

Minerals and Energy

Aim

To formulate and implement an overall mineral and energy policy in order to ensure the optimum utilisation of mineral and energy resources.

Policy developments

A long-term policy objective of the Department of Minerals and Energy is to vest all mineral rights with Government, giving greater attention to the small-scale mining sector through new development and promotion initiatives.

The Department is making progress in restructuring the electricity distribution industry. The process aims to establish regional electricity distributors (Reds) to ensure quality distribution, equitable pricing strategies and financial viability of the industry.

Work is underway to explore alternative and cheaper sources of power. Eskom has commissioned detailed research to determine the technical and economic feasibility of the nuclear Pebble Bed Modular Reactor (PBMR) as a means of power generation. It is envisaged that the results of the research will also inform Government on the safety and nuclear proliferation implications of the PBMR.

The Department is also reviewing various aspects of the liquid fuels industry including general issues of deregulation of the industry, synthetic fuels protection, the pricing mechanism of liquid fuels and the restructuring of the Central Energy Fund (CEF).

In recognising the importance of the petroleum, gas and petrochemical sectors in South Africa, the Department is developing a coordinated industrial strategy for these sectors. A policy framework for the operations and activities of these sectors must be developed. Its fundamental objectives are to:

- Ensure provision of low cost energy in the form of liquid fuels and gas
- Manage the technology and production shift in the economy from coal-based liquid fuels and petrochemicals to crude oil and gas-based liquid fuels and petrochemicals
- Increase natural gas usage, improve industrial efficiency, energy security and mitigate hydro-carbon environmental externalities.

In the light of relatively higher prices of crude oil and there being no need to subsidise the synthetic fuels industry at present, the equalisation fund levy on petrol and diesel of 8 c/l has been removed. However, the proposed introduction of 93 octane unleaded petrol will attract a levy of 3 c/l to equalise with the price of 93 octane leaded petrol. Furthermore, a thorough review of the policy on the Equalisation Fund and the protection to the synthetic fuels industry will be finalised during the first half of 2000.

Expenditure estimates

Table 30.1 Expenditure by programme

R million	Expenditure outcome			Revised estimate	Medium-term expenditure estimate		
	1996/97	1997/98	1998/99 ¹	1999/00	2000/01	2001/02	2002/03
Administration	29,7	32,9	37,2	40,2	44,8	48,6	50,8
Promotion of mine safety and health	35,2	44,7	56,5	62,0	67,3	71,7	76,0
Mineral development	29,0	38,1	50,5	55,5	61,6	76,4	79,5
Energy management	86,3	35,3	44,9	27,3	28,8	30,0	33,0
Auxiliary and associated services	554,1	674,2	482,8	432,5	375,2	358,1	589,8
Total	734,3	825,2	672,1	617,4	577,7	584,7	829,1
Change to 1999 Budget estimate	–	–	–	1,9	5,5	(7,1)	–

¹ Includes authorised losses of R0,2 million.

- *Administration* comprises financial management, personnel and provisioning administration, legal and other office support services and the formulation of policy by the management of the Department
- *Promotion of mine safety and health* aims to ensure the safe mining of minerals under healthy working conditions
- *Mineral development* aims to promote the orderly and continuous mining and utilisation of mineral resources
- *Energy management* aims to develop optimally energy resources and their utilisation
- *Associated services* renders support services to the Department.

Table 30.2 Economic classification of expenditure

R million	Expenditure outcome			Revised estimate	Medium-term expenditure estimate		
	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03
Current expenditure							
Personnel	60,5	76,8	92,8	99,6	109,0	114,9	121,1
Transfer payments	512,3	471,2	416,8	394,0	362,4	350,0	356,7
Other	109,6	66,7	81,8	74,5	78,8	95,5	101,4
Capital expenditure							
Transfer payments	47,1	204,7	75,0	43,6	23,3	20,0	245,1
Acquisition of capital assets	4,8	5,8	5,7	5,7	4,2	4,3	4,8
Total	734,3	825,2	672,1	617,4	577,7	584,7	829,1

Following a declining trend from R75,0 million in 1998/99 to a projected actual expenditure level of R43,6 million in 1999/00 and budgeted expenditure of R20,0 million in 2001/02, capital transfers increase significantly in 2002/03 due to the provision for the loan repayment of the South African Nuclear Energy Corporation (Sanec, the former Atomic Energy Corporation).

