



Speech by State President, F.W. de Klerk

It is a great honour to officiate at the celebration of the centenary of the South African Institute of Mining and Metallurgy. Tonight's festivities bring back happy memories of my association with South Africa's mining industry during my tenure of office as Minister of Mineral and Energy Affairs. They also remind me of the illustrious personalities who have preceded me on this podium.

The Pioneers

They include Sir Percy Fitzpatrick, who spoke in 1909 on the eve of the Union, General Smuts, and, on many occasions during the 1920s and 1930, Jan H. Hofmeyr.

The basic issues addressed by them continue to enjoy the Institute's attention today, namely the optimal and safe exploitation of our country's mineral resources and cost-effective extraction of minerals from their ores. Translated into the Institute's key objective it reads: *To initiate and give effect to the means whereby the requirements for technology and scientific knowledge of the minerals and metals section of the South African economy is satisfied.*

The far-sightedness of these pioneers is unquestionable. The mining industry has become the foundation of the South African economy. It was responsible for the establishment of much of South Africa's sophisticated infrastructure, secondary industries, and financial and academic institutions. Today, the industry remains a cornerstone of the country's economy, having contributed 10 to 15 per cent of the gross domestic product during the past decade. This figure may be as high as 25 per cent if the mineral-processing industries are included.

The mining industry has long been a major employer of South Africans and of workers from neighbouring countries. It has consistently supplied more than half of the country's foreign-exchange earnings, and has also become a major force internationally. Some of the most capable mining companies in the world reside in this country, and the industry is one of the most advanced in respect of mining and mineral technology and management. This has resulted in our becoming one of the world's foremost mineral producers.

It is often stated that South Africa's dominant position as a mineral producer is attributable primarily to our mineral riches. However, a mineral resource is only of economic value once it has been found, delineated, mined, processed, and delivered to the markets. South Africa must also be a reliable supplier of high-quality and competitively priced products.

Thus, the human factor plays just as important a role in the establishment of a mining industry as the resource factor. In this regard, I must praise this Institute and its members, past and present, for their knowledge, skills, and enterprise.

The Beginning

How and when did it all start? I think it all started when the children of one Daniel Jacobs picked up a 21,75 carat diamond on the banks of the Orange River near Hopetown early in 1867. This led to the discovery in 1870 of the kimberlite pipes at Jagersfontein, and later Kimberley, and to the onset of the great diamond rush. The mining culture that developed on the diamond fields fortuitously created the excitement and wealth that enabled the Witwatersrand to blossom so quickly after the discovery of gold in 1886. The diamond-mining magnates became gold magnates, and established the base of South Africa's mining houses of today.

However, within five years, excitement gave way to gloom, when nearly all the land available for shallow-outcrop mining on the Rand had been exploited. It also became clear that falling grades and unoxidized reef could not be sustained by a process that was recovering less than 60 per cent of the contained gold. This was just the challenge needed by the small team of trained specialist scientists who joined the rush.

Within a few years, the viability of deep-level mining had been proved, and the cyanide process, developed by J.S. MacArthur in 1890 to recover gold from slimes, had been perfected: the mining engineer, assisted by the chemist and the metallurgist, had come to the rescue.

Before long, Randlords who wished to improve their cash flow realized that they had to employ the necessary technical expertise. By 1894 there were, on the Rand, just more than a hundred professionals, most of them from Britain, Germany, and America, intensively engaged in further experiments to optimize the cyanide process, looking for ways in which to optimize its ability to recover gold. And because the financiers understood the benefits of sharing knowledge and experience, they did not object to the formation by these men of the Chemical and Metallurgical Society of South Africa in March of that year.

