

## Corporate governance and tables

# Governance in challenging times

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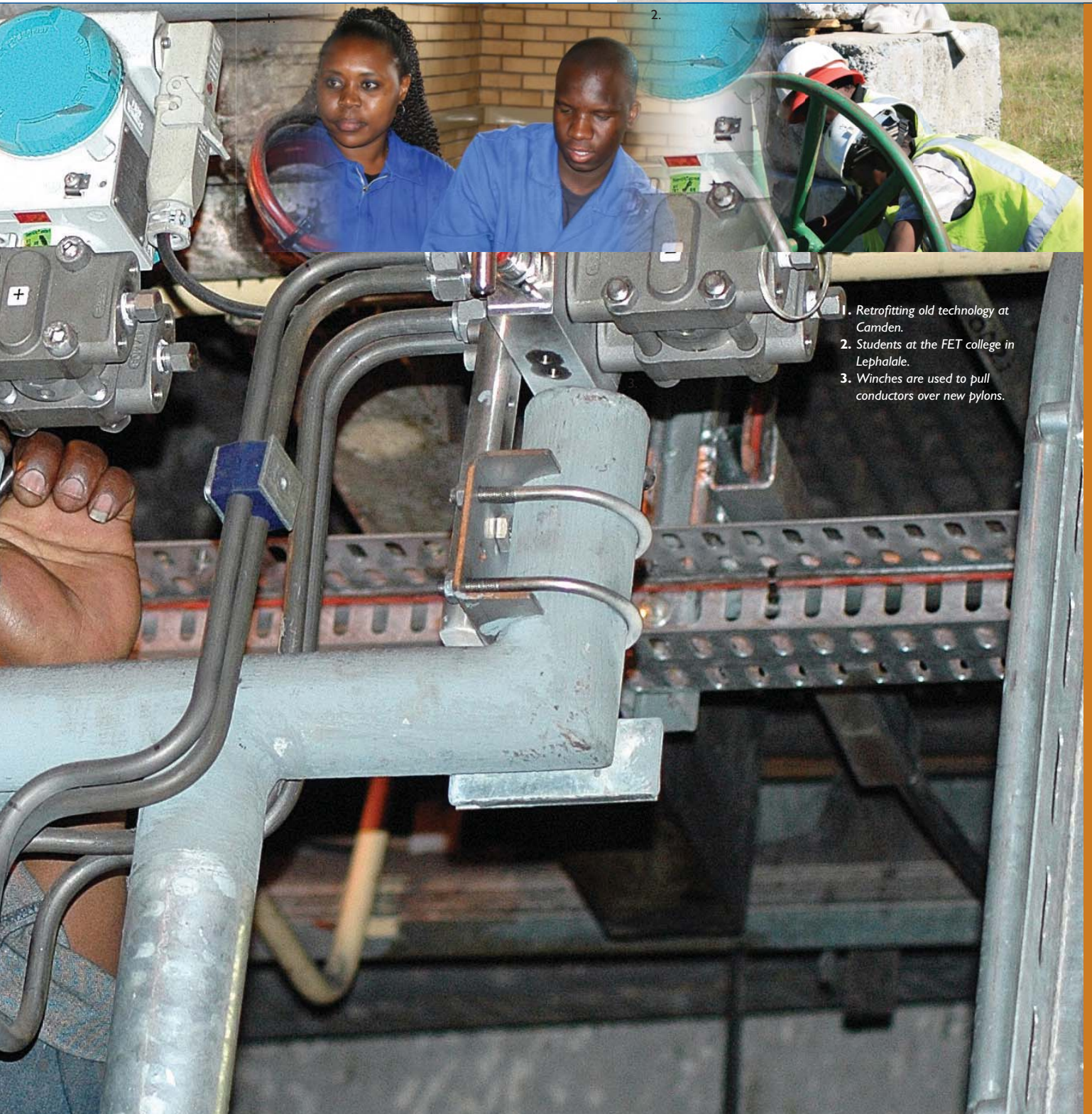
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*The rapidly changing environment has led to more intensive engagement with stakeholders.*



2.

1. Retrofitting old technology at Camden.
2. Students at the FET college in Lephalale.
3. Winches are used to pull conductors over new pylons.

## Corporate governance

### Introduction

The rapidly changing business environment presents new and increasingly complex corporate governance challenges. It is therefore critical, that an organisation's governance processes and practices are reviewed on a regular basis to ensure that they are in line with best practices.

Eskom views good corporate governance practices as integral to good performance. It is therefore essential for Eskom to fulfil its mandate in a manner that is in keeping with governance best practices and, in particular, with regard to accountability, transparency, fairness and responsibility.

We have adhered to the statutory duties and responsibilities imposed by the Companies Act as augmented by the Public Finance Management Act (PFMA). Eskom's systems and processes are regularly reviewed to ensure that compliance is monitored in this regard. In addition, Eskom is also guided on best practices by international developments as well as the King Report on Corporate Governance for South Africa – 2002 (King II) and the Protocol on Corporate Governance in the Public Sector – 2002.

The year has been a particularly challenging one for Eskom because of the capacity challenge and it was necessary that the governance processes, systems and structures were able to deal with a number of issues in a coherent and effective manner:

More frequent meetings of the board of directors and the executive management committee were required. In addition, Eskom had to engage with various stakeholders with regard to the capacity issues. There was a need for alignment with government as shareholder and more intensive communication and interaction with customers and the National Energy Regulator of South Africa (Nersa). At the same time Eskom had to focus on the capacity expansion programme and on the operations of the business and there was a need for quick decision-making on a number of issues.

In addition, the need for more intensive engagement with stakeholders resulted in a number of meetings between Eskom, government and customers, including the key industrial customers and major metros. A number of joint task teams were also established to assist with the resolution of some of the problems.

Admittedly, there were some weaknesses in the processes. The stakeholder communication and engagement could have been more effective and Eskom has acknowledged the criticism in this regard. However, in other respects, the integrity of Eskom's governance processes and structures was maintained and they functioned effectively. The current challenges and need at times for urgent decision-making did not lead to a deterioration of the high standards of corporate governance. The governance processes were adhered to and duties were fulfilled in a proper manner.

Eskom's massive capacity expansion programme in itself presents particular challenges for the governance processes. Eskom needs to ensure that there are adequate resources and expertise, and that our processes are beyond reproach. Consequently, a number of initiatives were implemented last year to strengthen our resources in this regard.

