1923-2013

A proud heritage

Eskom | Powering your world

Powering your world
towards socio-economic development
and transformation

Eskom | Powering your world 1923-2013

Mr Malusi Gigaba,
Minister of Public Enterprises (MP)

REPUBLIC OF SOUTH AFRICA

Message by the Minister of Public Enterprises, Mr Malusi Gigaba, on the occasion of Eskom's celebration of its 90th anniversary on 1 March 2013

Since its inception as the Electricity Supply Commission (Escom) in 1923, Eskom as it is currently known, has been instrumental in the industrialisation of the country and a key driver of economic growth.

Eskom was established not only to provide a reliable electricity supply to households, but was also intended to stimulate and supply key economic sectors such as mining and the manufacturing sectors. There is no doubt that the country's mining industry was built on the back of Eskom's supply of reliable electricity.

Eskom has come a long way since 1923, however, when it was meant to ensure security of electricity supply to a small minority of our society, while the majority of this country's people were without basic access to cheap, reliable and efficient electricity. In the 1990s, it was apparent that the new democratic dispensation necessitated that Eskom must change and become an inclusive state-owned company, whose mandate was to ensure security of electricity supply to all the citizens of the country and to industry.

The mandate was made even more urgent, as the new Constitution of the democratic Republic of South Africa obliged the State and Eskom to ensure universal access to electricity as a basic right for all South Africans. Since then, the new democratic Government has moved efficiently to ensure access to electricity to the majority of its citizens by implementing a national electrification programme.

Statistics from Census 2011 indicate that 84% of the 51,7 million people in South Africa now have access to electricity. In June 2012 we were in the Eastern Cape to celebrate the 4-millionth household to be connected to the electricity grid since the national electrification programme started in 1991. This is an important milestone, especially given the fact that only 58% of households had access to electricity in 1996 and the figure in 2001 was 70%. This shows a significant improvement and progress with the Government's commitment to achieving universal access to electricity for every citizen of our country.

The Department of Public Enterprises as the shareholder representative on behalf of the South African Government provides oversight management of eight state-owned companies, including Eskom. The Government recently announced the Infrastructure Development Plan that will play a critical role in ensuring that we provide the economic and social infrastructure that will move the economy to a higher trajectory. The Infrastructure Development Plan, at its core, is meant to ensure that South Africa keeps pace with its developmental objective of growing the economy by at least six per cent in the next 20 years. The plan will ensure that Government addresses the infrastructure backlog of about R1 trillion that is currently impeding growth.

The Infrastructure Development Plan will ensure that we upgrade the electricity transmission network and our ports and also expand the country's railway network thus ensuring that we meet the supply capacity requirements of the expected increase in demand.

The state-owned companies will play a central role in the implementation of the infrastructure plan, as the developmental agenda of the State demands that the State should play an active role in the economy of the country to ensure that the majority of South Africans have universal access to reliable services such as electricity, water, sanitation, broadband communication and job opportunities.

As a state-owned company, Eskom has a greater role to play than only ensuring security in the supply of electricity. As one of the key entities in our portfolio, Eskom is engaged in transforming the economic landscape of our country through its Build Programme of investing in new generation capacity and the transmission system. Through the process of generating new capacity for the country, as shareholder representative, we will however ensure that through Eskom's procurement processes we create new supplier industries and new industrialists.

At a social level, Eskom, through the Eskom Development Foundation, takes initiatives for corporate social investment (CSI) to improve the quality of life in communities where Eskom operates and in the communities around its capacity expansion projects. Examples are the building of classrooms for rural schools, the creation of a contractor training academy, the provision of educator training, the supply of science and mathematics equipment and other resources.

Furthermore, thousands of engineers and artisans are also being trained by Eskom and its contractors at the various Eskom construction sites; this means that thousands of people will have employable skills when the construction projects have been completed. In addition, these capital projects will have a significant economic impact on the surrounding communities, especially with their contribution to the gross domestic product of these areas. In the next 20 years of the infrastructure investment programme, the country will have built completely new cities such as Lephalale and Waterberg, thus providing new job opportunities in these formerly rural and semi-urban areas.

On this occasion, we would like to applaud Eskom on this magnificent milestone and to commend the company for continuing to reaffirm, through its endeavours to show the importance of state ownership and the role it can play beyond its business mandates in supporting the Government's social development agenda.

We would like to thank all electricity users – commercial, mining, industrial and residential – for having supported and continuing to be part of our public awareness campaign, 49M, which is a clarion call to all South Africans to do their part in saving electricity and using it efficiently. We are not out of the woods yet. It will require a concerted effort from all South Africans over the next few years to use electricity efficiently and effectively to ensure we are able to maintain a secure supply.