Achievements

Professionals behave in very characteristic ways—unlike politicians! They test their processes carefully, record results meticulously, and usually hold strong opinions. These opinions are debated in orderly fashion but, like their reactions in the laboratory, debate sometimes goes exothermic—and often results in a useful product. Thus, it was with this new Society: formality and tone became entrenched from the beginning, but was often spiked with intensive argument. And now, after one hundred years, your track record, painstakingly minuted in your journal, is there for everyone to see. The Institute's achievements over the past hundred years include

- ▶ MacArthur's cyanide process and the deep-level mining technique;
- ▶ advances in drilling, blasting, ventilation, rock mechanics, and cementation;
- ▶ the imaginative application in the 1930s of geophysical-exploration techniques by Krahnemann and others, which led to the discoveries of new goldfields in the Transvaal and Orange Free State;
- ▶ further advances in refrigeration and shaft-sinking techniques, and research in rock mechanics, which allowed the mining of the gold reefs to move to even deeper levels; and
- ▶ improved methods of ore evaluation, management, and organization, and the application of computers in mining.

Technological advances were not limited to the gold-mining industry. Research on South African coals, and on mining layout and design, as well as the introduction of mechanized mining in coal mines, enabled South Africa to become a leading and competitive exporter of coal. It also made possible the efficient and low-cost production of electricity.

Similarly, metallurgical advances from the 1920s to the 1950s contributed to the unlocking of the treasures of the Bushveld Complex, and many other ferrous and base-metal deposits.

Innovation was, however, taking place not only in the field of production. Advances in respect of safety and health ensured that the problems of working at extreme depths, such as high temperature and humidity, could be overcome. Improved techniques in rehabilitation ensured that the mining industry could continue operating in the present environment-conscious world.

Today, research is continuing apace in areas such as trackless mechanized-mining methods, water jetting, impact rippers, water-powered hydraulic rock drills, backfilling, and diamond-wire sawing. These techniques should ensure that South Africa's mining industry regains and retains its competitive edge on world markets.

There has also been great progress in the beneficiation of the country's minerals. As a result, South Africa is now a major producer of ferrochrome, ferrosilicon, silicon metal, ferromanganese, manganese metal, vanadium, steel, and titanium slag. The completion of the Columbus project and the Alusaf expansion will enhance our world role with respect to both stainless steel and aluminium.

Role of the State

In these endeavours, the former Chamber of Mines Research Organization (COMRO) and individual mining-company research departments and academic institutions played a leading role. However, members of your Institute who excelled in developments in the mining industry were not drawn only from the private sector. Many also came from State and semi-State organizations. This brings me to the role of the State in helping to develop a strong mineral industry.

Government has endeavoured to minimize the risks to the mineral industry, which operates on long lead times, and on ventures that are highly capital-intensive. This was done by means of establishing a sound information, technological, and educational base. In this respect, the activities of the Council for Geoscience (the erstwhile Geological Survey) in and outside South Africa are well known.

The research efforts of Mintek (and its predecessors in name), for example, gave a renewed spark to the gold-mining industry with the application of activated carbon to the recovery of gold from cyanide solutions. Advances, especially in flotation techniques and pyrometallurgy, kept us in the forefront of technology, which will probably be of overriding importance in future.

The CSIR (including the former Fuel Research Institute) did much to make South Africa a world leader in, *inter alia*, the manufacture of fuels and petrochemicals from coal, which culminated in the establishment of Sasol.

Through their regulatory role, successive Government Mining Engineers prompted safety and health in the mining industry, and ameliorated the impact of mining on the environment and society.

In addition, government has developed infrastructure that is dedicated to the mining industry, such as the Richards Bay and Sishen-Saldanha lines. Similarly, Eskom has greatly enhanced the competitiveness of the energy-intensive mining and mineral-processing industries.

Challenges To Be Faced

Mr President, having reviewed your illustrious role over the past century, we must now look to a future during which we will be faced with the challenge of growing demand and diminishing resources.

Our bountiful mineral resources will not, by themselves, guarantee success. Ultimately, the success of our mineral industry will be measured against only one criterion, and that is the degree to which we translate our mineral potential into quality of life for all our people.

We must have a strategy if we wish to achieve this goal.