Personnel expenditure shows a steady increase over the MTEF from R99,6 million in 1999/00 to R121,1 million in 2002/03. This can be attributed to the provisions for meeting the requirements of the Public Finance Management Act of 1999 and improving the internal audit system. Current transfers decline due to the relatively lower provision for operating allocations to Sanec, which declines from R183,5 million in 1999/00 to R135 million in 2002/03.

Programme 1: Administration

Table 30.3 Programme Expenditure

R million	Budget estimate	Adjusted appropriation 1999/00	Revised estimate	Medium-term expenditure estimate		
				2000/01	2001/02	2002/03
1999 Budget	36,2	40,2	40,2	39,2	42,7	–
2000 Budget	–	–	–	44,8	48,6	50,8
Change to 1999 Budget estimate	–	4,0	4,0	5,6	5,9	–

The programme comprises financial management, personnel and provisioning administration, legal and other support services and the formulation of policy by management of the Department. The slight increases on the 1999 figures are largely due to improvement of the internal audit systems as well as provision to meet the requirements of the Public Finance Management Act of 1999.

Programme 2: Promotion of mine safety and health

Table 30.4 Programme Expenditure

R million	Budget estimate	Adjusted appropriation 1999/00	Revised estimate	Medium-term expenditure estimate		
				2000/01	2001/02	2002/03
1999 Budget	60,0	62,0	62,0	65,9	70,3	–
2000 Budget	–	–	–	67,3	71,7	76,0
Change to 1999 Budget estimate	–	2,0	2,0	1,4	1,4	–

The aim of the programme is to ensure the safe mining of minerals under healthy working conditions. The key objectives are an improvement of at least 25 per cent in the reportable accident rate and a reduction of at least 30 per cent in the number of fatalities as a result of mining accidents, over a three-year period ending in 2000/01. The programme is responsible for overall guidance, planning and policy for the establishment and application of mine safety; mine equipment safety; mine surveying and mine health standards.

Various mining inspections are undertaken by the Department including underground inspections, surface inspections, occupational health inspections, audits, statutory inspections of equipment and mine survey inspections.

Outputs and service delivery trends

Table 30.5 Promotion of mine health and safety: Key activities and outputs

Key activities	Outputs
Mine inspections	Undertaking of mine inspections
Safety	Reduction in rates of fatalities and injuries
Regulations	Drafting of regulations for the industry
Examinations	Processing of certificates of competence

A computerised system has been developed to assist with the monitoring and control of inspector performances. The programme oversaw a steady decline in accidents in the South African mining industry, including fatality and injury rates. The number of fatalities declined from 463 in 1996 to 312 in 1999 and reportable injuries fell from 7 426 in 1996 to 5 483 in 1999.

An estimated 3 000 applications for examinations for mine managers, mine overseers, mine engineers, mine surveyors and winding engine drivers will be processed during 2000/01. 2 453 certificates of competency were issued in 1999.

This programme is also responsible for the monitoring and enforcing of the Mine Health and Safety Act of 1996 and policy inputs for the establishment of occupational medicine at mining operations. Annual medical reports received in 1999 show a definite improvement occupational health compliance in terms of Section 16 of the Mine Health and Safety Act. 16 677 mine inspections were carried out in 1999.

To monitor occupational hygiene, the exposure of individual employees in the mining industry to chemical, physical and biological agents is monitored in approximately 36 000 mining concerns, and entered into a database. The drafting of regulations and guidelines, applicable training and auditing of regional occupational hygiene inspectors and participation on committees and working groups assist in this activity to ensure the occupational hygiene of the mining workforce. 63 topics were identified for potential regulations.

Policy developments

During 1999/00, the Department initiated a process to draft regulations under the Mine Health and Safety Act, 1996. Six generic topics for potential regulations have been identified on mining, mining equipment, mine surveying, occupational medicine and occupational hygiene.