Minister of Public Enterprises (MP), Mr Malusi Gigaba,

Mr Zola Tsotsi,
Chairman

Chairman's message

Eskom's 90-year history is inextricably intertwined with the story of South Africa's rise to become the industrialised economic powerhouse of Africa. We have powered, and continue to power, this great nation by supplying the electricity that drives manufacturing, mining and agriculture.

However, electricity is not merely about economics, it is also about people. The world is fast realising that poverty will only be eradicated when everyone has access to secure, clean and safe electricity. Eskom is proud to have played a crucial role in the South African triumph of electricity provision. More than 4,2 million South African households have been connected since 1991, and the vast majority of our people now have electricity in their homes. We will continue to support government by ensuring that South Africa achieves universal access to electricity in the near future.

Electricity is the lifeblood of a nation, and a strong and sustainable electricity industry is a necessary condition for economic development and social transformation. Eskom will continue to play its part in consolidating and growing South Africa's electricity industry, ensuring that future generations of South Africans enjoy affordable, reliable and sustainable electricity.

Yet Eskom's objectives go beyond the supply of electricity. As a State-Owned Company (SOC), our performance is also measured by the value we add to the lives of South Africans. It is incumbent on us to help transform South Africa into a more equitable society. Our developmental responsibilities include: supporting local industries; skills development; training; job creation; and uplifting poor communities through corporate social investment.

This 90-year milestone is cause for reflection: we have a massive task ahead of us. To fulfill that task we have committed ourselves to a growth strategy that demands a shift in performance. As always, our incentive is service to our country. As our purpose so elegantly puts it, we will continue "to provide sustainable electricity solutions to grow the economy and improve the quality of life of people in South Africa and in the region".

Mr Brian Dames,
Chief Executive

Chief Executive's message

This book tells the story of Eskom and how it evolved into one of the world's biggest power utilities. Over 90 years Eskom has proved itself to be a vital contributor to South Africa's heritage. The milestone marks the end of a chapter but the story of contribution continues.

On one level the Eskom story is about power stations, transmission lines, and distribution systems; on another it's about people. It's about the tens of thousands of South Africans who served Eskom with dedication, resilience and passion. At the heart of our story is the spirit of service: pride that goes with being part of Eskom; sacrifice to keep South Africa's electricity system up and running.

We are now in a growth phase for Eskom, and growth is challenging. Over the past 90 years we have shown that we relish a challenge; Eskom will rise to the occasion and serve this nation with distinction. We take inspiration from our past and we salute those who have worked so hard to build a power utility that South Africans can be proud of.

As custodians of the Eskom legacy, this book reminds us that our decisions and actions will be recorded for future generations to appraise. It is them whom we serve and nothing less than our complete dedication will do.

1923 to 1933

Eskom's establishment and consolidation

On the 1st of March 1923, Eskom was established, known then as the Electricity Supply Commission (ESCOM). ESCOM was responsible for establishing and maintaining electricity supply undertakings, on a regional basis, for the whole of South Africa. Electricity was to be supplied efficiently, cheaply and abundantly to government departments, railways and harbours, municipalities, and industry.

The forces of change

It had become evident in the early 1920s that a consolidated electricity supply industry was required to serve the unprecedented growth which South Africa was to experience in the third decade of the 20th Century, and in 1922 the Electricity Act was passed by Parliament leading to the establishment of ESCOM the following year. This proved vital in the period of expansion that followed.

The mining industry had been the foundation of South Africa's economic growth and necessitated the development of other industries to support it and the growing workforce on which it relied. On the Witwatersrand (known today as Gauteng) and in other centres across the country, the manufacturing industry emerged.