From a government perspective, the very first requirement is the creation of a legal and fiscal climate conducive to technological innovation and entrepreneurial initiatives in an orderly free-market economy. Technological innovation, Mr President, is the only mechanism that can ensure a larger cake for everyone. The nationalization of our mineral wealth would be a certain recipe for stagnation and eventual poverty. But, as we all know, technological innovation requires brain power and skill, attributes that can be cultivated and that can flourish only in a climate that provides ample rewards. For this, we obviously require investment, which in turn will materialize only if we can create stability and confidence, and ensure absolute security of tenure.

Government should not merely provide a favourable legal and fiscal framework. It should, as a second key element of our future strategy, continue its pro-active support of surveys, investigations, and research. These are essential to stimulate the optimal development of our country's mineral resources, but cannot be conducted within the normal business-risk limits of private industry. Here, I particularly have in mind aspects such as the basic geological mapping of the country, mineralogical and metallurgical research, research into mining safety and health, and the provision of mineral-economic information. These Government-supported services have in the past been one of the pillars on which our mineral industry has been built, and have also served as a breeding ground for technological expertise.

The third key strategic element is the promotion of secondary and tertiary mineral-based industries in order to create job opportunities and add maximum value to our mineral raw materials. The acid test for the maturity and ultimate success of our minerals industry is whether we will become world leaders in mineral processing. The scope for expansion is vast.

Nevertheless, we will for many years have a need for competitive unprocessed or semi-processed mineral exports. For this, we will require a strong and vigorous minerals industry, which will probably also play an important role in the rest Africa.

We will also have to accommodate both developmental and environmental concerns. We will need to harness all our natural resources to revitalize the economy.

The Future

Finally, ladies and gentlemen, we are on the threshold of monumental changes in South Africa. Conditions have been tough for the mineral industry during the past few years. What does the future hold for your industry?

I would like to refer to a speech given by Jan H. Hofmeyr at the Annual Dinner of your Institute in October, 1932. He said, and I quote: '... in this continent of Africa, history is always repeating itself. There is never anything new under the sun. I have no doubt whatever that once again the mining engineer, the chemist, and the metallurgist are going to come to the rescue.'

Mr President, ladies and gentlemen, I concur with these sentiments. Given the flexibility to act innovatively, your managers and scientists will ensure that all is well with your industry and ultimately South Africa. I believe mining people, like farmers, are inherent optimists; otherwise, they would not be in the business. An optimist myself, I believe your optimism will not be misplaced with regard to the new South Africa.

I now invite you to join me in drinking a toast to The South African Institute of Mining and Metallurgy. May its second century be an even more successful one.

B.C. Alberts:

I consider it a great privilege and feel honoured that I have been called on to propose a vote of thanks to you, Mr State President. You have indeed bestowed a great honour on the Institute by the presence of yourself and Mrs De Klerk at this auspicious occasion of the Institute's Centenary Banquet. By officiating here this evening, you are following in the footsteps of many high-ranking politicians of the past, some of whom you mentioned in your address. We are really honoured that you found the time, during your strenuous election campaign and deliberation process, to participate in the Institute's festivities and its continuation of this tradition.

Gratitude of the Institute

We at the Institute have much to thank you for, Sir.

We thank you for your presence and the encouraging words you spoke to us. The mining industry values the contribution of its people highly, and your recognition and praise of the human factor are really appreciated. We also thank you, Sir, for the toast you proposed to The South African Institute of Mining and Metallurgy and the wish for success that you extended to the Institute.

The contribution you made to the mining industry during three years of office as Minister of Mineral and Energy Affairs is highly valued and appreciated. It was during your term of office that the Mineral Technology Act (1981), the Nuclear Energy Act (1982), and the Coal Act (1983) were either initiated or promulgated. Various amendments were also made to relevant acts and regulations in your time.

