



SOUTH
AFRICA

Factsheet

2020

Investing in South Africa's Mining and Mineral Beneficiation Sector

Creating shared value



the dti

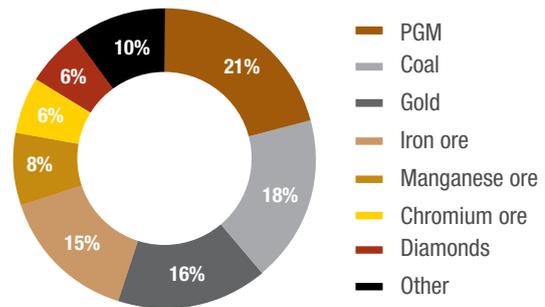
Department:
Trade and Industry
REPUBLIC OF SOUTH AFRICA

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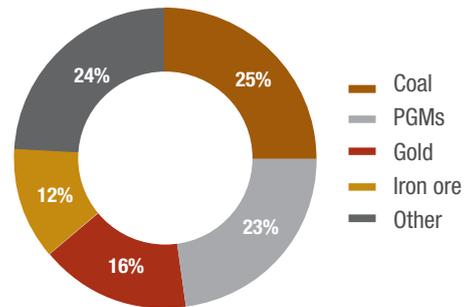
Mining and mineral beneficiation in South Africa

- > Mining and mineral beneficiation plays a pivotal part in South Africa's economy. The country's mineral reserves are among the most valuable in the world.
- > South Africa has the world's largest reserves of platinum group metals (PGMs) and manganese, and some of the largest gold, diamonds, chromite ore and vanadium deposits.
- > South Africa's mining industry is the fifth largest globally in terms of gross domestic product (GDP).
- > The mining sector contributed R356bn or 7.3% to South Africa's GDP and accounted for 25% of the country's total export earnings. Platinum, coal and gold are the three largest mining exports.
- > In 2018, the mining industry contributed R93bn to fixed investment, which constituted 17% of private sector investment and 10.5% of total fixed investment, respectively.
- > South Africa's well-integrated mining value chain supplies inputs into various manufacturing sectors including metal fabrication, automotive and jewellery manufacturing.

Mining exports by commodity, 2017



Contribution to mining value added, 2018



7.3% Contribution of SA's mining industry to GDP

Why invest?

Well-established infrastructure

South Africa has a well-established infrastructure network that is geared towards the extractive industry and supports the beneficiation of minerals extracted in South Africa.

Largest railway network in Africa



Key inputs for emerging technologies

According to the Department of Mineral Resources, SA holds more than 90% of global platinum group metals (PGMs) reserves and 75% of global supply. PGMs play an important role in the manufacturing of emerging fuel cell technology.

90% of global PGMs reserves



World-class talent development

The Wits School of Mining Engineering at the Witwatersrand University in Johannesburg is recognised as one of the top mining engineering schools in the world. In 2018, the school was the leading mining engineering school in Africa and ranked in the Top 15 globally.

#1 mining engineering school in Africa



3000m+ deep mines



Diverse, world-class mineral portfolio

South Africa holds some of the world's largest reserves of precious metals, refractory metals, base metals and energy minerals. This diverse mineral reserves portfolio supports the sector's long-term growth outlook.

50+ different minerals



Global leader in deep-level mining

A number of the world's deepest mines are located in South Africa, which has led to the acquisition of unique deep-level mining expertise. AngloGold Ashanti's Mponeng Mine is the world's deepest gold mine reaching 3 400m below surface.

Where to invest?

Distinctive geological structures and settings:

- > **Witwatersrand Basin** (Gauteng, Free State, Mpumalanga, and North West): gold, uranium, silver, pyrite and osmium
- > **Bushveld Complex** (North West, Mpumalanga and Limpopo): PGMs, copper, nickel, cobalt mineralisation, chromium, vanadium-bearing titanium ore, fluorspar and andalusite
- > **Transvaal Supergroup** (Northern Cape and Limpopo): manganese and iron ore
- > **Karoo Basin** (Mpumalanga, KwaZulu-Natal, Free State and Limpopo): bituminous coal, anthracite and shale gas