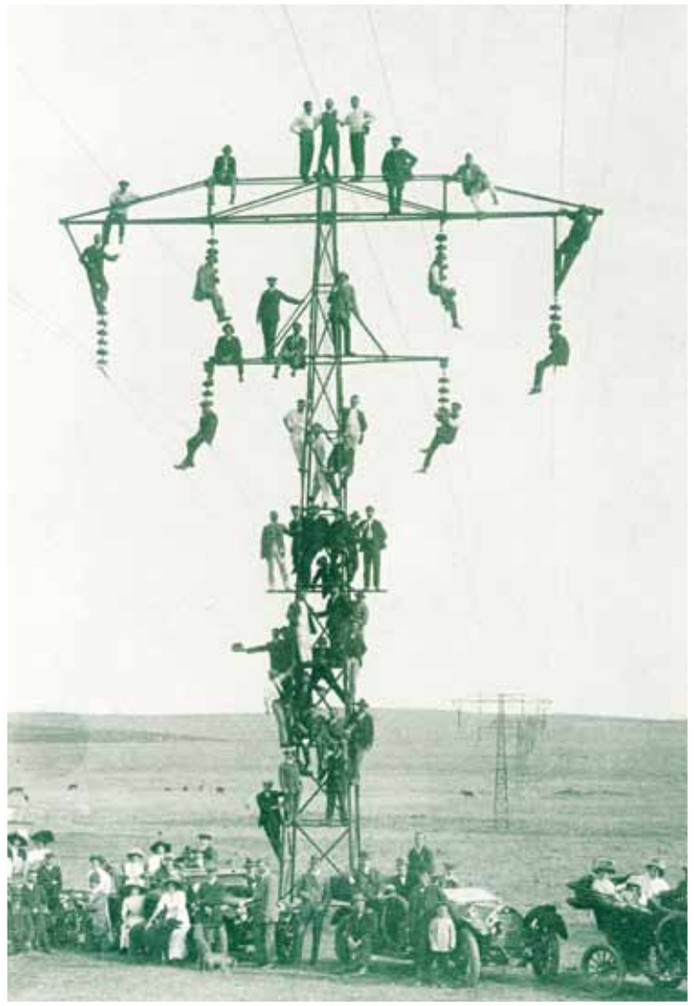
Factories were built to supply the mines and towns; harbours to handle the import of manufactured goods and the export of minerals and agricultural produce. New railway networks served the industrial centres and linked them to the ports.

Cities and towns grew rapidly with a massive migration of people from the rural areas to the burgeoning urban and industrial conurbations. The retail, commercial and transport sectors developed rapidly too.

Electricity provided the power to grow.

First Chairman of ESCOM, Dr Hendrik J van der Bijl

ESCOM's first headquarters, Hofman's Building, Johannesburg



Workers celebrate the completion of a transmission line

Electricity - first light, first tasks

Independent power producers were responsible for the early development of the electricity supply industry in South Africa, with Kimberley switching on electric street lights in September 1882. The first small power stations were built in the late 1890s to supply electricity to the gold mining industry and by 1915 four thermal power stations had been built to meet the increasing demand from the mines and new mining towns.

When ESCOM was established in 1923, one of its tasks was to take over and consolidate many of the existing electricity supply undertakings. Another was to foresee future requirements, to plan accordingly and to build new power stations, as well as expand existing ones, in order to meet the growing demand for this vital commodity, electricity.

Expansion despite depression

The final years of ESCOM's first decade saw South Africa's economy affected by the Great Depression which began in October 1929 with the Wall Street Crash when share prices plummeted dramatically on the New York Stock Exchange. Factory closures and rising unemployment lowered electricity demand from the industrial, commercial and retail sectors, as well from urban areas. However, with the price of gold still rising, the gold mining industry continued to expand and ESCOM was required to sustain its growth path to meet a demand for electricity that was still on an upward curve.

Building the blueprint of a legacy

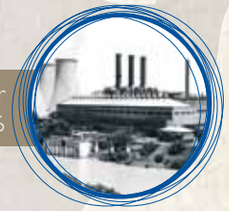
The power stations commissioned by ESCOM in the 1920s were in locations as far apart as the Western Cape (Salt River Power Station), Mpumalanga (Sabie River Gorge Power Station) and KwaZulu Natal (Colenso Power Station). These stood as geographical testimony to the fact that South Africa's development was countrywide and not confined to the mining regions.

The scale and location of power stations such as Witbank and Colenso demonstrated the technological and logistical development of the electricity industry, placing these new power-producing giants close to the sources of primary energy. Sabie River Gorge Power Station was a hydro-electric plant, showing the early commitment to renewable resources and a diverse energy mix that Eskom still has today.

Congella Power Station

Sabie River Gorge
Power Station 1927

Witbank Power
Station 1926



Colenso Power
Station 1926

Congella Power
Station 1928

Salt River Power
Station 1928

ESCOM House, officially opened in 1937

The main entrance hall of ESCOM House

Chairman's private dining room

Hall of achievement from the mezzanine showing the upper exhibition bays

1933 to 1943

ESCOM rises to the challenge

ESCOM's second decade began with continuing expansion due to renewed growth of the South African economy. This was precipitated by South Africa abandoning the Gold Standard in December 1932, leading to a sharp rise in the price of gold.

The mining and industrial growth created a much greater demand for electricity. In addition, urban development required electricity, as did the plans to electrify the suburban railways of the Rand and the line from Johannesburg to Pretoria. By 1936/37 the demand for electricity from ESCOM had increased by 50%.

Growing capacity and reach

In order to meet the ever-increasing demand, new power stations were commissioned and extensions were added to all existing ESCOM power stations. Salt River Power Station more than doubled its size when two 20MW sets were added. In 1935 a third set brought the power station's capacity to 90MW, introducing high-voltage generation to South Africa with 33kV lines carrying power to Darling, Malmesbury and Wellington, through Worcester to the Hex River Valley.