Undoubtedly, your energy and efforts in respect of the mining industry did not end with the termination of your office as Minister. Your Government's continuous endeavours to minimize the risks to the mineral industry are highly appreciated. The activities of the Council of Geoscience, Mintek, the CSIR, and the Department of Mineral and Energy Affairs, among others, are cited as examples of these efforts.

New Dispensation

However, significant as these contributions were and still are, they are being overshadowed by you and your Government's courageous and gigantic step towards a new dispensation in this country. In this regard, I quote Tim Cohen from *Business Day* of Friday, 18th March, 1994, when he wished you a happy birthday. Referring to you Mr President, he wrote:

'The gamble he took on February 2, 1990, has essentially paid off. With a few bumps, SA has managed the transition, the revolution has been staged off, the country is more or less intact.'

And in conclusion he added: 'Whatever his future, De Klerk gave SA a chance when it needed it most. On a more immediate level, he has overcome his private fears. He found the courage to jump over his own shadow. He deserves to be honoured for that'.

Coming, not from me, but from a highly critical source, this is quite a mouthful of praise.

These initiatives culminated in the most extensive and demanding deliberations this country has ever seen and will probably ever see. The least that all of us in this country can do is to wish you all the strength, health, and wisdom to bring this process to a conclusion that will meet as many expectation as are humanly possible in this complex situation.

Mining Policy

The mining industry in particular is at the heart of the political debate, and the Institute greatly appreciates the pressure you exert to protect the industry from interference and increasing risks. We have noted the Government's sense of urgency to create and maintain a legal and fiscal climate that is conducive to innovation in a free-market economy; to continue to pro-actively support the industry with research; and, finally, to promote secondary and tertiary mineral-based industries and so create work opportunities and add value to the country's raw materials. The Government's initiatives with regard to the Columbus, Namaqua Sands, Richards Bay, and Saldanha developments are but a few examples showing that this strategy is paying off.

Your reference, Mr President, to these three important strategies, which are necessary for the most advantageous exploitation of our rich mineral resources, is indicative of the very important relationship between the State and the mining industry.

In this respect, there is at this stage much concern in the industry over the remarks made by the ANC about the way that they see the mining industry should be regulated in the future. Fortunately, because of the example set at Codesa I, and then the World Trade Centre, the industry and the ANC have now entered into discussion on this matter, and I am confident that a practical solution will be forthcoming. If pragmatism prevails, there must be a realization by all the parties concerned of the specific roles they should play in the attainment of a common objective, namely the exploitation of the RSA's mineral wealth to the best benefit of all the parties concerned.

In this regard, I am specifically referring to the Government and the industry itself. This calls for a realistic balance between the forces driving entrepreneurial action and the potential negative impact of over-regulation. The positive and practical support given by the Governments of the Pacific Rim countries in the development of their respective countries should be seen as an example. Both technical and financial knowledge of the mining industry is therefore imperative. The necessity of overseas inputs to ensure credibility is also important to ensure that the ANC will consider inputs from the voice of experience. I am sure that, if we resolve the conflict productively, we in the mining industry will be in a position to continue making our important contribution to the GDP in such a way that South Africa will still benefit for many years to come from the exploitation of our mineral heritage.

Our Mineral Heritage

With reference to our rich heritage, the following legend is applicable.

The legend concerns someone, who, when the earth was created, went about scattering mineral riches over the various countries. Arriving in South Africa, he found to his embarrassment that he had made a wrong allocation. To compensate, he threw what was left in his little bag onto South Africa, thereby creating the largest reserves of manganese, chrome, platinum, gold, and titanium in the world, as well as substantial reserves of coal and iron ore. Let us therefore not disappoint this legendary benefactor through the indiscriminate utilization of our reserves.