The regular review of governance practices was also carried out based on the conclusions of the last board evaluation. This included a review of the committees, the agendas, documentation tabled at board meetings and ongoing director training. In particular, the review of the delegation of authority was completed, with a special focus on procurement processes. The performance of the board committees was considered and areas for improvement were identified. Special information sessions have been introduced prior to scheduled board meetings to allow an opportunity for more detailed information on particular topics to be shared with directors.

An independent board evaluation for the period under review is being conducted.

### Shareholding and shareholder's compact

The government of the Republic of South Africa is Eskom's sole shareholder. The shareholder representative is the Minister of Public Enterprises.

Each year, Eskom, in consultation with the Minister of Public Enterprises, agrees its performance objectives, measures and indicators in line with treasury regulations under the PFMA. The annual targets are annexed to a list of principles agreed between Eskom and its shareholder (the shareholder compact).

## *The shareholder compact promotes good governance.*

The performance of the organisation against the performance objectives is indicated on page 30.

The compact does not interfere with the normal principles of company law. The relationship between the shareholder and board is preserved. The board ensures that proper internal controls are in place and that Eskom is effectively managed. The compact promotes good governance by helping to clarify the board and shareholder roles and responsibilities and ensures consensus on Eskom's mandate and key objectives.

### **Governing bodies**

#### **Composition of the board**

The details of the directors appear on pages 14 to 15.

Eskom has a unitary board structure with 13 non-executive directors and two executive directors. All of the non-executive directors are independent directors, appointed by the shareholder, are drawn from diverse backgrounds (local and international) and reflect South Africa's demographics. They bring a wide range of experience and professional skills to the board. In addition, a number of respected external people have been appointed to a number of the board committees, bringing additional experience to the table.

Eskom's articles of association stipulate that the shareholder will, after consulting the board, appoint a chairman, chief executive and non-executive directors. The remaining executive directors are appointed by the board after obtaining shareholder approval.

Good corporate governance requires that the composition of the board be reviewed on a regular basis. The rotation of directors at regular intervals is accepted as good practice as it ensures that a board remains dynamic and does not become stagnant in terms of its thinking and abilities. However, it is important that it is managed in such a way that the rotation of directors does not lead to a disruption in the operations of the business and that the board is well balanced in terms of skills, expertise and demographics (race, gender and people with disabilities).

The term of office of non-executive directors is a maximum of three years, which will expire at the annual general meeting in July 2008. The terms of these directors will accordingly be reviewed and they are eligible for re-appointment.



*Eskom's Klipheuwel wind farm near Bellville.*

Executive directors are full-time employees and as such are subject to Eskom's conditions of service.

Board meetings are scheduled annually in advance. Special meetings are convened as necessary to address specific issues. Directors or committee members unable to attend meetings may use teleconferencing facilities. The attendance of members at the 10 board meetings during the reporting period is reflected on page 208.

#### **Delegation of authority**

The board has the authority to lead, control, manage and conduct the business of Eskom, including the authority to delegate. Its aim is to ensure that Eskom remains a sustainable and viable business of global stature. Its responsibilities are facilitated by a well-developed governance structure through board committees, including the executive management committee (Exco), as well as subcommittees of Exco and a comprehensive delegation-of-authority framework. This framework assists decision-making without diluting director accountability and responsibility. The board reviews the framework regularly. It was last reviewed in December 2007.

## Corporate governance continued

### Board evaluation and performance

A performance evaluation of the board and individual directors is conducted at the end of the financial year. Any shortcomings are addressed and areas of strength consolidated. The performance of board committees is evaluated against their terms of reference. The human resources, remuneration and ethics committee facilitates the evaluation of senior management.

### Director induction and orientation

New directors and external committee members complete an induction programme to improve their understanding of Eskom's legislative framework, governance processes, delegation of authority and business operations. Continual training addresses the needs of each director or group of directors. Directors are briefed on new legislation and regulations. The induction and training includes visits to certain business sites.

### Board and board committees – meeting attendance table 2008

	Board	Audit	Investment and finance	Tender	Sustain- ability	Human resources, remuneration and ethics	Risk manage- ment	Exco
Number of meetings	10 <sup>1</sup>	7	10 <sup>2</sup>	12 <sup>3</sup>	4	5	5	33 <sup>4</sup>
<b>Board members</b>								
MV Moosa	10	–	–	–	4	3 <sup>5</sup>	–	–
M Bello	4	–	–	–	–	–	–	–
LCZ Cele	10	7	–	12	–	–	–	–
BM Count	7	6	7	–	–	3	–	–
LG Josefsson	7	6	–	–	2	–	–	–
WE Lucas-Bull	10	–	9	–	4	–	–	–
PM Makwana	7	4	–	–	–	5	–	–
PJ Maroga	9	–	8	–	4	4	–	29
ET Marshall	9	–	–	11	–	–	5	–
JRD Modise	10	7	–	–	–	–	5	–
V Mohanlal Rowjee	9	–	–	10	–	5	–	–
AJ Morgan	10	–	9	11	–	–	5	–
SA Mpambani	10	7	–	11	–	–	–	–
U Nene	8	–	5	–	4	–	2 <sup>5</sup>	–
B Nqwababa	10	–	8	–	–	–	4	33
<b>External members</b>								
S Fakie <sup>5</sup>	–	4	–	–	–	–	–	–
BL Fanaroff	–	–	–	–	3	4	–	–
TS Gcabashe	–	–	–	–	–	–	–	1 <sup>5</sup>
MJ Husain	–	–	–	7	–	–	–	–
MM Matutu	–	–	–	–	4	–	–	–
S Sebotsa	–	–	6	–	–	–	–	–
<b>Executive management</b>								
BA Dames	–	–	–	–	–	–	–	32
JA Dladla	–	–	–	–	–	–	–	29 <sup>5</sup>
E Johnson	–	–	–	–	–	–	–	23 <sup>5</sup>
SJ Lennon	–	–	–	–	–	–	–	30 <sup>5</sup>
ME Letlape	–	–	–	–	–	–	–	29
EN Matya	–	–	–	–	–	–	3 <sup>5</sup>	30
PD Mbonyana	–	–	–	–	–	–	–	6 <sup>5</sup>
A Noah	–	–	–	–	–	–	–	19 <sup>5</sup>
M Ntsokolo	–	–	–	–	–	–	–	27 <sup>5</sup>

<sup>1</sup> Four of the board meetings were special meetings.