Programme 3: Mineral development

Table 30.6 Programme Expenditure

R million	Budget estimate	Adjusted appropriation 1999/00	Revised estimate	Medium-term expenditure estimate		
				2000/01	2001/02	2002/03
1999 Budget	55,9	55,5	55,5	62,1	77,0	–
2000 Budget	–	–	–	61,6	76,4	79,5
Change to 1999 Budget estimate	–	(0,4)	(0,4)	(0,5)	(0,6)	–

Mineral development provides services for the proper governance of South Africa's minerals industry to ensure economic growth and development according to the Minerals Act of 1991 and the 1998 White Paper on Mineral and Mining Policy. The programme sub-divides into minerals regulation, mine economics and mineral economics.

Mineral regulation involves developing mine environment standards; managing the allocation of prospecting and mining rights; and approval of environmental management programmes. It also ensures that uniform application of policy and legislation and that prospecting and mining contracts and the conditions of environmental management programmes are strictly complied with by mine owners. It oversees the registration of mine deeds and rehabilitates derelict or ownerless mines which may cause a safety or health risk to neighbouring communities or have the potential to cause environmental pollution or degradation.

Allocations for the programme are projected to increase from R55,5 million in 1999/00 to R79,5 million in 2002/03, resulting in an average annual growth rate of 1 per cent. 33 of the 40 derelict and ownerless mining complexes in the Northern Province have already been covered and vegetated. In the Northern Cape 28 of the 51 derelict and ownerless asbestos mining complexes must still be rehabilitated. Approximately 430 000 individuals in nearby communities and townships would benefit from this rehabilitation action as they would not be further exposed to the

inhalation of asbestos fibres which can lead to lung diseases. Labourers and contractors from local community structures are employed to assist with the building of erosion control measures, vegetation of covered dumps and fencing. The mine economics subprogramme involves assistance to marginal mines, for small-scale mining and management of downscaling of mines. It is also responsible for valuation of mineral rights.

Mine economics also provides an information service at the macroeconomic level and promotes adding value to primary minerals. Over R243 million was recovered in revenue in 1999/00 from royalties and prospecting rights.

Outputs and service delivery trends

Table 30.7 Mineral development: Key activities and outputs

Key activities	Outputs
Regulation	<ul style="list-style-type: none"> Development of mine environment standards Allocation of prospecting and mining rights and the approval of environmental management programmes Uniform application of policy and legislation and compliance with prospecting and mining contracts by mine owners Registration of mine deeds Policy, legislation and guidelines to neutralise or minimise negative impacts of mining on the environment Rendering of information services
Issuing of mining rights	<ul style="list-style-type: none"> Reduced turn-around time for processing of application for prospecting and mining rights Ensure compliance with legal standards and requirements (Minerals Act of 1991) Complete and accurate submissions in respect of prospecting and mining rights and other matters Increased access to mineral rights Standards regarding rehabilitation of land surface and environment
Mineral promotion and information	<ul style="list-style-type: none"> Promotion of South Africa's mineral resource Managed exploitation of mineral resources Publication of mineral and mine-economic information Evaluate prospecting and mining application Determine royalty payments to the state Mineral lease audits Effective mineral resource development Estate duty and transfer duty payments to the state and expropriation costs Determination of mining tax implications to the state Avoiding premature closure of marginal mines Protection of mining assets Prevention of job losses and Social Plan implementation Development of small-scale mining Increased revenue through the payment of royalties and prospecting fees to the state Analyses of local and international mining industries and key developmental trends Directories providing technical and commercial information on producing mines and their products

Assistance to marginal mines, small-scale mines and management of downscaling

Assistance to marginal mines is limited to assisting mining companies faced with the costs of pumping extraneous water. The intention is to avoid premature closure and the resultant loss of employment opportunities as well as negative environmental impacts.

The Department has implemented a National Small-Scale Mining Development Framework to integrate the relevant government and institutional structures in order to facilitate the sustainable development of small-scale mining. A fund, administered by the Industrial Development Corporation (IDC), has been established to facilitate the coordinated institutional support component of the framework. Currently three pilot projects are being undertaken which are expected to result in the creation of approximately 700 jobs.

The White Paper provides for strategies to preserve mining employment for as long as economically viable and socially desirable in order to address the loss of jobs in the mining industry, particularly gold mining. During 1999, the Gold Crisis Committee (GCC) coordinated several agreements between organised labour and business which incorporated measures related to job savings.

