



Pocket Guide to South Africa 2008/09
MINERALS AND MINING

Mining and minerals policy is based on the principles of the Freedom Charter, according to which the mineral wealth beneath the soil will be transferred to the ownership of the people as a whole.



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The Mineral and Petroleum Resources Development Act (MPRDA), 2002 has opened doors for the substantial and meaningful participation of black people in the exploration and exploitation of mineral resources. The MPRDA, 2002 enshrines equal access to mineral resources, irrespective of race, gender and creed.

The Department of Minerals and Energy has received more than 18 000 applications for prospecting, exploration and mining since 2004, resulting in the development of many new projects.

Some of the country's most important minerals are:

- gold – the unique Witwatersrand Basin yields some 96% of South Africa's gold output
- diamonds – the country is among the world's top producers
- titanium – heavy mineral-sand occurrences containing titanium minerals are found along the coasts
- manganese – enormous reserves of manganese are found in the sedimentary rocks of the Transvaal Super Group
- platinum-group metals (PGMs), chrome and vanadium – more than half of the world's reserves occur in the Bushveld Complex in Mpumalanga, Limpopo and North West
- bituminous coal and anthracite – seam beds occur in the Karoo Basin, in Mpumalanga, KwaZulu-Natal, Limpopo, Free State and the Eastern Cape
- copper phosphate, titanium, iron, vermiculite and zirconium – are found in the Phalaborwa Igneous Complex in Limpopo.

Policy

The MPRDA, 2002 aims to:

- recognise that mineral resources are the common heritage of all South Africans
- promote the beneficiation of minerals
- guarantee security of tenure for existing prospecting and mining operations
- ensure that historically disadvantaged individuals (HDIs) participate more meaningfully
- promote junior and small-scale mining.



South Africa's mineral reserves, 2007

Commodity	Unit	Reserves	%	World ranking
Alumino-silicates	Kt	51	n/a	n/a
Antimony	t	200	4,7	4
Chrome ore	Mt	5 500	72,4	1
Coal	Mt	27 981	6,1	8
Copper	Kt	13 000	1,4	14
Fluorspar	Mt	80	16,7	2
Gold	t	36 000	40,1	1
Iron ore	Mt	1 500	0,9	9
Lead	Kt	3 000	2,1	6
Manganese ore	Mt	4 000	80	1
Phosphate rock	Mt	2 500	5,0	4
Platinum-group metals	Kg	70 000	87,7	1
Silver	t	n/a	n/a	n/a
Titanium minerals	Mt	244	16,9	2
Uranium	Kt	341	7,2	5
Vanadium	Kt	12 000	32,0	1
Vermiculite	Kt	80 000	40,0	2
Zinc metal	Kt	15 000	3,3	8
Zirconium	Kt	14 000	19,4	2

Mt=megaton, Kt=kiloton, t=ton, n/a=not available, Kg=Kilogram

Source: Department of Minerals and Energy



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In terms of the Act, new-order rights may be registered, transferred and traded, while existing operators are guaranteed security of tenure. Mining rights are valid for a maximum of 30 years and renewable for another 30 years, while prospecting rights are valid for up to five years and renewable for another three.

An empowerment charter for the industry, which is supported by mining houses and labour, targets:

- 15% ownership of mines by HDIs within five years
- HDIs holding 40% of junior and senior management positions within five years
- 26% HDI shareholding within 10 years
- 10% participation by women within five years.

Government is committed to helping junior and small-scale miners upgrade their operations into economically viable units. The first step is to legalise these mines.

The South African Small-Scale Mining Chamber was launched in July 2005 in Kimberley in the Northern Cape.

Reserves

South Africa's reserves of the following commodities are the highest in the world:

- manganese
- chromium
- PGMs
- gold
- vanadium
- alumino-silicates.

Gold

South Africa's gold production decreased by 7,2% from 272,1 t in 2006 to 252,6 t in 2007, largely as a result of the mining of lower-grade ore, made economic by higher rand gold prices, as well as new safety procedures. Gold's total sales revenue increased by 1,6% to R38 billion, due to a 19,7% rise in the average Rand price for the year, despite lower sales volumes.



South Africa's mineral production, 2007

Commodity	Unit	Production	%	World ranking
Aluminium	Kt	914	2,4	9
Alumino-silicates	Kt	265	59,0	1
Antimony	t	3 354	2,5	7
Chrome ore	Kt	9 683	n/a	n/a
Coal	Mt	247,8	4,5	5
Copper	Kt	110	0,7	16
Fluorspar	Kt	285	6,0	4
Gold	t	253	10,3	2
Iron ore	Mt	41,3	2,5	7
Lead	Mt	42,0	1,2	11
Manganese ore	Kt	5 589	14,2	2
Nickel	Kt	42,0	3,1	9
Phosphate rock	Kt	2 556	1,7	10
Platinum-group metals	Kg	304 031	56,7	1
Silver	t	70	0,3	21
Titanium minerals	Kt	1 181	19,5	2
Uranium	t	639	1,6	11
Vanadium	Kt	23,5	40	1
Vermiculite	Kt	200	38,5	1
Zinc metal	Kt	31,4	0,3	25
Zirconium minerals	Kt	405	41,6	2

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Source: Department of Minerals and Energy



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Silver

South Africa's silver mine production in 2007, at 69,8 t, was 19,7% lower than the 2006 figure of 86,9 t. Silver was produced as a by-product of the gold, lead-zinc, copper and PGM mines. Local sales value decreased from R11,0 million to R10,9 million due to the higher price, despite lower sales volumes. The export sales value decreased from R239,6 million to R224,1 million.

