and is expected to remain buoyant in the longer term, primarily due to the strong demand anticipated to come from rapidly industrialising countries such as China, India and some of the CIS countries.

Development agencies, such as the World Bank, have also shown that they have the ability to be a catalyst in the development of infrastructure and mineral and energy resources. Perusal of the World Bank's list of projects and programmes show numerous examples of this all over the world.

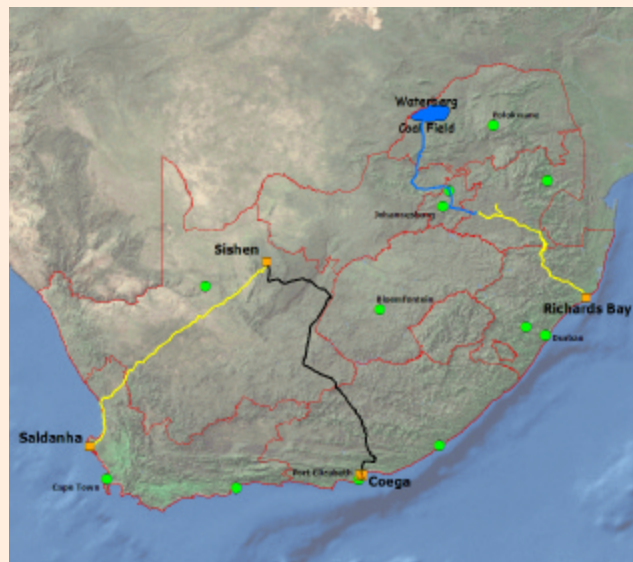
When African governments listed priorities in terms of the NEPAD initiative, infrastructure and energy development received prominent mention. However, it is my contention that in order for any of these initiatives to be successful in the long run, the basis would need to be sustainable economic development. The latter can be kick-started with the development of the bulk mineral resources of the continent. This will require greater priority and urgency regarding infrastructure development on the continent.

Turning to the South African environment, the government's plan to spend an additional R100 billion on road, rail and other transport as well as telecommunications and energy infrastructure is to be commended. From a mining point of view, such funds would not be invested better than in the expansion of the capacity on the Sishen-

Saldanha Orex line and the upgrading of the existing railway line to the new port at Coega in the Eastern Province, on the south-east coast of South Africa. (See slide 8). This would enable the country to fully realise the enormous potential for ferrous mineral mining in the Northern Cape province. In addition, the extension of the Richards Bay Coallink line to the Waterberg coalfields in western Limpopo Province would unlock one of the greatest relatively underdeveloped resources that the country has remaining. This is especially relevant in view of perceptions that the resources in the Witbank coalfield, currently the main source of both electricity generation and export quality coal, are rapidly being exploited and that production will have to be shifted to other coalfields in South Africa, such as the Waterberg which is estimated to contain about 40 % of the remaining coal reserves in the country.

Infrastructure

– the key to unlocking the full Northern Cape ferrous mineral and Waterberg coal potential



TO SUM UP

- There are numerous countries with bulk mining potential in Africa;
- If developed, the products of these mineral deposits can be exported to generate foreign revenue. For example, there is a strong world demand for iron ore that is likely to continue for the foreseeable future;
- The exploitation of raw materials in a country invariably leads to the establishment of downstream activities and services;
- The development of local infrastructure will provide spin-offs in the form of job creation, creation of secondary industries and of economic wealth; and
- Finally, Africa has the resources: it now needs infrastructure. The ball is firmly in the court of respective African governments to take advantage of their mineral wealth to achieve sustainable economic growth.

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