<sup>2</sup> Six of the investment and finance committee meetings were special meetings.

<sup>3</sup> Three of the tender committee meetings were special meetings.

<sup>4</sup> Six of the Exco meetings were special meetings.

<sup>5</sup> Only a member for part of the year.

## Total electricity provided by Eskom power stations 239 108GWh.

As a result of the capacity challenges facing the company, additional board meetings were held during the year and these are reflected in the table on the meeting schedule and attendance. It should be pointed out that over and above these additional board meetings, numerous board briefings and meetings of the chairpersons of the board committees were also held on a regular (at times weekly) basis. The purpose of the additional briefing sessions and meetings of the committee chairpersons was to keep directors informed of key developments as they unfolded and to allow directors an opportunity to express their views on the developments and strategies on an ongoing basis.

This called for the Eskom directors to commit significant additional time to the business of Eskom during this critical period.

### Directors' remuneration

Please refer to note 43 on page 198 in the annual financial statements for details of directors' remuneration.

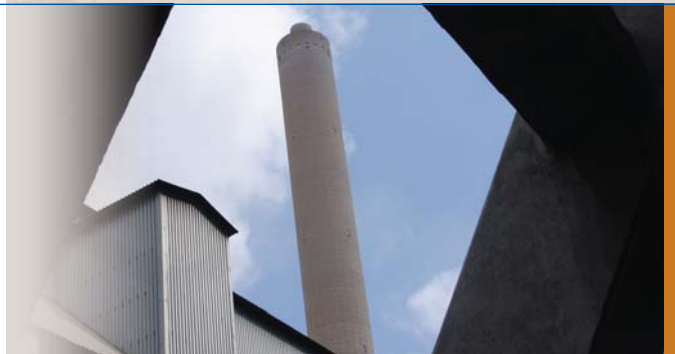
### Company secretarial function

Directors have unrestricted access to the advice and services of the company secretary, and those of the secretariat department. Directors may seek independent professional advice at Eskom's expense, should they deem this necessary.

The company secretary and those responsible for the assurance functions in the Corporate Services division monitor Eskom's compliance with the PFMA, Companies Act and other relevant legislation, and report to the board on these issues.

### Board committees

Several committees assist the board in carrying out its responsibilities. Their recommendations and reports to the board ensure transparency and full disclosure of committee activities. Each committee operates within terms of reference that set out the composition, role, responsibilities and delegated authority of the committee. The board from time to time sets up committees for specific (ad hoc) purposes. All committees, except Exco, comprise a majority of independent non-executive directors. An independent non-executive director serves as chairman in each case. Committee meeting attendance is reflected on page 208.



*The smokestacks at Duvha power station are about 300 metres high.*

In addition to the terms of reference, a board committee exercises its delegated authority in accordance with specific policies approved by the board from time to time.

### Audit committee

The committee comprises five independent non-executive directors. Mr S Fakie attended for part of the year as an external appointee. The committee monitors that internal control is maintained to protect Eskom's interests and assets.

The committee also reviews any accounting and auditing concerns raised by internal and external audit, the annual financial statements, the interim reports, the accompanying reports to shareholders, the preliminary announcement of results and any other announcement regarding the company's results or other financial information to be made public.

The committee ensures that an effective internal audit function is in place and that the roles and functions of the external audit and internal audit are sufficiently clarified and co-ordinated to provide an objective overview of the operational effectiveness of the company's systems of internal control, risk management, governance and reporting. The committee also has to assess the performance of the internal audit function, and the adequacy of available internal audit resources.

The committee considers and makes recommendations on the appointment and retention of the external auditors, the fees paid and the terms of engagement, pre-approves the nature and extent of any non-audit services and evaluates their independence, objectivity and effectiveness.

The head of the corporate audit department and the external auditors have unrestricted access to the chairman of the committee and Eskom's chairman. The committee reviews the accuracy, reliability and credibility of statutory financial reporting. It also reviews the annual financial statements and the Eskom group annual report, as presented by management prior to board approval.

Seven committee meetings were held during the review period. They were also attended by the external auditors, the finance director, the head of the corporate audit department, the managing director of the corporate services division and relevant company officials.

#### **Investment and finance committee**

The committee comprises four independent non-executive directors, the chief executive and finance director, together with Mrs S Sebotsa, an external appointee. The committee reviews the investment strategy and makes recommendations to the board. It evaluates and approves business cases for new ventures or projects, approves criteria and guidelines for investments and approves investments within its delegated authority.

The committee monitors and oversees the financial health of Eskom, including the review of budgets and financial and business plans. Investment decisions are made within a framework of policies that guide such decisions and which are approved by the board.

Ten committee meetings were held.

#### **Tender committee**

The committee comprises five independent non-executive directors, together with Mr MJ Husain, an external appointee

who brings additional expertise to the committee. The tender committee assists the board with procurement decisions, and approves procurement policies, tenders and contracts within its delegated authority. It ensures that Eskom's procurement system is equitable, transparent, competitive and cost effective. If the value of the contracts to be approved exceeds the committee's authority, the contracts are referred to the board for approval.

Twelve committee meetings were held.

#### **Sustainability committee**

The committee comprises four independent non-executive directors and the chief executive, as well as Mr BL Fanaroff and Mr MM Matutu, external appointees who bring additional expertise to the committee. This committee deals with integrated sustainability issues and approves or recommends policies, strategies and guidelines, particularly related to safety, health, environment, quality and nuclear issues.

The committee also scrutinises nuclear safety at Eskom facilities to ensure that standards exceed all regulatory and internal requirements, and remain consistent with international best practice.

Four meetings were held.

#### **Human resources, remuneration and ethics committee**

This committee comprises three independent non-executive directors, the chairman of the board and the chief executive (who is recused when his remuneration is considered), as well as Mr BL Fanaroff, an external appointee who brings additional expertise to the committee.

The committee, inter alia, makes recommendations on remuneration policies, the appointment and replacement of directors and senior managers, and monitors the ethical conduct of the company, its management, employees and suppliers.

Five meetings were held.

## *Eskom has identified 13 major risk categories against which all business objectives are assessed.*

### **Nomination committee**

The board has established a nomination committee to deal with the appointment of non-executive directors to the board.

This committee comprises the chairman of the board, the chairman of the human resources, remuneration and ethics committee and the chief executive.

