



South Africa's mineral wealth is staggering. Few, if any countries, have such vast reserves of so many important minerals. This mineral wealth is found in diverse geological formations, some of which are unique and extensive by world standards. Some of the country's minerals include:

- gold – the unique and widespread Witwatersrand basin yields some 98% of South Africa's gold output.
- diamonds (in kimberlites, alluvial and marine) – the country is ranked fifth in terms of production.
- titanium – heavy mineral-sand occurrences containing titanium minerals are found along the coasts.
- manganese – enormous reserves of manganese are found in the ancient sediments of the Northern Cape.
- platinum group metals (PGMs) and chrome – these minerals occur in the Bushveld Complex in Mpumalanga, Limpopo and North West. More than half of the global reserves of chrome and platinum are found in this deposit.
- coal and anthracite beds occur in the Karoo Basin in the northern and north-eastern (Mpumalanga) parts of the country.

- copper phosphate, titanium, iron, vermiculite and zirconium occur in the Phalaborwa Igneous Complex in Limpopo.

South Africa's reserves of seven commodities rank highest in the world. These are:

- manganese, 80% of world reserves
- chromium, 76%
- PGMs, 56%
- gold, 52%
- vanadium, 44%
- alumino-silicates, 37%
- vermiculite, 40%.

In 2001, mining contributed R66,8 billion to gross domestic product (GDP) compared with R59,1 billion in 2000, a 13% increase. This constitutes 7,5% of GDP. Mineral products accounted for just one one-third of South Africa's total exports. There is still a great deal of potential for growth in the exploitation of minerals in the country, especially where the country is ranked number one in terms of reserves.

#### South Africa's 'heavy-weight' mineral exports, 2001\*

Commodity	Export mass in kt
Aluminium	476
Alumino-silicates	133
Chrome ore	931
Chrome alloys	1853
Coal	66 752
Dimension stone	762
Fluorspar	259
Iron ore	23 519
Manganese ore	1 528
Manganese products	616
Phosphate products	981
Silicon products	89
Special pig-iron	491
Titanium products	1 059
Vermiculite	154
Zirconium products	428
Sub-total 'heavy-weights'	100 031

\* Preliminary data  
Source: Minerals Bureau

South Africa's large reserve base and important position as a world producer mean that the country's mineral industry is export-oriented: for vermiculite it contributes 97% of world exports, vanadium 76%, aluminosilicates 50%, ferrochromium 53%, PGMs 47%, chrome ore 41%, and manganese ore and ferromanganese 27%.

For these commodities, as well as for gold and PGMs, it is also the world's largest exporter. Other important export commodities include zirconium minerals, coal and fluorspar.

Because of this vast mineral resource base, South Africa is, to a large degree, self-sufficient with respect to the usage of minerals. However, some minerals and mineral products need to be imported owing to an insufficiency of local resources or the fact that their deposits in South Africa cannot be economically exploited. Another factor is that certain specialised grades and products are not produced in South Africa.

The more notable imports into South Africa in 2001 were diamonds, alumina, certain ferro-alloys, coking coal, phosphate rock, sulphur, magnesite and magnesia.

Based on preliminary data, South Africa's total primary mineral sales are estimated to have increased by 15,8% to R113,9 billion in 2001. Additionally, total processed mineral sales increased by 8,7% in 2001, to some R24,6 billion. The combined total for primary and processed mineral sales is estimated to have increased by 14,6% in 2001, to R138,5 billion.

Domestic primary mineral sales revenue increased in 2001 by 14,5% to R25,3 billion.

Export revenue was 77,8% of primary minerals revenue, and 77,5% by value of all primary and processed minerals sales in 2001. In 2001, the PGMs, gold, processed minerals and coal accounted for 85,3% of all mineral exports, which were shipped to more than 85 countries.

## Gold

Rationalisation of regional ownership and operations

moved forward in 2001, especially in the southern Free State gold-fields, where the process is nearly completed. Harmony Gold and the empowerment-controlled African Rainbow Minerals made a successful joint bid for AngloGold's Freegold assets. Continuing new investments into deeper extensions at Moab, Target and South Deeps have commenced output contributions.

### **Coal**

Revenue from coal increased by \$163 million, or 5.7%, in 2001 to regain the \$3 billion level that was last exceeded in 1998.

World coal prices strengthened considerably towards mid-year, but sales volumes were relatively unchanged. Just over 30% of the sales volume was exported, accounting for 63% of the sales revenue.

Investments in new coal-mining and transport infrastructural developments are still awaiting prospects of sustained strong activity and firm prices.

### **Platinum-group metals**

A noteworthy feature has been the dramatic increase in domestic sales revenue over five years, from almost zero to \$464 million in 2001, largely to supply a developing manufacturing business providing automotive exhaust catalysis systems for world markets.

PGM mining investments in progress, committed and proposed, involving new mines, extensions, mineral processing plants and smelters will be substantial over the next five years. New entrants, often representing previously disadvantaged community interests, are mostly participating through joint ventures with established major operators.

### **Base minerals**

Refined copper, nickel and cobalt, and titanium and zirconium concentrates dominate this sector, with

support from zinc, lead and arsenic concentrates. The sector contributes some 12% and 4% respectively to total primary local sales and total primary export sales. About 44% of total revenue is local sales for further added-value operations.