Construction had also begun on transmission lines and substations in the Rand Extension Undertaking, a 29,000 square kilometre area stretching from Delmas to Klerksdorp.

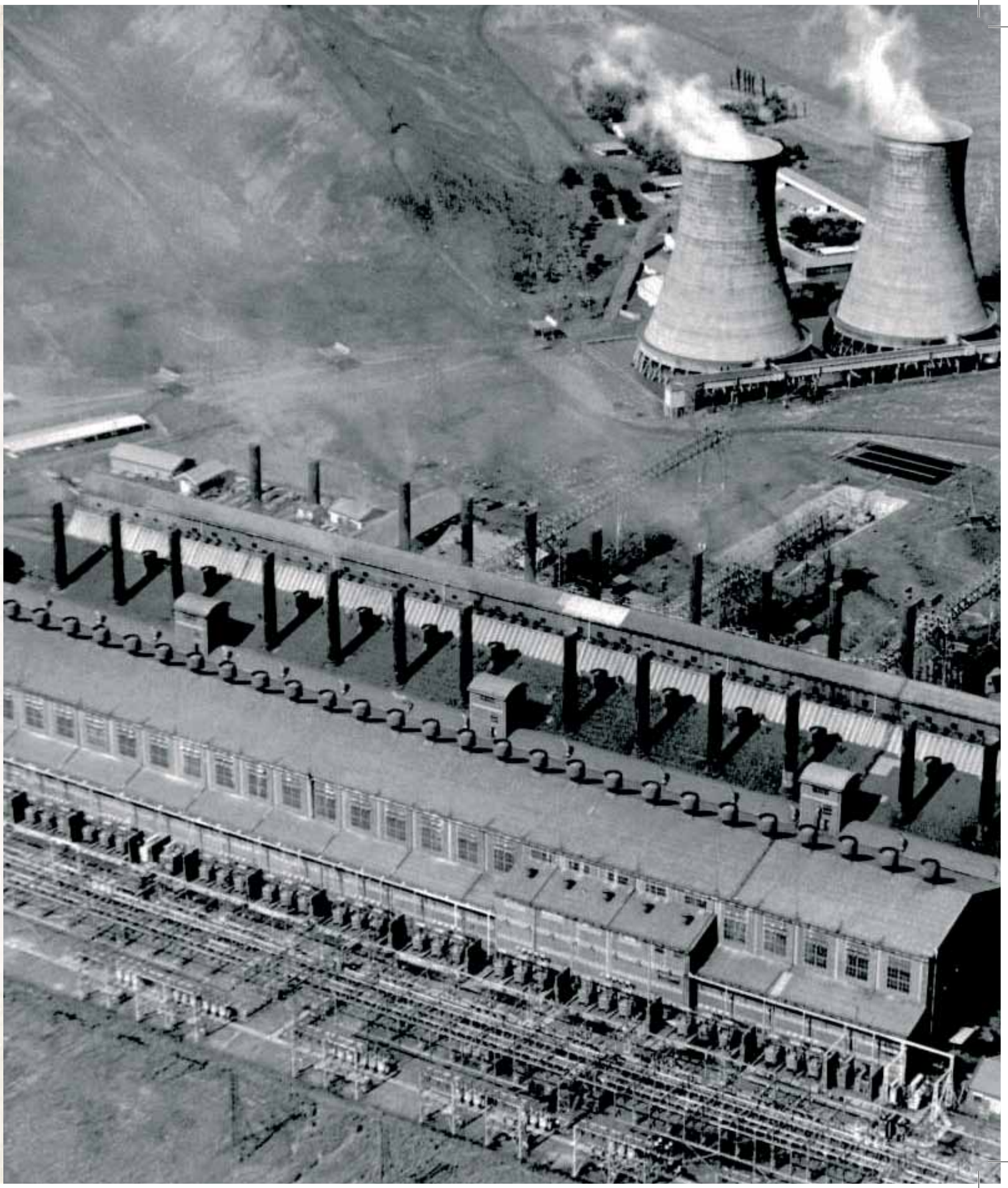
The heights of success

ESCOM's success in the 1930s was evident in the construction and opening of ESCOM House in Johannesburg. Officially opened in 1937, it was the Electricity Supply Commission's new headquarters and, at twenty-one storeys, it was the tallest building in South Africa.

Pioneering power station technology

Construction of the new Klip Power Station began in 1934 adjacent to Klip River and close to the Springfield coal mine, to lower the cost of producing electricity. This was the first power station in South Africa to use cooling towers which were specifically developed by ESCOM to cut down on the use of water. It came into operation in 1940 and was the biggest power station in the Southern Hemisphere.

In 1938 construction began on Vaal Power Station which also featured the cooling towers pioneered by Klip Power Station.