### **Risk management committee**

The committee comprises four independent non-executive directors and the finance director. It ensures that the company's risk management strategies and processes are aligned with best practices. The audit committee chairman also sits on the risk management committee to ensure that common issues are addressed adequately.

Five meetings were held during the year, covering the integrated risk management strategy and processes, risk tolerance and appetite, risk accountabilities, major risk exposures and emerging risks.

Further information on the risk management processes is set out on pages 28 and 212.

### **Executive management committee (Exco)**

Up to 6 February 2008, when the structure was changed, Exco comprised the chief executive, the finance director and divisional managing directors of Eskom.

The Eskom board rationalised the Exco structure with effect from 6 February 2008 on the recommendation of the chief executive. The new Exco structure includes the chief executive, the finance director; the managing directors of corporate services, human resources and corporate affairs (still to be appointed), and the newly introduced positions of chief officer (generation) and chief officer (networks and customer services). This led to the clustering of related line businesses. The divisional managing directors in portfolios that now report to the two new chief officers continue to participate in Exco as officials. Details of executive management appear on page 22.



*A high-voltage line under construction.*

The committee assists the chief executive in guiding the overall direction of the business and in exercising executive control. Its task is to assist with the effective management of the day-to-day operations of the business.

Thirty-three Exco meetings were held, including scheduled operations and security of supply meetings, special meetings and strategic workshops. Attendance is reflected on page 208.

Exco is assisted by its procurement, operations, investment, nuclear management and sustainability and safety subcommittees.

### **Public Finance Management Act (PFMA)**

The board is the accounting authority in terms of the PFMA, and Eskom is listed as a Schedule 2 public entity. This Act also applies to subsidiaries and entities owned or controlled by Eskom. They are also classified as Schedule 2 entities.

The PFMA regulates financial management and governance. Eskom ensures that all directors and employees are aware of the provisions of the PFMA through regular training programmes.

Directors comply with their fiduciary duties as set out in the PFMA. Board responsibilities are also specified in the PFMA.

### Integrated risk management (IRM)

The Eskom board, through the risk management committee, acknowledges its overall accountability for ensuring an effective results-driven, IRM process. Exco has implemented a risk monitoring system that enables management to respond appropriately to all significant risks that could impact negatively or positively on business objectives.

To ensure completeness of the risk identification process, Eskom has identified 13 major risk categories against which all business objectives are assessed. The Eskom integrated risk accountability matrix assigns executive accountability for each of the 13 risk categories.

Risk management in Eskom is performed at departmental, regional, divisional and subsidiary level and reported upward to corporate (bottom-up). After consolidation of these integrated risk reports, Exco and the board risk management committee review and evaluate the risk profile to determine the major operational, strategic and business continuity risks (top-down).

Refer to [www.eskom.co.za/annreport08/049](http://www.eskom.co.za/annreport08/049) for more details of Eskom's risk management principles.

### Ethical business conduct

Eskom commits itself to the highest standard of ethical conduct, underpinning its key value of integrity. It strives at all times to foster trust, dependability and honesty.

The ethics office assists the chief executive and the board in setting the framework, rules, standards and boundaries for ethical behaviour, and provides guidance to the Eskom group on ethical conduct.

Key milestones for the past financial year include the approval of Eskom's code of ethics by its executive committee and the board, the development of a communication strategy for the launch of

the code in April/May 2008 and its subsequent implementation throughout the organisation. Training was provided to 77% of the workforce on conflict of interest and ethics training was given to new employees through the induction programmes.

Ethics awareness is furthermore created through the following channels and ongoing initiatives:

- maintaining effective ethics structures within each division
- keeping the executive committee and the human resources, remuneration and ethics committee informed via quarterly ethics status reports
- providing an ethics advisory service for employees, suppliers and customers
- maintaining an advisory service database in order to identify trends
- monitoring ethics training interventions within the divisions
- monitoring the submissions of the electronic declaration of interests forms by the board of directors, the executive committee and employees
- maintaining the ethics website, covering key ethical issues, frequently asked questions and training material
- hosting the annual ethics networking forum for ethics sponsors and co-ordinators
- promoting Eskom's externally managed toll-free whistle-blowing line, enabling employees, suppliers and customers to report crime and irregularities confidentially

### Internal control

The board is responsible for ensuring that an effective internal control framework is established. Eskom controls focus on critical risk areas identified by operational risk management and confirmed by management. Controls provide cost-effective assurance that assets are safeguarded and liabilities and working capital are efficiently managed. Organisational policies, procedures, structures and approval frameworks provide direction, establish accountability and separate responsibilities. They each contain self-monitoring mechanisms. Management and the corporate audit department monitor controls and corrective action.

## Eskom contributes to the development of the disadvantaged and promotes skills development.

### Audit

In line with the requirements of the PFMA and good governance, corporate audit gives the audit committee and management information on the appropriateness and effectiveness of internal controls. Information is derived from an independent evaluation of risk management and governance processes and internal controls. Corrective action is identified and improved controls suggested.

The audit plan covers major financial and commercial risks and responds to any changes in Eskom's risk profile.

Corporate audit is supported by the board and audit committee and has unrestricted access to all organisational activities, records, property and personnel.

External auditors independently audit and report on the financial statements. The statements comply with international financial reporting standards (IFRS).

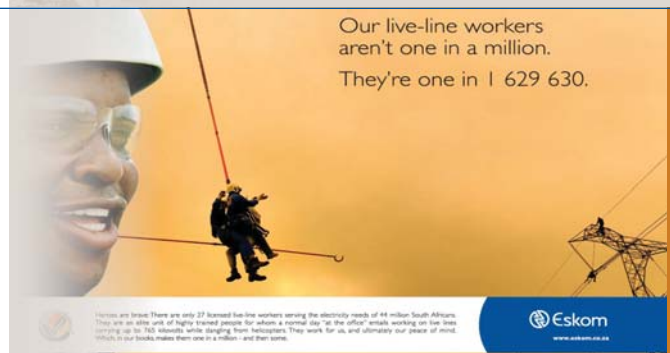
### Technical audit

The corporate technical audit department provides reports to management on technical, environmental, quality and safety performance. It also carries out incident investigations and monitors technical performance. In addition, the department measures and verifies energy efficiency and load-shifting projects. Safety, health, environmental, quality and technical risk audits, reviews and assessments are also conducted.