Coal

In 2007, South African mines produced 247,7 million tons (mt) of coal. Of this, 182,8 mt were sold locally for R19,7 billion, and 67,7 mt realised R24,4 billion on export markets. South Africa has estimated recoverable coal resources of 31 billion tons.

Coal meets about 88% of South Africa's primary energy needs. Eskom announced its intention to begin diversifying its primary energy mix (using less coal) five years ago. It is building open-cycle gas turbines at Atlantis and Mossel Bay, of which 1 024 megawatt (MW) was commissioned in 2007 in record time. In addition, Eskom plans to build a 100-MW wind facility in the near future, pending licensing approvals. Feasibility studies continue regarding other renewable-energy and gas-plant initiatives.

Many of the coal deposits can be exploited at extremely favourable costs and, as a result, a large coal-mining industry has developed.

In addition to the extensive use of coal in the domestic economy, some 28% of South Africa's production is exported internationally, mainly through the Richards Bay Coal Terminal, making South Africa the fourth-largest coal-exporter in the world.

South Africa's coal is obtained from collieries ranging from among the largest in the world to small-scale producers.

Operating collieries have been decreasing. Of these, a relatively small number of large-scale producers supply coal primarily to electricity and synthetic fuel producers. About 46,5% of South African coal mining is done underground and about 53,5% is produced by opencast methods.

The coal-mining industry is highly concentrated, with five companies, namely Anglo Coal, BHP Billiton, Sasol Mining, Exxaro



The South African Diamonds and Precious Metals Regulator was launched in March 2008. It promotes beneficiation and equitable access to diamonds and precious metals. It ensures that all industry players are compliant with the Kimberley Process Certification Scheme.



Through administering licences and export approvals, the regulator strives to ensure that local demand for diamonds and precious metals is catered for, and that growth in the local beneficiation of precious metals actually happens.

While the South African Diamond Board had an essentially regulatory role, the new regulator also has a beneficiation promotion role. The regulator intends to be more interactive with aspiring beneficiaries, and to mentor and ensure growth in this sector. Outreach programmes and pilot projects are in the pipeline.

Coal, Kumba Coal and Xstrata Coal accounting for 90% of the saleable coal production. The eight largest mines account for 61% of the output.

Platinum-group metals

South African PGM production dropped by 1,7%, to 304 t in 2007 from 309,3 t in 2006. Production of platinum and palladium decreased by 5,3% to 160,9 t and by 3% to 83,6 t respectively, while the production of rhodium rose by 7,2% to 21,1 t. PGM export sales revenue increased by 23,1% to R66 billion, due to a higher average rand basket price for 2007, despite lower sales volumes.

Non-ferrous minerals

In 2007, sales in this sector totalled R19 billion, representing 8,5% of total mineral sales. Local sales made up 40,8% of total non-ferrous mineral sales.

Ferrous minerals

South Africa is an important source of ferrous minerals, being the largest producer of chromium and vanadium ores and a leading supplier of their alloys. It is also a significant producer of iron and



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manganese ores and a significant supplier of manganese alloys, ferrosilicon and silicon metal.

International crude and stainless-steel manufacturing industries, which consume over 90% of ferrous mineral production, drive the demand of these minerals. The recent tightness in raw material supply/demand has pushed ferrous mineral prices to record levels. As a result, revenues generated from mineral sales increased by 40% to R49,8 billion in 2007, when compared to 2006, despite the 4% weakening of the Rand/Dollar exchange rate.

Around R38 billion of sales revenues were derived from exports, which consist of less than 1% of primary minerals, mainly iron ores.

Industrial minerals

This sector comprises a wide variety of generally non-metallic minerals, with local sales accounting for some 88% of total revenue from industrial minerals in 2007. Local sales increased by R900 million from R6,9 billion to R7,8 billion in 2007.

The greatest contributor to the local sales value was sand and aggregate (43%), with limestone and lime (21,8%) being the second-biggest contributor. Fluorspar (28,7%), andalusite (26,4%), vermiculite (18,3%) and granite (14,9%) were significant contributors to the value of exports.

Processed minerals

Ferro-alloys and aluminum are the greatest revenue earners in this sector, contributing 78% of the R54,76 billion sales in 2007.

In rand terms, processed mineral sales were 21% greater than in 2006. Exports yielded 76% of the total sales of processed minerals.

Other minerals

This sector is dominated by diamonds, with support from hydrocarbon fuel, uranium oxide and silver.



The industry

The commodities boom of 2005 continued into 2006, and preliminary figures for 2006 indicated that mineral sales grew by 36,7% to R195,2 billion and those of processed minerals grew at a moderate 14,5%. Unlike in other mining countries, this strong growth in mineral sales was initially not matched by any meaningful fixed capital investment. A marked improvement has been noted in this area.

With the implementation of the MPRDA, 2002 and the Mining Charter, there is an increase in the number of women participating in the mining industry.

The most significant transactions approved recently saw the creation of black-owned companies. Anglo Platinum sold a majority stake in the Lebowa Platinum Mines to Anooraq, the third-largest producer of platinum in South Africa. Furthermore, Anglo Platinum sold its 22% shareholding in Northam to Mvelaphanda Resources, making Northam a black-owned and -controlled mine. Anglo Platinum also sold 50% of its stake in the De Brochen Project to Mvelaphanda, making this project 100% black-controlled.

In relation to coal, Anglo Operations through Anglo Coal, facilitated the creation of a new coal company, Anso Inyosi Coal, wherein HDIs own 26% of its equity. Kgalagadi Manganese is 80% owned by an empowerment company.

A number of community projects have been approved, wherein communities are holders of mining rights. Some examples of these are: Itereleng Bakgatia Resources, Marual Platinum and Lesizwe Platinum.