World prices for base minerals collapsed in 2001, typified by heavy declines in the London Metal Exchange-priced metals aluminium, copper, nickel, lead and zinc. First signs of a recovery were evident by the end of 2001. Provisional statistics indicate that South African base mineral sales fell by \$100 million, or 11,4%, to \$780 million in 2001.

### **Ferrous minerals**

This sector consists of the ores of iron, manganese and chrome, dominated by iron ore. It has been a leading performer in the primary minerals industry over the last 16 years, with revenue in Dollar terms growing at almost 3% annually. Demand depends on the fortunes of the world steel and stainless steel industries.

Recessionary economic conditions in the developed world during 2001 impacted negatively on ferrous minerals demand and prices. Improved iron ore sales were insufficient to off-set this trend. Overall ferrous mineral sales fell by \$28 million, or 3,5%, below the 2000 revenue.

### **Industrial minerals**

This sector comprises a wide variety of mineral products, from which 69% of revenue is local sales. Sector sales revenue fell by \$27 million, or 4,4%, to \$582 million in 2001.

Four commodity groups have accounted for four-fifths of local sales, namely aggregate and sand (24,5%), limestone and dolomite (25,9%), phosphate rock (data withheld) and sulphur (5,2%).

Five commodity groups have contributed some nine-tenths to industrial minerals export revenue of

\$180 million: granite dimension stone (44,2%), phosphate rock (data withheld), fluorspar (14,3%), andalusite and vermiculite (8,4% each).

### **Processed minerals**

Ferro-alloys and aluminium dominate this sector, with solid support from titanium slag, phosphoric acid, vanadium, zinc metal and low-manganese pig-iron. Through investment in beneficiation, it has been the outstanding performer in the minerals industry over the last 16 years, with revenue in Dollar terms growing at 6% annually.

### **Other minerals**

This sector is dominated by diamonds, followed by hydrocarbon fuels, uranium oxide, silver and semi-precious stones. Sales revenue was boosted enormously in 2000 by diamond sales that were held back from the previous year and by a strategy to amortise commercial diamond inventories.

In 2001, the sector's sales returned to a more typical recent level of just over \$1 billion. Almost two-thirds of sales were exports, and a strong share of local sales arose from products of the domestic hydro-carbon wells, which are not directly exported.

New investment potential remains strong in this sector, which has recovered enormously through new investments in operations since 1994, compensating for the rapid demise of uranium oxide demand in nuclear applications since the late 1980s.

### **Policy**

The Department of Minerals and Energy is the primary Government institution responsible for formulating and implementing policy.

The Minerals Development Bill was published for public comment in December 2000. Now called the

Minerals and Petroleum Resources Development Act, 2002, this legislation aims to:

- recognise that mineral resources are the common heritage of all South Africans and collectively belong to all the peoples of South Africa
- promote the beneficiation of minerals
- guarantee security of tenure for existing prospecting and mining operations
- ensure that mining contributes to rural development and supports those communities affected by mining operations
- redress the effects of past racial discrimination by ensuring that historically disadvantaged persons participate more meaningfully in the mining industry
- ensure that a proactive social plan is implemented by all mining companies
- promote junior and small-scale mining
- uphold good environmental practices and sustainable development.

With the Act, government's commitment to guarantee security of tenure is clearly spelt out. Prospecting rights are valid for a maximum period of five years and renewable for a further maximum period of three years. Mining rights are valid for a maximum period of 30 years and renewable for a further 30 years.

The broad-based Socio-economic Empowerment Charter for the South African Mining Industry, which has the support of the mining houses and unions concerned, was approved by Cabinet in October 2002.

The Charter commits the industry to give previously disadvantaged groups preferred-supplier status and, perhaps most significantly, commits mining firms to transferring 26% of assets to historically disadvantaged South Africans within 10 years.

#### DID YOU KNOW?

South Africa's reserves of seven commodities rank highest in the world. These are manganese (80% of world reserves), chromium (76%), platinum-group metals (56%), gold (52%), vanadium (44%), aluminosilicates (37%) and vermiculite (40%).

South African mining consists of large focused mining companies that include Anglo Platinum, AngloGold, De Beers, Implats and Iscor.

In 2001, the mining industry employed 408 894 people. The gold-mining industry remained the largest employer at 49,9%. Taking into account the multiplier effect of the supply and consumer industries, including dependants, many millions rely on the mining industry for their livelihood. More than R24 billion was paid out in wages.

Over the past five years, South Africa's gold-mines have been plagued by diminishing economic reserves and consequent cost controls. Since 1990, more than 200 000 workers have lost their jobs through retrenchments in the gold-mining industry alone.

The Government has put into motion an extensive discussion process between itself, organised labour and employers. It aims to formulate an official policy, making gold-mining an important contributor to the reconstruction of South Africa's post-apartheid economy.

One of the most crucial tasks facing government is to legalise small-scale mining by helping to upgrade these operations into economically viable businesses. This task is ongoing and, for the period April 2001 to March 2002, the National Steering Committee of Service-providers to the Small-scale Mining Sector (NSC) received over 100 applications, of which 12 pilot projects were approved.

The NSC is focusing on identifying small-scale mining operations in poverty nodes to enhance economic development in these mainly rural areas. A number of such areas have been singled out for attention. The NSC has also played a pivotal role in the regeneration of economic activity in former mining and labour-sending areas currently in a state of economic decline.

The Department of Minerals and Energy played a leading role in the establishment of the Kimberley Process, which aims to prevent conflict diamonds from getting into the global diamond-market industry and to protect legitimate trade.