

Survival strategies for the metallurgical industry*

by G.S. Bartlett†

The theme of this Colloquium, survival strategies, not only conveys a sense of urgency but also takes cognizance of the fact that, as in the political arena, tough decisions have to be made and acted upon in the years to come. It is therefore appropriate that the SAIMM, as spokesman for the metallurgical industry, should be dealing with these issues at this time, and I wish to commend the organizers of this Colloquium for focusing on a matter as important as the future of this great industry. In view of this, I regard it as an honour and privilege to officiate on this occasion, where the best of South Africa's brain power in the metallurgical field will be harnessed with a view to moulding strategies for survival.

ROLE OF GOVERNMENT

Government has a definite role to play in stimulating growth in the mineral industry. As a representative of Government, I want to assure you today that we fully realize our responsibility towards this industry. After all, mining forms the backbone of our economy, and its sustained growth is essential for providing a better future for all. As was the case before, the mineral industry is again being looked upon to kickstart the economy, now in its deepest recession in history.

However, it is Government's considered opinion that its involvement in the mineral industry should be of a complementary nature only. Government will therefore be responsible for creating a policy framework within which the industry, financial institutions, organized labour, and utilities such as Eskom and Transnet can plan and operate with confidence. For the past 20 years, Government has gone to great lengths in building an infrastructure for and stimulating growth in the mineral industry.

Iscor was one of the early enterprises founded by Government to illustrate its commitment to the establishment of basic industries vital to a modern industrial economy. The Corporation is currently producing fine steel products at various plants, while marketing a high-quality iron ore world-wide.

Government's contribution, through the Industrial Development Corporation, to the development of South Africa's mineral and metallurgical sectors is often not fully recognized. The IDC is a financial institution offering an extensive range of facilities to assist private entrepreneurs in establishing and expanding economically viable manufacturing industries in Southern Africa. Established in 1940, with share capital held entirely by Government, the

IDC's involvement in the establishment of South Africa's synfuels industry (through the founding of Sasol), the phosphate industry (through Foskor), the aluminium industry (by participation in Alusaf), and the heavy-minerals industry at Richards Bay, is well known.

BENEFICIATION TO BOOST EXPORTS

As a result of Government's concern that the revenue from gold mining could decline, effective strategies were sought to encourage the beneficiation of minerals as a means of boosting export earnings. Since the 1950s circumstances have changed continuously, and Government has had to adopt a dynamic approach in order to facilitate industrial development and exports. This approach resulted in the Reynders Commission of Enquiry into the Export Trade of the RSA, which submitted its report to the Prime Minister's Economic Advisory Council in July 1972. The implementation of certain measures recommended by the Commission had a pronounced beneficial effect on the mineral industry.

Some of these measures, and others adopted at a later stage, included the following.

- (1) The electricity-rebate scheme, first approved by the Cabinet in 1973, was implemented to assist the ferro-alloy industry and similar energy-intensive metallurgical operations. Although the scheme played a major role in enhancing the development of these industries, it is now being phased out, as it may be perceived to stimulate the consumption of electricity, which in itself is contrary to the national goal of energy conservation.
- (2) The former so-called category A to D export incentives were replaced by the General Export Incentive Scheme (GEIS) in April 1990. The latter scheme is structured in such a manner as to promote the export of products beneficiated to a higher degree. At the same time, it also serves to negate unfavourable inflation and exchange-rate fluctuations.
- (3) A concerted effort to provide much-needed infrastructural development was undertaken, notably the building of two new ports at Richards Bay and Saldanha Bay, and the expansion of the rail network to serve these harbours.
- (4) The electricity-generating capacity was expanded, and Sasol II and III were commissioned to ensure sufficient supplies of transport fuel.
- (5) Research and technology development was fostered through institutions such as the CSIR, Mintek, and the Atomic Energy Corporation.

On this last point I would like to refer to the carbon-in-pulp (CIP) process developed by Mintek, which has had a profound effect on gold extraction. I think it is fair to say

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that the CIP process has achieved the four goals set by today's Colloquium, i.e. it

- optimized profitability;
- contained production costs;
- maximized recovery efficiencies; and
- developed new opportunities.