Since inception some 48 967 jobs in the gold mining industry have been notified to the GCC as being at risk. There were 24 notifications received from mines in the same period. Of those jobs, it is estimated that 35 107 were saved through alternative measures including extended leave arrangements, transfers and the replacement of contractors. Through the GCC process, the number of jobs lost was limited to 13 860. The process followed by the GCC allowed for the mobilisation of the Department of Labour's Social Plan services with regard to those cases where job losses could not be avoided.

South Africa's mineral resources are also promoted through the compilation and issuing of information documents. About 2 500 copies of *Invest in an intense and diversified mineral industry – South Africa*, were issued during 1999, mainly to foreign recipients.

Policy developments

Legislation on mineral development is being redrafted to replace the Minerals Act of 1991 and the Diamonds Act of 1986. Revised legislation will provide for the recognition of Government as the custodian of South Africa's mineral resources and for development of mineral wealth to its full potential.

The function of promoting the exploration and exploitation of South Africa's oil and gas resources has been separated from Soekor (a subsidiary of the CEF group) and vested in a newly established body known as Petroleum Agency SA. This has removed the conflict of interest due to Soekor's commercial involvement in the petroleum industry.

Regulations for the monitoring and performance assessment of environmental management programmes of mines were implemented in June 1999, facilitating an integrated environmental management system for the mining industry.

Programme 4: Energy management**Table 30.8 Programme Expenditure**

R million	Budget estimate	Adjusted appropriation 1999/00	Revised estimate	Medium-term expenditure estimate		
				2000/01	2001/02	2002/03
1999 Budget	28,8	27,3	27,3	30,9	32,2	–
2000 Budget	–	–	–	28,8	30,0	33,0
Change to 1999 Budget estimate	–	(1,5)	(1,5)	(2,1)	(2,2)	–

The *Energy management* programme aims to develop South Africa's energy resources and promote their optimum use. This includes the responsibility for policy developments on electricity, liquid fuels and nuclear energy.

The medium-term expenditure estimates are revised down to R28,8 million in 2000/01, R30,0 million in 2001/02 and R33,0 million in 2002/03, reflecting minor reallocations between programmes.

The electrification function develops and implements policies with regard to the supply of conventional forms of electricity. Provision is made for sustainable and affordable electricity for South Africa in order to enhance the quality of life, stimulate economic growth and minimise the effect of environmental pollution. It is also responsible for implementing policies with regard to the demand for energy in households and the promotion and effective utilisation of renewable energy.

Increased awareness and application of liquid fuel efficiency measures are promoted. Fuel and vehicle standards are set, in order to preserve air quality, while due consideration is given to technical and economic factors. An awareness of alternative modes of transport is promoted.

Outputs and service delivery trends

Table 30.9 Energy management: Key activities and outputs

Key activities	Outputs
Electrification	Increase the number of households with electricity
Awareness	Increase awareness about energy efficiency
Restructuring	Restructuring of the distribution and liquid fuels industries

The current electrification programme supports the RDP target of 2,5 million new household connections in the period 1994 to 1999. Expectations are that this target was exceeded when the household electrification level reached about 66 per cent in December 1999 compared to only 36 per cent in 1994.

Table 30.10 Connections made and capital spent by Eskom during the past nine years¹

Year	Households		Farmworkers	Schools		Clinics
	Capital (Rm)	Connections	Connections	Capital (Rm)	Connections	Connections
1990/91	91,7	30 588	–	0,171	9	-
1992	441,8	145 522	12 698	0,576	76	13
1993	584,4	208 801	16 074	3,227	240	16
1994	807,9	254 383	16 838	11,193	562	21
1995	1 055,4	313 179	15 134	33,400	990	37
1996	1 048,9	307 047	9 414	47,090	1 028	16
1997	866,7	274 345	10 822	15,782	549	28
1998	845,1	280 977	10 375	33,461	951	1
Total	5 741,9	1 814 842	91 355	144, 901	4 405	132

¹1999 information not available at the time of printing.

The estimated number of connections made by the local authorities during the same period is 750 000. Urban areas are electrified to levels as high as 80–90 per cent, but in the impoverished rural areas the percentage is still well below 40 per cent.

