MAIL & GUARDIAN, Business
10 Feb 2012, p.6

The future is beneficiation

But the strategy to boost industry has a major stumbling block: readily available power

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Beneficiation is the new buzz word in government's resource-nationalism plan, which proposes taxes on the export of raw materials in a bid to boost manufacturing in downstream industries and create jobs.

"Nationalisation is off the table," Minerals and Resources Minister Susan Shabangu declared at the Mining Indaba this week. "But the beneficiation policy is definitely going ahead. Beneficiation is the vehicle through which South Africa's resource-based comparative advantage can be transformed into a national competitive advantage."

The *Mail & Guardian* has a copy of the beneficiation policy, which is in its second draft and draws from a model pioneered in the Nordic countries. It proposes "export-import duties" on some minerals and "competitive pricing mechanisms" for certain industries. Intervention is mooted in the value chain of coal, platinum, iron ore, steel, energy, autocatalytic converters, diesel particulates, titanium and jewellery.

The draft policy, which feeds into the ANC's 600-page "State Intervention in Minerals Sector" report, dovetails South Africa's industrial policy action plan and the new growth path, which identifies mineral beneficiation as one of the priority growth nodes to help create five-million jobs by 2020.

One of the government's biggest gripes is that South Africa is a rich mining jurisdiction with an estimated mineral wealth of $2.5-trillion, yet a considerable amount of its mineral resources is exported as raw ore or only partially processed. This is particularly important in the context of the country's inequality, poverty and 24% unemployment rate. "We must not be told 'we have a 30-year commitment outside of South Africa, sorry, we can't give you anything'," Shabangu said. "We want to see something when we require that to grow our new industries, but also to create jobs."

But Shabangu said it was not the government's intention to "force mining companies into being manufacturers, but rather to address the challenge of the inaccessibility of our raw materials as an impediment to greater local beneficiation".

In 2008, before the global financial meltdown knocked mining profits, gross revenue from sales of all minerals in South Africa amounted to just less than R300-billion. Similarly, just more than R86-billion was generated from the processing of base and precious metals and other minerals, representing 11% of the total volume of minerals produced. "This represents the opportunity loss in export revenue and employment-creation opportunities," states the paper.

But the government acknowledges in the paper that it cannot pull off the beneficiation strategy without "intensive co-ordination" across a range of departments, particularly mineral resources, economic development, trade and industry, science and technology, public enterprises, energy and the treasury, as well as business and labour. The beneficiation paper cites access to raw materials at developmental prices, infrastructure (access, costs and logistics), limited innovation and, more broadly, research and development and the shortage of critical skills as constraints to implementation.

The concept of beneficiation is not new in South Africa. For example, the bulk of the country's electricity is generated from coal power stations, which consume more than 50% of its annual production of coal.

But energy supply, rising power costs and the threat of carbon taxes are the biggest hurdles to the success of beneficiation, said the Chamber of Mines, which has contributed to the draft policy.

Beneficiation is an energy-intensive industry because it requires the smelting and resmelting of products. Also, most beneficiated products are exported and South Africa is unable to compete with the low labour costs and high skills levels in jewellery markets such Italy and India. "With the local power supply system in severe distress and unlikely to have readily available power until at least 2015-2016, beneficiation can't work," said Chamber of Mines senior economist Ruqshana Hassan.

South Africa's electricity prices (with tariff increases of 25% until 2013) are becoming internationally uncompetitive compared with China and India. "Our electricity forward-price curve is unfavourable. This has already resulted in some downstream operations closing or relocating overseas," Hassan said.

Some of South Africa's energy problems are tied to coal and the accessibility of the commodity. The world now relies on coal for 40% of its electricity (in South Africa, China and India it is more) and 66% of steel production is dependent on coal. In the future, coal-conversion technologies will make synthetic gas and liquid-transportation fuels derived from coal an attractive alternative. Coal also plays an important role in cement manufacturing and other industrial processes.