Klip Power Station after completion
Far right: Reinforced concrete pylons

The impact of war

Whereas the first years of the decade for ESCOM were defined by expansion, the years from 1939 to 1943 were defined more by contraction as the outbreak of the Second World War affected economies worldwide.

During the war years the demand for electricity slowed considerably, but ESCOM still faced a challenge to keep the country supplied with electricity as fuel and spare parts had become scarce. Further exacerbating the situation, the conditions of war prevented the delivery to Vaal Power Station of three radial-flow generating sets which had been ordered from Sweden, and in 1943 a ship carrying a turbo-generator set destined for Congella Power Station was torpedoed.

Rising to the challenge required ESCOM to seek cooperation with the municipal power stations and other small generators in the country that were still independent. Despite the supply of steel being insufficient to use for transmission pylons, ESCOM's response was innovative, designing and building reinforced concrete pylons to support high voltage lines.

1943 to 1953

From difficulty to development

Emerging from the difficult first years of the decade, ESCOM responded to the challenge of increasing demand and then laid the foundation for major growth in the decade to come. ESCOM acquired power stations, added capacity to others and expanded, taking over the extensive assets of privately-owned VFP which had been founded in 1906 as the Victoria Falls Power Company.

A new growth impetus

During the early years of World War II the demand for electricity declined. It increased again in the final stages of the war when industrial growth began a resurgence in South Africa and new gold mines in the Free State were developed. While mining continued to be the most important industry, providing two thirds of South Africa's revenues and three quarters of its export earnings, manufacturing had begun to grow enormously to meet wartime demands.

Passing the baton

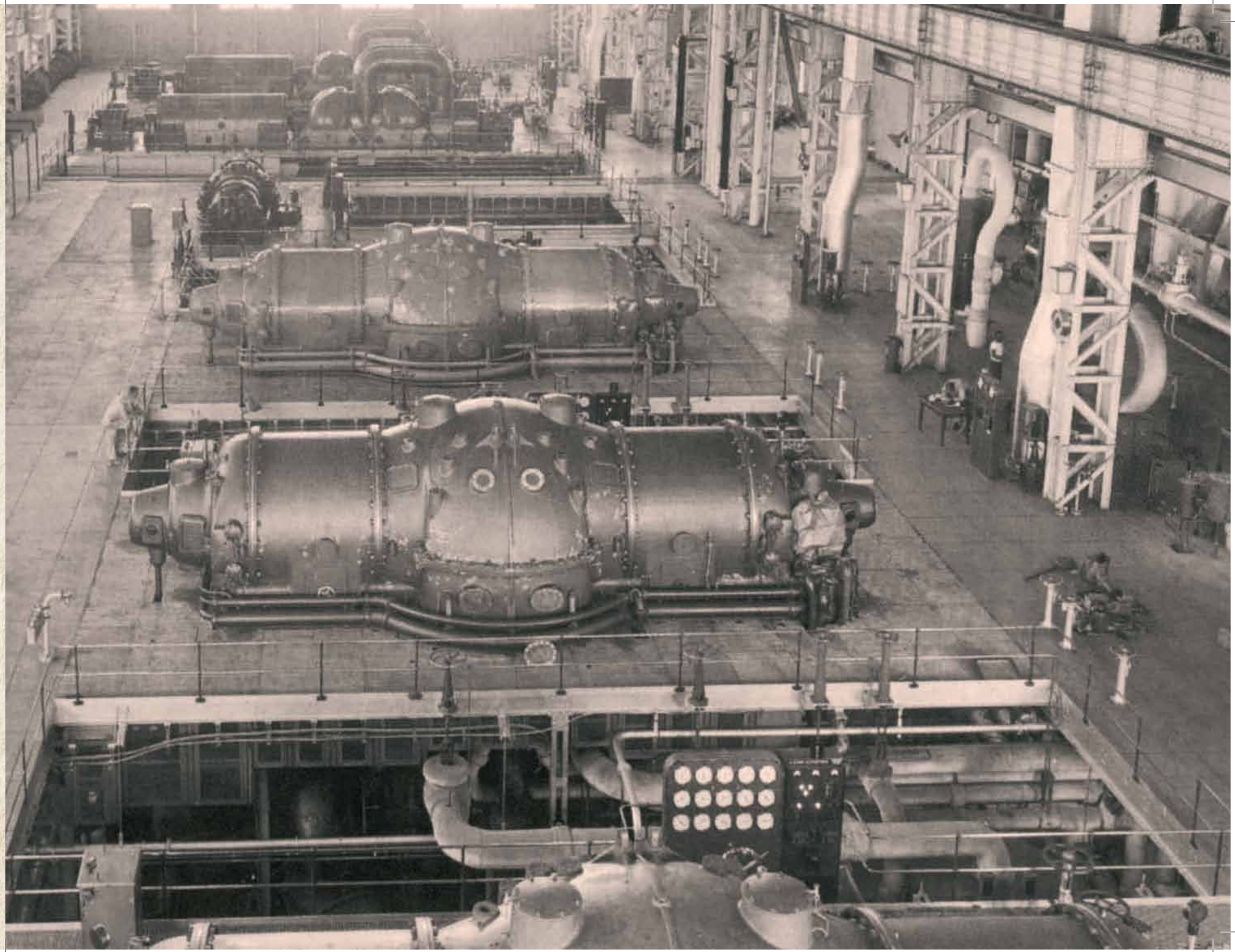
ESCOM's founding Chairman, Dr HJ van der Bijl, passed on in December 1948 and the baton of leadership of South Africa's public electricity utility was handed to Mr Albert Jacobs who served until his retirement in 1952.