Nuclear activities that are undertaken in accordance with international treaties include:

- Administration of the Nuclear Safety Act, 1998 and the Nuclear Energy Act, 1998
- Facilitation of the movement of nuclear material and the management of nuclear waste
- Administration of the nuclear non-proliferation treaty, the spent fuel convention and the International Atomic Energy Association international safeguards.

Policy developments

The process of restructuring the electricity distribution industry is currently underway. This will entail the amalgamation of Eskom's and the municipalities' distribution functions under a national holding company. Over time the holding company will be sub-divided into regional electricity distributors (Reds).

A policy decision has been taken to pilot the extension of non-grid electricity to electrify areas which cannot be connected into the national grid.

The Department is also in the process of finalising the revision of electrification funding. From 2001, funding for electrification will be allocated in the Department's budget. The White Paper on Energy Policy (1998) suggested a levy on the price of electricity as funding source. Electrification expenditure by Eskom is of the order of R1,4 billion per year, of which R300 million is managed by the National Electricity Regulator since 1997 to fund municipal electrification projects.

Programme 5: Auxiliary and associated services

Table 30.11 Programme Expenditure

R million	Budget estimate	Adjusted appropriation 1999/00	Revised estimate	Medium-term expenditure estimate		
				2000/01	2001/02	2002/03
1999 Budget	434,5	432,5	432,5	374,1	369,6	–
2000 Budget	–	–	–	375,2	358,1	589,8
Change to 1999 Budget estimate	–	(2,0)	(2,0)	1,1	(11,5)	–

The *Auxiliary and associated services* programme mainly provides funding to the nuclear industry. Nuclear energy is a minor component of the South African energy sector but despite its small contribution, the nuclear industry has been a recipient of a major portion of the Department's budget. Institutions involved in the nuclear sector are the South African Nuclear Energy Corporation (formerly the Atomic Energy Corporation), Eskom, the Council for Nuclear Safety (CNS) and the private sector Nuclear Fuel Corporation (Nufcor). The downward trend in expenditure under this programme is mainly due to the decline in operating allocations for Sanec, as depicted in the table below. Nevertheless, budgeted expenditure is expected to rise sharply in 2002/03 due to the repayment of the Sanec loans.

The programme transfers payments to a number of institutions, as set out in table 30.9.

Table 30.12 Detail of major payments made under programme 5

R million	Expenditure outcomes		Revised estimate 1998/99	Medium-term expenditure estimate			
	1996/97	1997/98		1999/00	2000/01	2001/02	2002/03
Mineral Technology research							
Council for Mineral Technology (Mintek)	73,0	83,0	85,8	81,8	77,7	71,5	65,8
South African Nuclear Energy Corporation							
Operational allocation	245,4	220,8	200,0	183,5	142,2	129,1	134,9
Closing – Z plant	29,4	21,7	36,5	–	16,2	15,0	19,5
Strategic loans	81,3	231,2	48,5	62,0	37,6	35,0	265,5
International Atomic Energy Agency Membership	–	–	2,6	4,2	4,9	5,6	5,6
Nuclear Safety							
Council for Nuclear Safety	5,3	5,4	5,8	6,1	6,8	7,0	7,3
Geoscience							
Council for Geoscience	59,7	64,6	67,3	63,8	60,6	55,8	51,2
Assistance to mines							
Pumping out water	24,7	27,5	30,9	29,5	29,5	38,0	39,5
Energy provision							
Cahora Bassa audit fees	0,1	0,2	0,2	0,2	0,2	0,3	0,3

Public entities reporting to the Minister responsible for Minerals and Energy

South African Nuclear Energy Corporation (Sanec)

The South African Nuclear Energy Corporation is committed to be a leading organisation that creates national wealth through development, industrialisation and commercialisation of nuclear and related technology.

The Sanec uranium enrichment and fuel fabrication plants have been closed and the conversion plant is scheduled to close in the near future. Since 1996, Sanec has identified its core competencies as radiation technology, fluorination and molecular laser isotope separation (MLIS).