Corporate technical audit is supported by the board, audit committee and chief executive, and has unrestricted access to all organisational activities, records, property and personnel. Audit programmes are based on one- and three-year cycles.

### Security risk management

The board ensures that an integrated crime-prevention plan is implemented to minimise exposure to criminal acts, particularly fraud. The security risk management department addresses these threats. Its work covers crime prevention, detection, response and investigation.



One of the new corporate advertisements.

Where serious fraud, corruption and irregularities are suspected, forensic investigations (a division of security risk management) establishes the facts to enable management to deal appropriately with the matter and prevent a recurrence.

### Stakeholder engagement

We define our stakeholders as any group or individual who can affect or is affected by the achievement or non-achievement of Eskom's business objectives. Stakeholders are all important to Eskom and we need to communicate with and engage our stakeholders in an effective and transparent manner. Our stakeholders include: employees; our shareholder; national, provincial and local government; parliament; customers; financial institutions; lenders; rating agencies; suppliers and contractors; regulatory authorities; professional institutions or bodies; organised business and labour; industry, media and civil society organisations.

Eskom's primary stakeholder management objectives are:

- to identify, prioritise and build relationships with stakeholders at national, provincial, regional and local level
- to inform stakeholders of Eskom's strategic priorities
- to build the trust with internal and external stakeholders through strategic action-driven stakeholder engagement that is relevant to the business

Eskom uses various techniques to identify its stakeholders. The following are some of them:

- issues serve as a guide to identifying the stakeholders with whom we need to engage. An “issue” can be defined most simply as: “the gap between what a stakeholder expects of an organisation and the organisation’s corporate practice”
- we further align the six priorities of the organisation to the stakeholders that must be consulted

The categorisation of stakeholders aids in facilitating the allocation of responsibilities, accountabilities as well as resources for dealing with the various stakeholder categories.

We have a stakeholder management and engagement strategy that ensures a pro-active stakeholder engagement process. Firstly, we analyse the issue, map it with the relevant stakeholders and then engage with those stakeholders.

### **Sustainability, occupational health, safety and environmental management**

The chief executive, as chief safety officer and chairman of Exco’s sustainability and safety subcommittee, is accountable for overall sustainability and safety performance.

The sustainability and safety subcommittee guides our strategy and sets performance targets on sustainability, occupational health and safety and environmental matters, in line with Eskom’s safety, health and environmental policy, the National Environmental Management Act (107 of 1998), as amended, and the Occupational Health and Safety Act, (85 of 1993), as amended. Strategies are reviewed and approved by the sustainability committee of the board.

Exco’s operations subcommittee assesses occupational health, safety and environmental performance and reviews major incidents to ensure that corrective action is taken.

### **Nuclear safety**

The nuclear safety assurance function is kept independent from the electricity production function by dividing Eskom’s nuclear infrastructure into two. The nuclear business area is directly accountable to the chief officer (generation) for all aspects of electricity production at Koeberg power station, including safety. The nuclear safety and assurance section, a separate department in the Generation division with its own technical experts and resources, provides independent assurance on nuclear safety and compliance with licence requirements.

In line with international best practice, Eskom has a three-tier system of nuclear safety governance. The sustainability committee of the board (the top tier) dedicates several meetings a year to nuclear matters. The meetings are attended by international nuclear experts who bring a broad perspective to the deliberations. The middle tier, the nuclear management committee, presided over by the managing director of the Generation division, monitors, reviews and makes recommendations on issues such as nuclear policy, standards, benchmarks and rules and Eskom’s overall business requirements. The third tier, the safety review group, brings together experts from various parts of Eskom to evaluate nuclear safety issues and make recommendations to senior management and other tiers.

### **Corporate citizenship**

The objective of government’s Accelerated and Shared Growth Initiative for South Africa (Asgisa) is to promote economic growth and halve poverty and unemployment by 2014. Eskom’s contribution to accelerated and shared growth is centrally co-ordinated and facilitated through the office of the chief executive. Eskom’s most significant contribution to Asgisa is through its core business of supplying reliable electricity. Eskom also leverages associated activities, including its corporate social investment (CSI) programmes, for the development of the disadvantaged.

Eskom CSI contributes to the development of the disadvantaged and promotes skills development, job creation, education and health. Many CSI initiatives are executed by the Eskom Development Foundation.

#### **Subsidiaries**

Eskom Enterprises (Pty) Limited, an Eskom subsidiary that focuses on its non-regulated activities, has subsidiaries in South Africa, Mali, Zambia, Uganda and, until March 2008, Lesotho. All of the Eskom Enterprises group companies are governed by independent board structures with their own internal control. Eskom Enterprises and its wholly owned subsidiaries are subject to Eskom group policies, governance and financial control. The directors are accountable to Eskom as shareholder through the shareholder compact.

Eskom's other wholly owned subsidiaries – Eskom Finance Company (Pty) Limited, Eskom Development Foundation, Escap Limited and Gallium Insurance Company Limited are governed by independent boards. The directors are accountable to Eskom through the shareholder compact.

The subsidiaries comply with the PFMA and Companies Act, or their equivalent legislation where they are foreign-registered, and follow good governance principles.