At first it was difficult for ESCOM to meet rising electricity demand. The war had impacted on production and supply worldwide and there was a shortage of generation and distribution equipment. It delayed the building of new power stations and made it difficult to maintain existing power stations and other installations.

The shortages continued in the years immediately following the war but the commissioning of Vaal Power Station in 1945, supplying electricity to the burgeoning Free State gold mines, heralded recovery and a new growth impetus in South Africa's economy.

Chairman of ESCOM, Mr Albert Jacobs

Facing page: A view of Vaal Power Station's giant turbines



Foundations for the future

As the 1950s began, the demand for electricity was on a steep upward curve and South Africa was on the threshold of a period of unprecedented growth. Local consumer demand was rising to new highs and, with strong government support, agriculture and manufacturing were expanding. Electric train services were already operating over 581 route miles of South African railways, with a further 322 miles under construction.

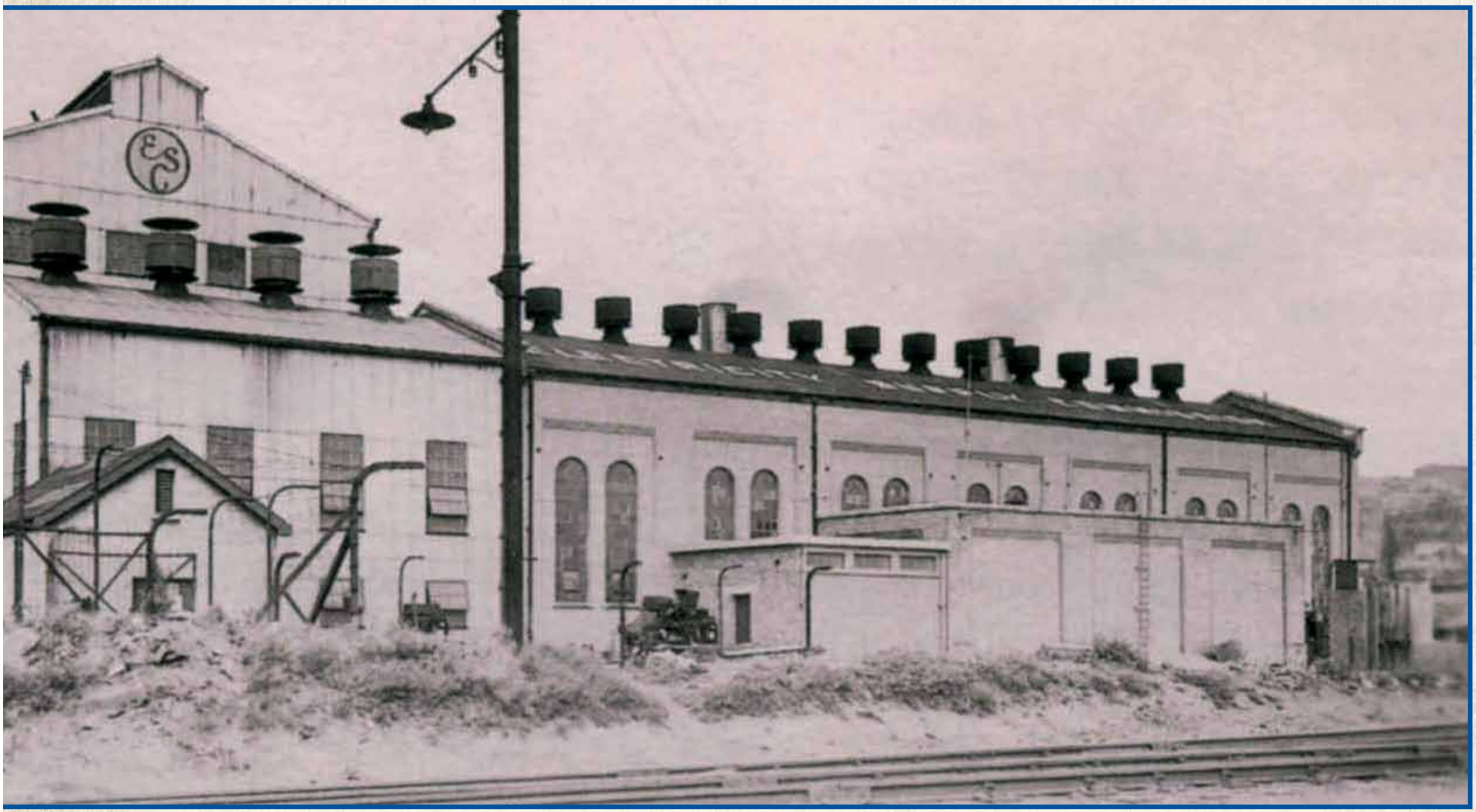
ESCOM had seven new power stations on order or in advanced planning stages, and the Rural Electrification Department was established to provide power to small consumers outside municipal supply areas. Between 1945 and 1955 the capacity of ESCOM's power stations more than doubled and electricity sales rose to 5 billion units. It was estimated that over the next ten years capacity would have to be doubled again. This could only be achieved by building a new generation of larger power stations.