MEASURES TO ENHANCE COMPETITIVENESS

Other stimulatory initiatives instituted by Government, and devised with the specific object of enhancing international competitiveness, included

- (a) a long-term strategy to lower the corporate tax rate in South Africa,
- (b) the exemption of capital and intermediate goods from VAT in September 1991,
- (c) the reduction of import surcharges on capital and intermediate goods to 5 per cent in April 1991,
- (d) Eskom's innovative approach to differential electricity pricing, i.e. the coupling of tariffs to commodity prices, as in the case with Alusaf, and
- (e) the fact that Government endorses the liberalization of world trade and, through GATT, exerts itself actively to the lowering of international import-trade tariffs on South Africa's benefited products.

THE ROAD AHEAD

But, leaving the past behind, we should be looking at the road ahead into the 21st century!

Notwithstanding political disturbances, the violence, and industrial unrest, Government will be maintaining its present course on long-range economic planning. Unemployment, the most critical economic problem in the short-term, is currently being addressed by Government. Other immediate problems arise from an economic climate that appears not to be conducive to investment on the domestic scene. These investment factors have recently been analysed and eloquently presented by SACOB in its study entitled 'A concept for the development of a new industrial policy for South Africa'.

Crucial to long-term investment decisions is the need for a consistent fiscal policy. In order to sustain economic growth, an investment code is required that protects private property and provides reasonable guarantees against arbitrary action by Government.

On the global scene, the world recession and the economic restructuring of Eastern Europe and the Commonwealth of Independent States are placing heavy demands on the West for development capital and investment funds. Southern Africa, despite its economic potential in terms of mineral resources, is unlikely to attract foreign investment on a scale that will stimulate economic growth. Those countries which rely on the export of primary commodities will continue to stagnate; those which rely on a single commodity, like Zambia, will more than ever before find themselves in dire straits. South Africa's endeavours to diversify its export base are starting to pay off, but we will have to rely increasingly on overseas partners to assist us in providing capital and in the international marketing of our benefited products. Therefore, the main thrust for new investment must come through an appropriate fiscal policy in order to encourage and

support new undertakings until they are able to cope adequately with international competition.

The amendment of the Income Tax Act in April 1992 to broaden the scope of incentives aimed at beneficiation will usher in a phase of large-scale capital projects, like the Columbus stainless-steel project and the Alusaf smelter expansion. I am referring to section 37E of the Act, which will promote the beneficiation of minerals and intermediate products obtained from local raw materials or from materials imported into this country for the purpose of adding substantial value. A very important prerequisite, of course, is that such projects must be able to compete internationally. By means of Section 37E, Government has indicated its willingness to assist entrepreneurs in reducing the cost and the risk of start-up expenses, which could otherwise be prohibitive.

Government believes that it is the private sector that is best able to identify and evaluate opportunities for development. The private sector can rightfully look to Government to regulate economic affairs so that capital and working costs are on a scale comparable with those of similar projects in other countries. We are fortunate in this regard that there is some degree of spare capacity in Eskom's grid, in our transport infrastructure, and in many of our metallurgical processing plants. South Africa is therefore poised on the threshold of a new era of industrialization based on the growth in our mineral industry.

This new phase will place demands on skilled manpower—both technical and managerial—and on the development of new technologies. However, we must ask what new technologies are required if South Africa is to remain, and grow as a world player. The response must, I believe, come from the private sector—the mineral industry itself. A research institution like Mintek is equipped, ready, and able to pioneer new technologies. The private sector, however, being closer to the marketplace, should identify the aim of new research projects and the direction that technological development should follow. Finance will be available from Government to fund, on a collaborative basis, those research projects which will make South Africa's mineral industry more competitive internationally.

Of course, being competitive means being efficient. In order to improve our efficiency, we must be innovative, and this is, I believe, where Government and the private sector must co-operate in order to achieve agreed objectives. Government departments most closely concerned with the metallurgical industry, namely, the Departments of Mineral and Energy Affairs and of Trade and Industry, are conscious of the need to continuously regulate conditions so that industry can operate more efficiently. The various White Papers published in the mid-1980s reflect the willingness of Government to consult with the private sector and to arrive at solutions that will make the industry more efficient. This, of course, was one of the main aims of our deregulation policy.