## Tables

### I. Statistical overview

	2008	2007	2006	2005 (15 months)	2004
<b>Sales</b>					
Total sold (GWh) <sup>1,2</sup>	224 366	218 120	207 921	256 453	206 799
Growth in GWh sales (%)	2,9	4,9	(18,9) <sup>3</sup>	30,5	5,0
<b>Electricity output</b>					
Total electricity for Eskom system (Eskom stations and purchased) (GWh) <sup>4</sup>	250 618	243 926	232 295	285 601	229 970
Total produced by Eskom stations (GWh (net))	239 108	232 443	221 985	273 404	220 152
Coal-fired stations (GWh (net))	222 908	215 211	206 606	251 914	202 171
Hydroelectric stations (GWh (net))	751	2 443	1 141	903	720
Pumped storage stations (GWh (net))	2 979	2 947	2 867	3 675	2 981
Gas turbine stations (GWh (net))	1 153	62	78	–	–
Nuclear power station (GWh (net))	11 317	11 780	11 293	16 912	14 280
Total purchased for Eskom system (GWh)	11 511	11 483	10 310	12 197	9 818
Total consumed by Eskom (GWh) <sup>5</sup>	4 235	3 937	3 814	5 043	4 040
Total available for distribution (GWh) <sup>2</sup>	246 383	239 989	228 481	280 558	225 930
<b>Plant performance indicators</b>					
Total power station nominal capacity (MW)	43 037	42 618	42 011	42 011	42 011
Total power station net maximum capacity (MW)	38 744	37 761	36 398	36 208	36 208
Peak demand on integrated Eskom system (MW)	36 513	34 529	33 461	34 195	34 195
Average energy availability – EAF (UCF) (%) <sup>6,7</sup>	84,8 (86,2)	87,5 (88,6)	87,4 (88,7)	89,5 (89,9) <sup>8</sup>	89,5 (90,0)
Generation load factor (%) <sup>7,9</sup>	72,3	72,4	69,7	69,0	69,2
Integrated Eskom system load factor (EUF) (%)	85,2	82,7	79,8	78,0	77,4
<b>Environmental indicators</b>					
Relative particulate emissions (kg/MWh sent out)	0,21	0,20	0,21	0,26 <sup>8</sup>	0,27
Specific water consumption (L/kWh sent out) <sup>10</sup>	1,32	1,35	1,32	1,27 <sup>8</sup>	1,26
Reported legal contraventions counted in the operational health dashboard (number) <sup>11</sup>	6	0	1	3 <sup>8</sup>	2
Customer satisfaction (PreCare/MaxiCare) (ratio)	–	–	–	8,29 <sup>8</sup>	8,31
Customer satisfaction (Enhanced PreCare/MaxiCare) (ratio) <sup>12</sup>	97,21	100,80	101,06	93,10	–
Net raw water consumption (ML)	322 666	313 064	291 516	347 135	277 557
Coal burnt (Mt)	125,3	119,1	112,1	136,4	109,6
Average calorific value (MJ/kg)	18,51	19,06	19,58	19,36	19,42
Average ash content (%)	29,09	29,70	29,10	29,60	29,60
Average sulphur content (%)	0,87	0,86	0,88	0,87	0,87
Overall thermal efficiency (%)	33,4	33,9	33,8	34,0	34,0
Line losses (%)	8,0	8,4	8,2	8,2 <sup>8</sup>	7,8
Nitrous oxide (N <sub>2</sub> O) (t) <sup>13</sup>	2 872	2 730	3 134	3 552	2 924
Carbon dioxide (CO <sub>2</sub> ) (Mt) <sup>13</sup>	223,6	208,9	203,7	247,0	197,7
Sulphur dioxide (SO <sub>2</sub> ) (kt) <sup>13</sup>	1 950	1 876	1 763	2 236	1 779
Nitrogen oxide (NO <sub>x</sub> as NO <sub>2</sub> ) (kt) <sup>13</sup>	984	930	877	994	797
Particulate emissions (kt)	50,84	46,08	45,76	72,83	59,17
Ash produced (Mt)	36,04	34,16	33,40	40,80	33,10
Ash sold (Mt)	2,4	2,2	1,8	2,0	1,6
Radiation release (mSv) <sup>14</sup>	–	–	–	–	–
Radiation release (mSv) <sup>15</sup>	0,0041	0,0034	0,0049	0,0079 <sup>8</sup>	0,0087
Low-level radioactive waste (m <sup>3</sup> )	181,80	86,20	91,30	282,50	258,80
Intermediate-level radioactive waste (m <sup>3</sup> )	26,8	36,0	52,4	114,5	97,5
Low-level nuclear waste – fuel racks (m <sup>3</sup> ) <sup>16</sup>	697	697	697	697	697
Spent nuclear fuel (number of elements (cumulative figure))	112 (1 673)	56 (1 561)	52 (1 505)	104 (1 453)	56 (1 405)
<b>Sales to countries in southern Africa (GWh)</b>					
Botswana	2 181	1 959	1 727	2 111	1 699
Mozambique	8 491	8 435	8 167	10 108	8 076
Namibia	2 087	1 632	1 709	1 821	1 515
Zimbabwe	107	589	549	598	532
Lesotho <sup>18</sup>	50	50	23	13	12
Swaziland	770	856	760	872	697
Zambia	222	68	187	465	403
Short-term energy market <sup>19</sup>	–	–	–	20	20

	2003	2002	2001	2000	1999	1998
	196 980	187 957	181 511	178 193	173 412	171 457
	4,8	3,5	1,8	2,8	1,1	(0,6)
	218 412	207 233	198 790	194 601	188 475	185 583
	210 218	197 737	189 590	189 307	181 818	183 093
	194 046	181 651	175 223	172 362	165 665	165 473
	777	2 357	2 061	1 343	726	1 596
	2 732	1 738	1 587	2 591	2 590	2 420
	–	–	–	1	–	3
	12 663	11 991	10 719	13 010	12 837	13 601
	8 194	9 496	9 200	5 294	6 657	2 490
	3 664	2 354	2 177	3 478	3 507	3 299
	214 748	204 879	196 613	191 123	184 968	182 284
	42 011	42 011	42 011	41 298	40 585	39 872
	36 208	36 208	36 208	35 584	34 585	33 977
	31 928	31 621	30 599	29 188	27 813	27 803
	87,5 (88,7)	89,3 (91,7)	92,0 (92,5)	92,1 (92,8)	91,0 (92,5)	91,6 (92,7)
	66,3	62,3	59,8	60,6	61,2	61,6
	76,8	74,0	73,4	74,7	75,9	74,8
	0,28	0,29	0,31	0,35	0,37	0,36
	1,29	1,27	1,26	1,21	1,25	1,23
	2	3	2	3	9	9
	8,47	8,57	8,43	8,82	8,78	8,90
	–	–	–	–	–	–
	271 940	251 611	239 233	228 759	227 288	225 280
	104,4	96,5	94,1	92,5	88,5	87,2
	19,41	19,54	19,42	19,50	19,53	19,84
	28,90	28,40	28,80	28,60	28,50	29,10
	0,92	0,92	0,93	0,90	0,96	0,93
	34,2	34,1	34,1	34,4	34,4	34,2
	8,3	8,2	7,2	7,4	6,2	5,9
	2 580	2 246	2 154	2 093	2 010	2 031
	190,1	175,2	169,3	161,2	159,4	163,2
	1 728	1 494	1 500	1 505	1 506	1 583
	760	702	684	674	673	669
	58,65	57,53	59,64	66,08	67,08	65,21
	29,80	26,20	26,50	24,60	24,30	24,70
	1,2	1,3	1,2	1,1	1,1	1,2
	–	0,0005	0,0007	0,0005	0,0005	0,0007
	0,0123	0,0060	0,0192	0,0059	0,0112	0,0088
	86,90	89,04	117,25	72,80	70,77	61,18
	37,4	30,21	45,65	22,10	37,11	22,77
	–	–	–	–	–	–
	104 (1 349)	48 (1 245) <sup>17</sup>	104 (1 197)	52 (1 093)	104 (1 041)	52 (937)
	10 173	6 956	6 710	3 872	3 884	4 093
	1 390	1 124	1 183	986	934	689
	5 875	3 907	3 899	1 331	68	385
	1 114	598	578	640	562	602
	793	298	371	788	1 564	1 521
	38	16	40	12	55	209
	796	799	639	115	701	687
	151	103	–	–	–	–
	16	111	–	–	–	–

<sup>1</sup> Sales prior to 2005 include internal sales.