As ESCOM's third decade of serving South Africa drew to a close, Dr JT Hattingh succeeded Mr Albert Jacobs as the power utility's new Chairman.

Chairman of ESCOM,
Dr JT Hattingh

Consolidating the electricity supply industry

ESCOM's growth had continued incrementally during the decade, Port Shepstone Power Station being commissioned in 1944, Vaal in 1945 and Congella B in 1946. In 1947 ESCOM took over West Bank Power Station, the De Beers Power Station in Kimberley and purchased the King William's Town and Alice municipal undertakings. The acquisition of VFP in 1948, however, was a much larger step. It was, at the time, the country's biggest merger, almost quadrupling ESCOM's staff component and expanding its asset base significantly.



East London's West Bank Power Station. By the late 1940s ESCOM had increased its capacity to 117MW

ESCOM Centre spearheaded the development of Braamfontein as a new commercial and high-density residential hub north of the Johannesburg CBD

1953 to 1963

ESCOM becomes South Africa's powerhouse

This was the decade in which ESCOM became the powerhouse for the development of the national economy. South Africa was beginning its biggest period of industrial growth and by 1955 the generation capacity of ESCOM's power stations had more than doubled over a ten-year period, with further growth still under way. ESCOM had come of age and played a key and strategic role in South Africa's growth.

A modern economy emerges

The 1950s saw the diversification of South Africa's economy with huge growth, not only in the mining but also in the manufacturing sectors. Local textile, pulp and paper industries were established. South Africa also began to refine oil and produce fertilisers, pharmaceuticals, chemicals and armaments. Sasol began producing oil from coal, as well as other related products.

The coastal cities were growing fast because many new and expanding industries were located there. The automotive industry had come to South Africa. The clothing, footwear and textile industries grew rapidly in the coastal areas, as did the food and beverages industries. South Africa's food export industry grew, requiring massive new warehouses and cold-storage facilities.

On the Witwatersrand (now Gauteng) and in the Free State the mining industry continued to thrive. On the East Rand (now Ekurhuleni) the metal industries were producing products for the mines, factories and construction industries.

Cities, suburbs and townships grew rapidly as more and more people moved to the urban and industrial areas to seek employment. The retail and service industries grew, while transport services and infrastructure expanded. Railways and harbours grew and new airports were built as air transport also became more affordable.

Providing the power for all the growth, ESCOM built new power stations, substations and transmission and distribution systems.
In 1958 ESCOM moved into its new headquarters in Braamfontein, ESCOM Centre. At the close of the decade, the utility's new logo was introduced.

Building a high-powered utility

In the 1950s ESCOM built a series of larger power stations, strategically located to serve the needs of South Africa's new and burgeoning modern economy.