ROLE OF THE PRIVATE SECTOR

Having said that, I wish to reiterate: innovative ideas should come from the private sector. Research organizations in this country can compete with the best in the world, and I believe that Government should continue to support them financially. For instance, the work done by

Mintek in developing the CIP process, to which I have already referred, has not only been of considerable benefit to the private sector, but it has led to an increase in recovery rates, which has postponed the day that some gold mines will have to close, thus saving many jobs, besides, of course, contributing greatly to our economy.

The time has come, I believe, for the mineral industry to plan ahead, and to improve productivity through better management, improved technology, and better use of labour, and also to adapt to the changing needs of world

markets. I am convinced that today's Colloquium will go a long way towards achieving just that.

In closing, I wish to stress that innovation and technology transfer will be absolutely essential if industry is to prosper and grow. While Mintek has, during the past decade or two, blossomed into an internationally respected leader in the wider field of metallurgical and chemical technology, the time has come for local metallurgical entrepreneurs to pick up the challenge to apply these technologies in Africa and elsewhere in the world.

Vibratory mills*

The Technical Services Division of Pretoria Portland Cement has installed two Labtechnics LM2 vibratory mills, supplied by Chromatech Instruments, to crush exploratory core samples of up to 2 kilograms prior to chemical analysis.

According to Barrie Butcher, Group Chief Chemist, the LM2 enables many more samples to be crushed each day, resulting in considerably lower operating costs. 'The LM2 is able to take a much larger sample than the equipment previously used, thereby reducing the number of crushing operations, while the specially designed bowl produces a thoroughly homogeneous mix throughout the pulverizing process, obviating the need for a separate mixing stage', he said.

Differing from the integral vibratory-duty motor drive traditionally associated with this type of mill, the LM2 uses a 2,2-kilowatt electric motor to power, via a V-belt, a universal shaft connected direct to the vibrating head.

A wide range of bowl types and sizes can be used with the LM2 but, for samples between 800 grams and 2 kilograms, Labtech offers a unique 'flying saucer' shaped puck and bowl, which have matching curvatures to create a

uniform wear situation, thereby ensuring optimum performance over the life span of the bowl. A special hole located 'off-centre' through the puck gives homogeneous mixing of the sample while it is being crushed. The LM2 can also be used with existing standard makes of bowls.

The pulverizing bowl is retained on the vibrating head by an automatic universal pneumatic clamp actuated when the mill is started and released only when the pulverizing cycle is complete.

Both the C800 (800-gram) and the C2000 (2-kilogram) grinding bowls are manufactured by Chromatech under licence from Labtechnics, which not only saves valuable foreign exchange but also, with lower freight costs and duty, enables the price of the bowls to be reduced by 20 per cent compared with that of imported bowls.

The LM2 is enclosed in a functional, easy-to-clean fibre-glass cabinet, which is sound-proofed and incorporates a controller with easily accessible start and stop buttons, together with an electronic timer calibrated in minutes and seconds.

Various safety devices are fitted into the pneumatic and electrical circuits that preclude the mill from operating when the lid of the cabinet is open.

* Issued by Rex Roberts Associates, P.O. Box 73596, Fairland, 2030 Transvaal.

SAIMM BRANCH DIARY

EASTERN TRANSCVAAL BRANCH

Contact: B.G. Bell
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May 1993 - Technical Visit to Landau Replacement Projects.

Details to be announced

12 July 1993 - Annual General Meeting

Details to be announced

JOHANNESBURG BRANCH

Contact: G.S. Lee
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27 April 1993 - 1-day Technical Visit to Premier Diamond Mine

Venue: De Beers' Premier Diamond Mine, Cullinan

Time: 08:00
Cost: R65,00
Closing date: 21 April 1993

13 May 1993 - Presentation: Lesotho Highlands Water Project by A.G. Davies

Venue: Johannesburg Country Club
Time: 17:00 for 17:30

24 June 1993 - 1-day Technical Visit to Haggie Rand Limited—Jupiter Plant

Time: 09:30
Cost: R30,00 for Members, R40,00 for Guests

Closing date: 17 June 1993
Directions will be sent to successful applicants

Further information is available from: The Secretaries, SAIMM, P.O. Box 61127, Marshalltown, 2107.
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