Table 31.13 Sources of funding of Sanec

Revenue at 31 March: R million	1996/97	1997/98	1998/99	Projected 1999/00	Medium-term expenditure estimate		
					2000/01	2001/02	2002/03
Sales	266,182	181,508	165,515	176,698	226,501	232,889	252,080
Other revenue	9,312	12,004	17,189	68,576	38,642	38,830	40,327
Total external income	275,494	193,512	182,704	245,274	265,143	271,719	292,407
Government funding							
Activities	245,399	220,860	200,0	183,548	142,190	129,054	134,864
Interest	57,084	53,206	36,772	35,864	33,291	32,633	32,114
Loans	24,206	178,033	11,734	26,178	4,328	2,378	233,434
D & D Projects	29,408	21,673	36,520	–	15,578	16,191	19,536
IAEA membership	–	–	2,600	4,224	4,858	5,587	5,587
Total Government funding	356,097	473,772	287,626	249,814	199,245	985,843	425,535
Total	631,591	667,284	470,330	434,908	464,388	457,562	717,942

Government has identified the following three broad organisational activities for Sanec:

- Decommissioning and decontamination of past strategic nuclear fuel facilities, the management of nuclear waste disposal on a national basis and related regulatory functions.
- Commercial activities, including mechanical and systems engineering, which focuses on gas and liquid membrane separation systems and radiation technology.
- The activities of Sanec's isotope-producing reactor are under evaluation to determine the viability or necessity of producing large-scale isotopes for the export market and its possible expanded use for academic research and training.

The total local listed loan stock at 31 March 1999 was R276,3 million. The largest repayment of R233 million is due on 31 October 2002 and the final repayment of R5 million on 30 April 2004.

The Council for Mineral Technology (Mintek)

The Council for Mineral Technology (Mintek) provides research, development and technology transfer that fosters the establishment of businesses in the mineral and mineral product industries.

Mintek achieves these objects through the transfer of technology to industry, the promotion of the optimal supply and utilisation of mineral resources and by ensuring that its expertise and technology is world class and internationally competitive. Transfer payments to Mintek decrease from R81,8 million in 1999/00 to R77,7 million in 2000/01. Medium-term estimates are R71,5 million in 2001/02 and R65,8 million in 2002/03.

The Council for Geoscience (CGS)

The mandate of the Council for Geoscience includes:

- The systematic geoscientific mapping of South Africa, the interpretation and compilation of data and publications of maps and map explanations
- The undertaking of geological research to improve the understanding of geological processes
- The collection, curation and compilation of all geoscience data for South Africa in the National Geoscience Archives
- The maintenance of the National Borehole Core depository, the National Geoscience Library and the National Geoscience Museum
- The provision of geoscience services to the Department and the private sector.

Transfer payments to the Council for Geoscience are also declining from R63,8 million in 1999/00 to R51,2 million in 2002/03.

The Council for Nuclear Safety (CNS)

The Council for Nuclear Safety (CNS) was established in terms of the Nuclear Energy Act of 1993 to regulate, license and exercise control over nuclear installations and other activities involving radioactive materials. This includes situations where radioactive material is incidental to the main business of the licensee. The Council for Nuclear Safety receives transfers from the Department which will average about R7 million in the medium term.

Central Energy Fund (CEF)

CEF (Pty) Ltd has a diverse number of subsidiaries including Mossgas, SFF, Soekor, Enerkom, Syncat and the Equalisation Fund. Their functions and objectives differ and range from strategic, commercial and administrative, to developmental.

During 1999 CEF has completed an exercise which “normalised” the values and accounts of its subsidiaries. This was necessary before any restructuring of these assets could be undertaken and a dividend policy could be formulated. For 1999/00 a dividend of R180 million was paid to Government. Large investment projects such as the Mossgas E-M and the Associated Gas Fields Project, which are funded by State guaranteed loans, were undertaken by CEF during 1999/00. The Central Energy Fund does not receive funding from the budget.

The Mining Qualifications Authority (MQA)

The Mining Qualifications Authority (MQA) advises the Minister on qualifications and learning achievements in the mining industry in order to improve health and safety through proper training and education. The MQA submitted applications to South African Qualifications Authority to be recognised as an Education and Training Quality Assurance body and a Sector Education and Training Authority for the mining industry.