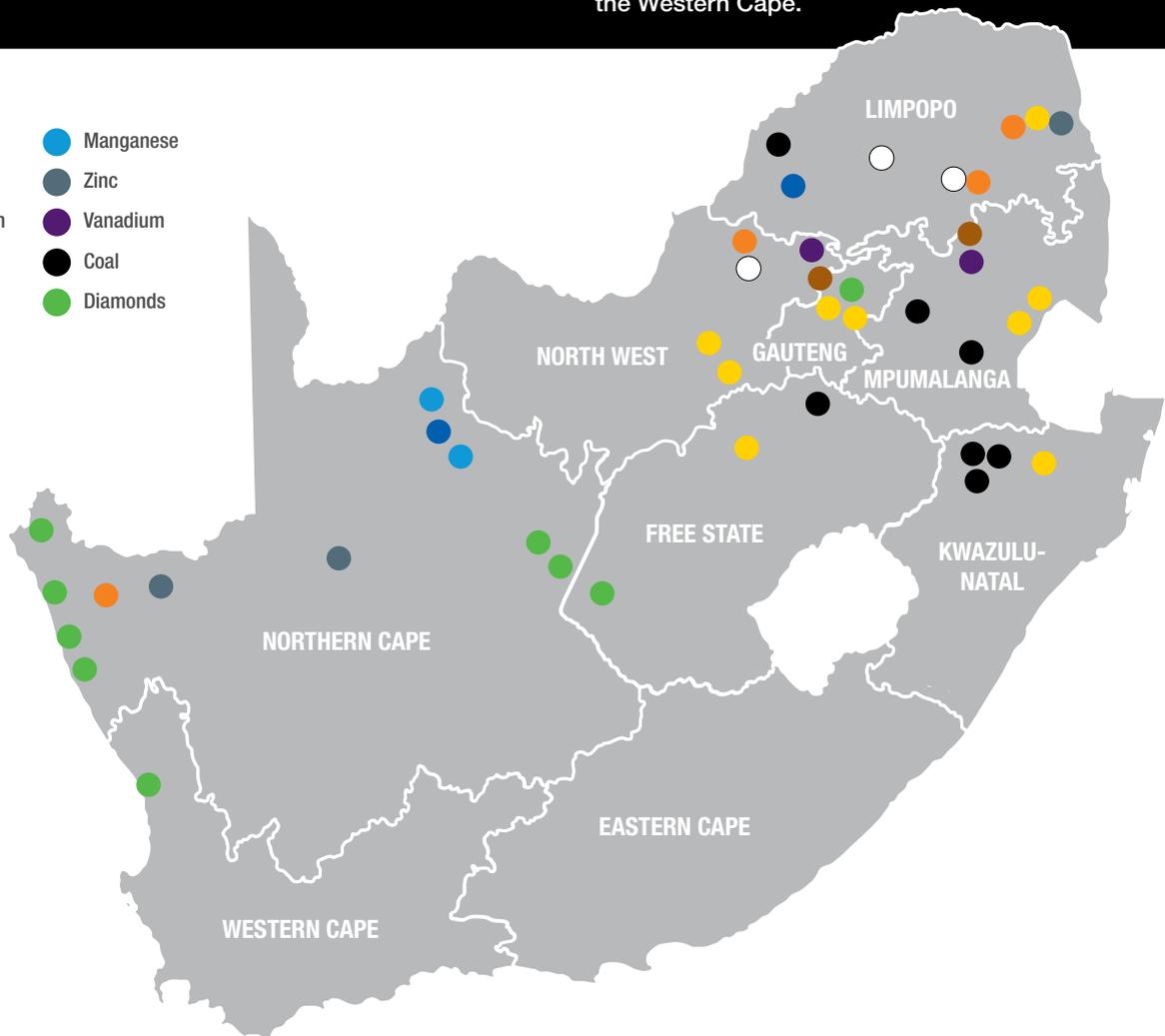
- > **Phalaborwa Igneous Complex** (Limpopo): copper, phosphate, titanium, vermiculite, feldspar and zirconium ores
- > **Kimberlite pipes** (North West and Northern Cape): diamonds

Beneficiation:

- > Most precious metal beneficiation takes place in Gauteng.
- > Steel mills that process iron ore are located in Gauteng, Mpumalanga, KwaZulu-Natal and the Western Cape.

KEY:

● Gold	● Manganese
● Copper	● Zinc
● Chromium	● Vanadium
○ PGM	● Coal
● Iron ore	● Diamonds



#1 gold deposit in the world: The Witwatersrand Basin holds the largest gold deposit in the world from which more than two billion ounces of gold have been mined so far.

#1 diamond in the world: The largest diamond to date – the Cullinan Diamond – was discovered at Premier Mine in Cullinan, South Africa in 1905.