<sup>2</sup> Difference between electricity available for distribution and electricity sold is due to transmission and other losses.

<sup>3</sup> Actual sales growth was 0,8% when compared to the 12 months 1 April 2004 to 31 March 2005.

<sup>4</sup> Includes Eskom electricity produced and delivered to neighbouring countries.

<sup>5</sup> Used by Eskom for pumped storage facilities and synchronous condenser mode of operation.

<sup>6</sup> Capacity hours available times 100 divided by total capacity hours in a year.

<sup>7</sup> After excess capacity.

<sup>8</sup> Represents the 12-month moving average for 1 April 2004 to 31 March 2005.

<sup>9</sup> kWh produced times 100 divided by average net maximum capacity times hours in a year.

<sup>10</sup> Volume of water consumed per unit of generated power sent out, excluding Camden and Grootvlei power stations as well as rain and mine water used.

<sup>11</sup> 2000 to 2002 reported in terms of the revised definition of the operational health dashboard index. Other environmental-related contraventions included since 1998. Only water-related incidents were reported prior to 1998. From 2008, repeat legal contraventions are included in the criteria.

<sup>12</sup> Reflects the environmental element of Enhanced MaxiCare. The Enhanced MaxiCare replaced the PreCare/MaxiCare from January 2005.

<sup>13</sup> Calculated annual figures based on coal characteristics and power station design parameters excluding Camden, Grootvlei and the gas turbine power stations.

<sup>14</sup> Radiation releases, based on the methodology stipulated by the National Nuclear Regulator prior to 2003, included for reference purposes.

<sup>15</sup> Indicators have been restated for meaningful comparison based on the more conservative methodology approved by the National Nuclear Regulator from 1 January 2003. The limit set by the National Nuclear Regulator is  $\leq 0,25\text{mSv}$ .

<sup>16</sup> Waste as a result of re-racking of spent fuel elements at Koeberg power station.

<sup>17</sup> The 2002 figure was restated as one element was not reported.

<sup>18</sup> Lesotho started its own generation in 1999.

<sup>19</sup> The short-term energy market consists of all the utilities in the southern African countries that form part of the Southern African Power Pool. Energy is traded on a daily, weekly and monthly basis as there is no long-term bilateral contract.

## Tables continued

### 2. Power station capacities

at 31 March 2008

Name of station	Location	Number and designed capacity of generator sets	Total nominal capacity	Total net maximum capacity	Generators in reserve storage	Other generation	
			MW	MW	MW <sup>1</sup>	Number	Total nominal rating MW
<b>Coal-fired stations (13)</b>			37 458	33 566	15	2 200	–
Arnot <sup>3,9</sup>	Middelburg, Mpumalanga	3 × 350; 3 × 370	2 160	2 040	–	–	–
Camden <sup>4,10</sup>	Ermelo	8 × 200	1 520	1 250	1	200	–
Duvha <sup>3</sup>	Witbank	6 × 600	3 600	3 450	–	–	–
Grootvlei <sup>4</sup>	Balfour	6 × 200	1 200	190	5	1 000	–
Hendrina <sup>3</sup>	Mpumalanga	10 × 200	2 000	1 895	–	–	–
Kendal <sup>3,5</sup>	Witbank	6 × 686	4 116	3 840	–	–	–
Komati <sup>4</sup>	Middelburg, Mpumalanga	5 × 100; 4 × 125	1 000	–	9	1 000	–
Kriel <sup>3</sup>	Bethal	6 × 500	3 000	2 850	–	–	–
Lethabo <sup>3</sup>	Viljoensdrift	6 × 618	3 708	3 558	–	–	–
Majuba <sup>3</sup>	Volksrust	3 × 657; 3 × 713	4 110	3 843	–	–	–
Matimba <sup>3,5</sup>	Lephalale	6 × 665	3 990	3 690	–	–	–
Matla <sup>3</sup>	Bethal	6 × 600	3 600	3 450	–	–	–
Tutuka <sup>3</sup>	Standerton	6 × 609	3 654	3 510	–	–	–
<b>Gas/liquid fuel turbine stations<sup>6</sup> (4)</b>			1 385	1 378	–	–	–
Acacia	Cape Town	3 × 57	171	171	–	–	–
Ankerlig <sup>11</sup>	Atlantis	4 × 149	596	592	–	–	–
Gourikwa <sup>11</sup>	Mossel Bay	3 × 149	447	444	–	–	–
Port Rex	East London	3 × 57	171	171	–	–	–
<b>Hydroelectric stations (6)</b>			661	600	–	–	61
Colley Wobbles	Mbashe River	3 × 14	42	–	–	–	42
First Falls	Umtata River	2 × 3	6	–	–	–	6
Gariiep <sup>7</sup>	Norvalspont	4 × 90	360	360	–	–	–
Ncora	Ncora River	2 × 0,4; 1 × 1,3	2	–	–	–	2
Second Falls	Umtata River	2 × 5,5	11	–	–	–	11
Vanderkloof <sup>7</sup>	Petrusville	2 × 120	240	240	–	–	–
<b>Pumped storage schemes<sup>8</sup> (2)</b>			1 400	1 400	–	–	–
Drakensberg	Bergville	4 × 250	1 000	1 000	–	–	–
Palmiet	Grabouw	2 × 200	400	400	–	–	–
<b>Wind Energy (1)</b>							
Klipheuwel <sup>2</sup>	Klipheuwel	1 × 1,75; 1 × 0,66; 1 × 0,75	3	–	–	–	3
<b>Nuclear power station (1)</b>							
Koeberg <sup>3</sup>	Cape Town	2 × 965	1 930	1 800	–	–	–
<b>Total power station capacities (27)</b>			43 037	38 744	15	2 200	64

<sup>1</sup> Difference between nominal and net maximum capacity reflects auxiliary power consumption and reduced capacity caused by age of plant and/or low coal quality.