To illustrate the importance of this heritage for South Africa, I ask you to close your eyes for a minute and to form a mental image of the map of South Africa. Imagine for one moment that it is possible to remove from this map Kimberley and the diamond mines in the Kimberley area, the mines of Namaqualand in the Springbok area, Sishen iron ore mine, the platinum mines between Pretoria and Rustenburg/Thabazimbi, Palabora Mining Company, and the gold mines from Klerksdorp in the west to Kinross in the east, the Free State gold mines, the eastern Transvaal coal mines, and the northern Natal coal mines. If these mines, as well as the infrastructures that were established because of these mines, are removed, a rather empty country will be left, with perhaps Pietersburg, Nelspruit, Pretoria, Potchefstroom, Bloemfontein, Durban, Port Elizabeth, and Cape Town. South Africa would look very much like the Namibia we know today.

Contribution to the Mining Industry

It can therefore be concluded from this simple exercise that the mining industry in South Africa has played a decisive role, and has been the key determinant in establishing most of what we see in South Africa today.

This is an industry with a long and illustrious history. It has made an invaluable contribution to many aspects of life in South Africa in general, and to its economy in particular.

Over the past hundred years, through direct contributions, as well as the multiplier effect, the mining industry has been the major force driving the development of South Africa.

The economic importance of the industry is apparent from its impressive performance on the Johannesburg Stock Exchange (JSE), where mineral producers accounted for approximately R139 billion, or some 21 per cent of the total market capitalization in 1993.

Mining's slice of South Africa's formal wealth-creation infrastructure rises to approximately 40 per cent if the capitalization of mine producers and mining finance companies are combined.

At commercial-rand value, the JSE total market capitalization amounted to US\$ 182,4 billion by the end of November 1993, making it the eleventh-largest stock exchange in the world.

The value of shares traded on the JSE more than doubled in 1993, to R44 billion. In comparison, the values of the mining shares increased by 265 per cent to R26,1 billion, representing 59,3 per cent of the total value of traded shares.

During 1992, the contribution of all minerals accounted to 43,7 per cent of the total exports. Gold's contribution to the total exports in 1992 amounted to 29,2 per cent. In 1993, mining (including gold and beneficiated products) accounted for more than 60 per cent of the foreign-exchange earnings. The strong minerals performance favoured the country's balance-of-payments and foreign-reserves positions, in the process benefitting all South Africa's economic sectors.

If one included the multiplier effects (backward and forward linkages), the direct and indirect contribution of mining to the GDP is approximately 19 per cent.

As far as labour is concerned, the mining industry employs approximately 561 000 people (1993 figures). The improvement in labour productivity over the past decade has been 5,2 per cent per annum (sales tonnes per employee per year) for coal mines, and 1,0 per cent per annum (tonnes mined per man per month) for gold mines.

Centenary banquet

With regard to education and training, the mining industry has a long track record of involvement in the development of education and training. The industry has invested heavily in various areas of human-resource education and training. Great efforts and financial investment have also gone into bridging the gap between the current school system and the world of work.

Mining Technology

As for technology, the narrow, tabular gold- and platinum-bearing reefs create unique mining problems, which have challenged the ingenuity of mining men since their discovery. Today, South Africa is recognized as the world leader in shaft-sinking and hoisting technology, cooling of deep mines, rock-engineering design, and general mining technology.

Examined over an extensive period, the mining industry's fatality and injury rates show a consistent downward trend.

During the past four years the industry has, in collaboration with the Department of Mineral and Energy Affairs embarked on a pro-active new-generation approach to integrated environmental management.

Optimism

In your conclusion, Sir, you urged us to be optimistic about the future in the new South Africa. You were correct: we are optimists; otherwise, we would not have been miners, and we want to assure you that we are optimistic, and we are approaching the new South Africa which the belief that a bright new future awaits all its people in this wonderful country of ours.

Vote of Thanks

Mr State President, on behalf of The South African Institute of Mining and Metallurgy, I am honoured to propose a vote of thanks to you for the contribution you have made to the South African mining industry, as well as your great contribution to the development of South Africa as a whole. ♦



Mr F.W. de Klerk



Ben Alberts proposing the vote of thanks