What support exists?

- > The mining and mineral beneficiation industries hold the potential to substantially contribute to economic growth, job creation, transformation and infrastructure development, consistent with the government's objectives of inclusive growth. Given this potential, there are a range of sector-specific and general support programmes and initiatives supporting the sector. The South African 2018 Mining Charter has contributed to policy and regulatory certainty in the sector.



National Incentive Programmes

- Manufacturing Competitiveness Enhancement Programme (MCEP)
- Capital Projects Feasibility Programme (CPFP)
- 12I Tax Allowance Incentive
- Global Business Services (GBS) Incentive
- Critical Infrastructure Programme (CIP)
- Black Industrialist scheme (BIS).



Skills Development Support

- Mining Qualification Authority skills training and development
- Department of Mineral Resources internships and bursaries
- Universities and Technical and Vocational Education and Training (TVET) colleges provide courses in mining engineering, artisan, geology, etc.



Special Economic Zones

- The OR Tambo Special Economic Zone (SEZ) (Gauteng) and the Makhado SEZ (Limpopo) support beneficiation of precious metals and minerals.
- A third location – the Bojanala SEZ (North West Province) – has been earmarked as a new site for mineral beneficiation of platinum group metals.



Other support programmes

- Support Programme for Industrial Innovation (SPII)
- Technology and Human Resources for Industry Programme (THRIP)
- Workplace Challenge Programme (WPC)
- The Department of Mineral Resources Small Scale Mining (DMR SSM) support programme
- African Mining Partnership (AMP).

What are the opportunities?

- > Given South Africa's endowment of natural resources and its already established mining industry, there are a range of opportunities ranging from the development of resource deposits to manufacturing and beneficiation along the value chain.

Key opportunities include:

Coal

- Development of new coal resources
- Coal-bed methane
- Coal-to-liquid
- Carbon capture and storage
- Coal ash beneficiation (cementitious input material production)
- Coal ash for acid mine drainage neutralisation

Uranium and thorium

- Nuclear fuel fabrication

Iron and steel

- Supply of technologies aimed at enhancing competitiveness
- Downstream manufacturing (foundries and mini-mills)

Manganese

- Development of new manganese resources
- Development of value chain linkages to the global steel value chain
- Development of value chain linkages with global energy storage value chains

Titanium

- Establishment of smelters and downstream production
- Production of titanium dioxide pigments
- Production of titanium metal for 3D printing applications

Vanadium

- Development of new vanadium resources
- Development of linkages to the global energy storage value chain

PGMs and chrome

- Primary resource development in the Bushveld Igneous Complex
- Value chain development for catalysts and fuel cell manufacturing
- Development of ferrochrome production capacity

Precious metals and diamonds

- Jewellery manufacturing

How to invest?

Opportunity identification

- 1 Conduct feasibility study for your product or service
- 2 Evaluate outcome of feasibility study
- 3 Take investment decision
- 4 Decide on investment strategy in order to best align to the market opportunity

Go ahead



Location identification



Resourcing requirements (HR, capital, finance, IT)



Compliance and legal affairs

Investment preparation

- ✓ • Decide on geographic location most suitable for investment
- ✓ • Consult property specialists, real estate agents to identify suitable sites for operations
- ✓ • Conduct site visits of suitable locations
- Consult with HR/recruitment agencies about staff requirements
- Determine immigration requirements
- Determine funding model (e.g. self-funding, debt, equity)
- Consult with IT systems providers
- Determine corporate structure
- ✓ • Determine licensing and permit requirements
- Consult with labour lawyers
- ✓ • Consult with InvestSA to identify eligibility for incentives, skills and other support initiatives

Investment execution

- Acquire/lease site, rent office space
- Apply for municipal services (e.g. water, electricity)
- Conduct interviews, hire staff
- ✓ • Apply for work permits for expatriate staff
- Open a bank account
- Apply for finance
- Set-up IT infrastructure/systems
- ✓ • Register company
- ✓ • Apply for licenses and permits
- ✓ • Apply for National Level Incentives Schemes, Skills and Other Support Programmes

Key contacts for more information

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Information sources

BMI, various years; Council for Geoscience, 2019; Department of Mineral Resources, various years; **the dti**, various years; InvestSA, 2018; Minerals Council South Africa, various years; Statista, 2019; StatsSA, 2019; The Wits School of Mining Engineering, 2018

Research partner | **Deloitte.**



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