<sup>2</sup> Operational but not included for capacity management purposes.

<sup>3</sup> Base-load station.

<sup>4</sup> In long-term reserve storage (mothballed), but currently being returned to service.

<sup>5</sup> Dry-cooled unit specifications are based on design back-pressure and ambient air temperature.

<sup>6</sup> Stations used for peaking or emergency supplies.

<sup>7</sup> Use restricted to peaking, emergencies and availability of water in Gariiep and Vanderkloof dams.

<sup>8</sup> Pumped storage facilities are net users of electricity. Water is pumped during off-peak periods so that electricity can be generated during peak periods.

<sup>9</sup> Two units uprated in the Arnot capacity increase project.

<sup>10</sup> Most of Camden units have been derated.

<sup>11</sup> After performance test, rating finalised at 1 49MW per unit.

### 3. Environmental implications of using or saving one kilowatt-hour of electricity<sup>1</sup>

	Factor <sup>2</sup>	If electricity consumption is measured in:			
		kWh	MWh	GWh	TWh
Coal use	0,56	kilogram	ton	thousand tons (kt)	million tons
Water use <sup>3</sup>	1,44	litre	kilolitre	megalitre	thousand megalitres
Ash produced	161	gram	kilogram	ton	thousand tons (kt)
Particulate emissions	0,23	gram	kilogram	ton	thousand tons (kt)
CO <sub>2</sub> emissions <sup>4</sup>	1,00 <sup>5</sup>	kilogram	ton	thousand tons (kt)	million tons
SO <sub>x</sub> emissions <sup>4</sup>	8,69	gram	kilogram	ton	thousand tons (kt)
NO <sub>x</sub> emissions <sup>4</sup>	4,39	gram	kilogram	ton	thousand tons (kt)

Use of table: Multiply electricity consumption or saving by the relevant factor to determine the environmental implication.

<i>Example 1:</i>	Used 90kWh of electricity
	Water consumption: $90 \times 1,44 = 129,60$
	Therefore 129,60 litres of water used
<i>Example 2:</i>	Used 90GWh of electricity
	CO <sub>2</sub> emissions $90 \times 1,00 = 90,00$
	Therefore 90,00 thousand tons emitted

<sup>1</sup> Figures are calculated based on total energy sold by Eskom. Further information can be obtained through the Eskom environmental helpline. Contact details appear on back cover.

<sup>2</sup> Figures represent the 12-month period from 1 April 2007 to 31 March 2008.

<sup>3</sup> Volume of water consumed per unit of generated power sent out, excluding rain and mine water used.

<sup>4</sup> Calculated annual figures based on coal characteristics and power station design parameters, excluding the gas turbine power stations.

<sup>5</sup> Represents the Eskom average CO<sub>2</sub> figure. We have calculated the carbon emission factor to be 1,2kg/kWh in accordance with the clean development mechanism (CDM) approved consolidated methodology 0002. The methodology can be found on the official CDM website (<http://cdm.unfccc.int>).

### 4. Transmission and distribution equipment in service at 31 March 2008

	2008	2007
<b>Power lines</b>		
Transmission power lines (km) <sup>1</sup>	28 099	27 619
765kV	1 153	1 153
533kV DC (monopolar)	1 035	1 035
400kV	16 191	15 711 <sup>2</sup>
275kV	7 346	7 346 <sup>2</sup>
220kV	1 336	1 336
132kV	1 038	1 038
Distribution power lines (km)	44 680	44 044
165 – 132kV	23 296	22 797
88 – 33kV	21 384	21 247
Reticulation power lines (km)		
22kV and lower	293 424	288 040
<b>Total all power lines (km)</b>	<b>366 203</b>	<b>359 703</b>
<b>Cables (km)</b>	<b>9 921</b>	<b>8 622</b>
165 – 132kV	170	164
22kV and lower	9 751	8 458
<b>Total transformer capacity (MVA)</b>	<b>215 696</b>	<b>210 929</b>
Transmission (MVA) <sup>3</sup>	122 100	120 745 <sup>4</sup>
Distribution and reticulation (MVA)	93 596	90 184
<b>Total transformers (number)</b>	<b>324 435</b>	<b>314 511</b>
Transmission (number)	385	381 <sup>4</sup>
Distribution and reticulation (number)	324 050	314 130

<sup>1</sup> Transmission line lengths as per Geographic Information System distances.

<sup>2</sup> Transmission line lengths for 2007 have been restated to eliminate the duplicate reporting of changes.

<sup>3</sup> Transformers rated  $\geq 30\text{MVA}$  and primary voltage  $\geq 132\text{kV}$ .

<sup>4</sup> Transformers for 2007 have been restated to record transformers installed but not reported.

## Tables continued

### 5. Sale of electricity and revenue per category of customer

Category	Customers <sup>1</sup>		Sold		Revenue	
	2008 Number	2007 Number	2008 GWh	2007 GWh	2008 Rm	2007 Rm
Redistributors	766	760	89 941	86 908	16 382	14 670
Residential <sup>2</sup>	4 016 689	3 829 986	10 423	9 736	4 645	4 064
Commercial	46 496	45 233	8 373	7 842	2 081	1 843
Industrial	2 966	2 955	61 510	59 823	10 629	9 578
Mining	1 153	1 127	32 373	32 421	5 825	5 479
Agricultural	83 722	82 583	4 848	4 732	1 741	1 594
Traction	510	510	2 990	3 069	697	646
International						
Utilities	7	7	4 553	4 350	860	666
End users across the border	3	3	9 355	9 239	1 111	849
	<b>4 152 312</b>	<b>3 963 164</b>	<b>224 366</b>	<b>218 120</b>	<b>43 971</b>	<b>39 389<sup>3</sup></b>

<sup>1</sup> Customer numbers have been revised to take into account disconnected customers and homes that no longer exist as a result of floods and other reasons.

<sup>2</sup> Prepayments and public lighting included under residential.

<sup>3</sup> R45 million revenue, resulting from testing in 2007 at Camden power station, was capitalised to plant.