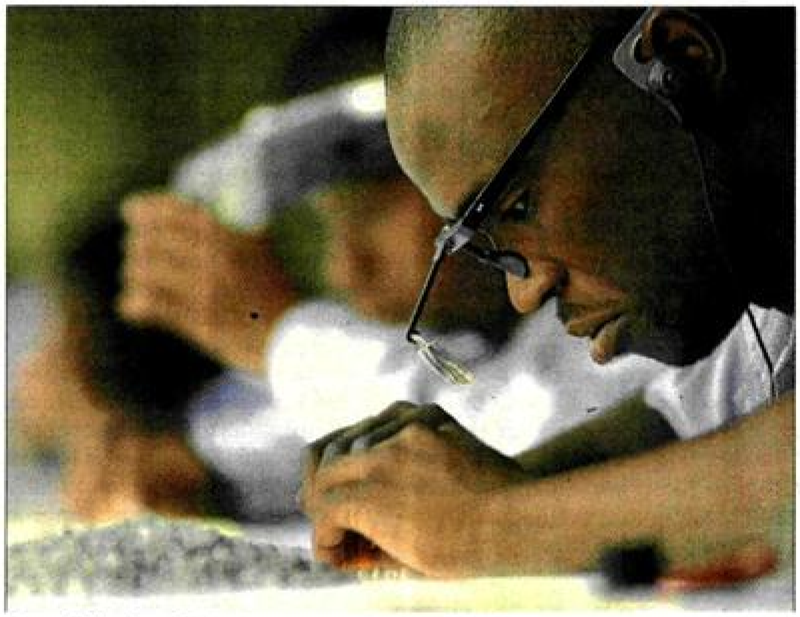
Some of the proposed interventions for coal include new policies for the clean and efficient use of coal in power generation and investment into research, development and innovation of clean coal technologies. Researchers have been exploring the possibility of using thorium as an alternative fuel for nuclear reactors, which is three times more abundant than uranium.

In the steel and stainless steel industries, which are major consumers of iron ore, manganese and chrome — and South Africa is a major producer of these ferrous minerals — the government is planning to bring in new players to spur competition.

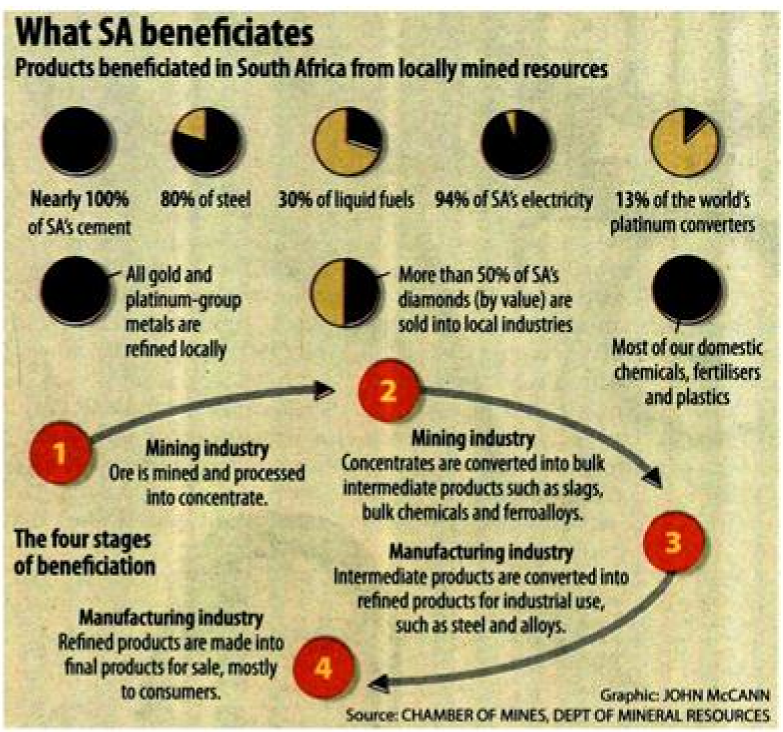
"Current anticompetitive pricing practices in the steel industry, particularly from steel giant ArcelorMittal South Africa, are one of several constraints to the growth of manufacturing industries," says the paper.

"Access to competitively priced iron ore, as well as manganese, chromium, nickel and vanadium, are essential for the projects identified to be viable and to enable the new facilities to compete with existing players. The development of the plants would also assist in creating an environment for competitive pricing in the domestic market."

Another proposal is to set up integrated jewellery hubs throughout the country to increase the beneficiation of gold and diamonds.



One of the beneficiation suggestions in a draft paper proposes the establishment of jewellery hubs to process gold and diamonds



What must be done

The Chamber of Mines has said the plan can work only if the government creates an enabling environment to attract manufacturing fabrication companies to invest in South Africa. It proposes that the government:

- **Improve access to foreign markets for manufactured products;**
- **Develop special economic zones for manufacturing beneficiation that are, for example, duty-free, VAT-free and have tailor-made infrastructure;**
- **Lower the cost of capital in the country;**
- **Facilitate access to inputs at globally competitive prices (for example, in the case of steel, electricity and water);**
- **Provide the right type of skills for specific projects;**
- **Improve the logistical infrastructure; and**
- **Promote and give incentives for research, development and innovation.**