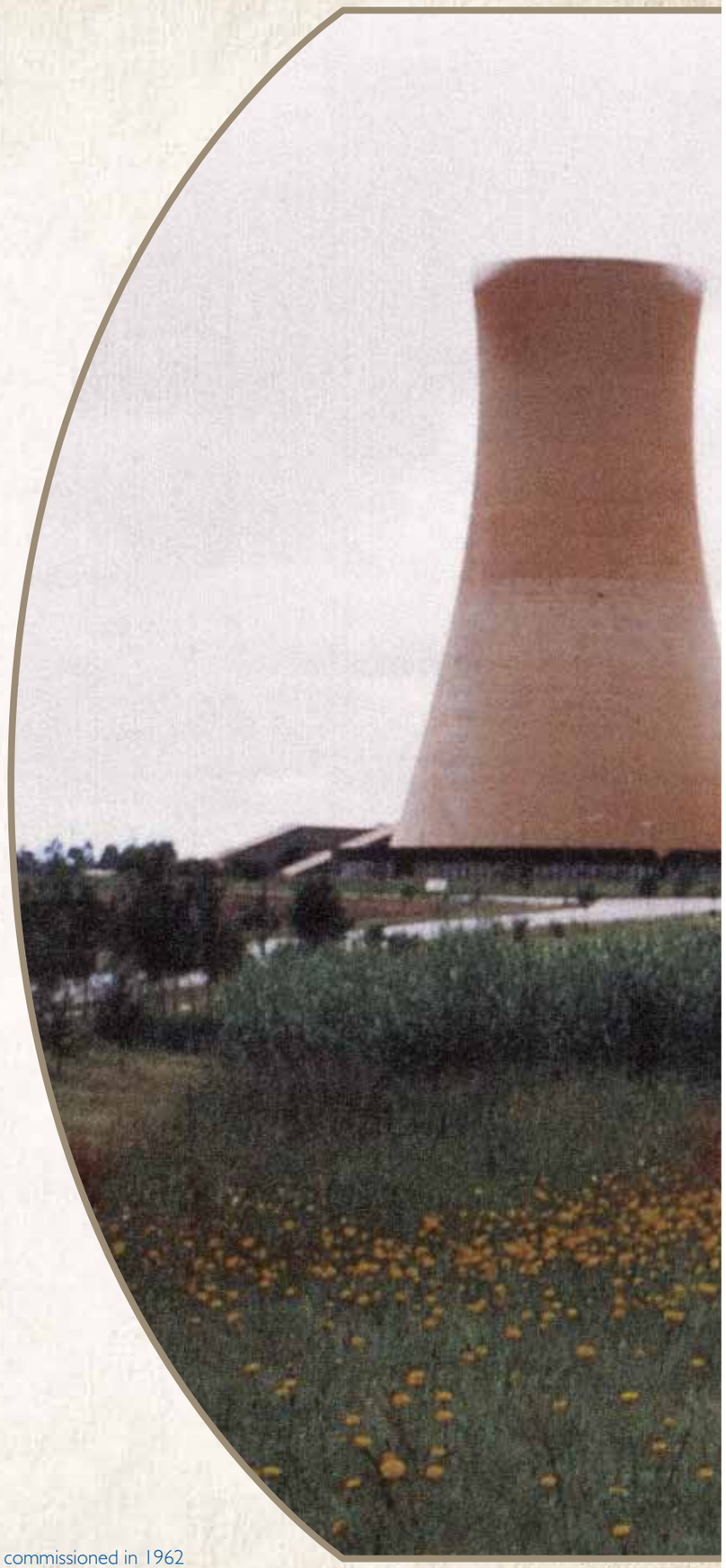
Taaibos was the first of these power stations to be commissioned, going into commercial service in 1954, followed by Wilge. 1959 saw Highveld, ESCOM's largest power station at the time, come into commercial service. Ingagane, with a greater installed capacity than Highveld, was commissioned in 1963, but it was Komati - the first of the very large power stations to be built in Mpumalanga (then called Eastern Transvaal) - that paved the way for the generation of giants to come. Commissioned in 1962, it had an installed capacity of 1 000MW, double that of Ingagane, and was a result of planning in the 1950s to provide for the next decade's expected growth.

The transmission systems were also expanded and the company developed much higher levels of technical and organisational expertise. Another significant development in the 1950s was the increase in sales of bulk electricity to municipal undertakings, which reflected not only the growth of municipal electricity undertakings but also the abandonment of expensive local generation by many municipalities.

By 1960 ESCOM's annual power sales had reached 16 billion units, showing an increase of 133% over a ten-year period. Generation plant capacity had increased by 130%, and R376 million had been spent on new power stations, transmission and distribution systems. ESCOM was generating almost 60% of the electricity produced on the African continent.

In the latter half of the decade, spearheaded by ESCOM, South Africa had begun to investigate the use of nuclear energy for power generation and, at the decade's close, Dr RL Straszacker was appointed as ESCOM's Chairman, taking office in 1963.

Chairman of ESCOM,
Dr RL Straszacker



Komati Power Station, commissioned in 1962

1963 to 1973

A giant arises

South Africa's economic growth was the second highest in the world, and was reflected in ESCOM's massive expansion.
A national power network was established, destined to link the huge new power stations rising in the north-east of the country to what was known at the time as the Cape Province undertaking. By the end of the decade the National Grid had been completed, with 25 000 km of power lines linking the country and providing a co-ordinated electricity supply. In global terms, ESCOM had become a giant in the electricity supply industry.

A networked national utility

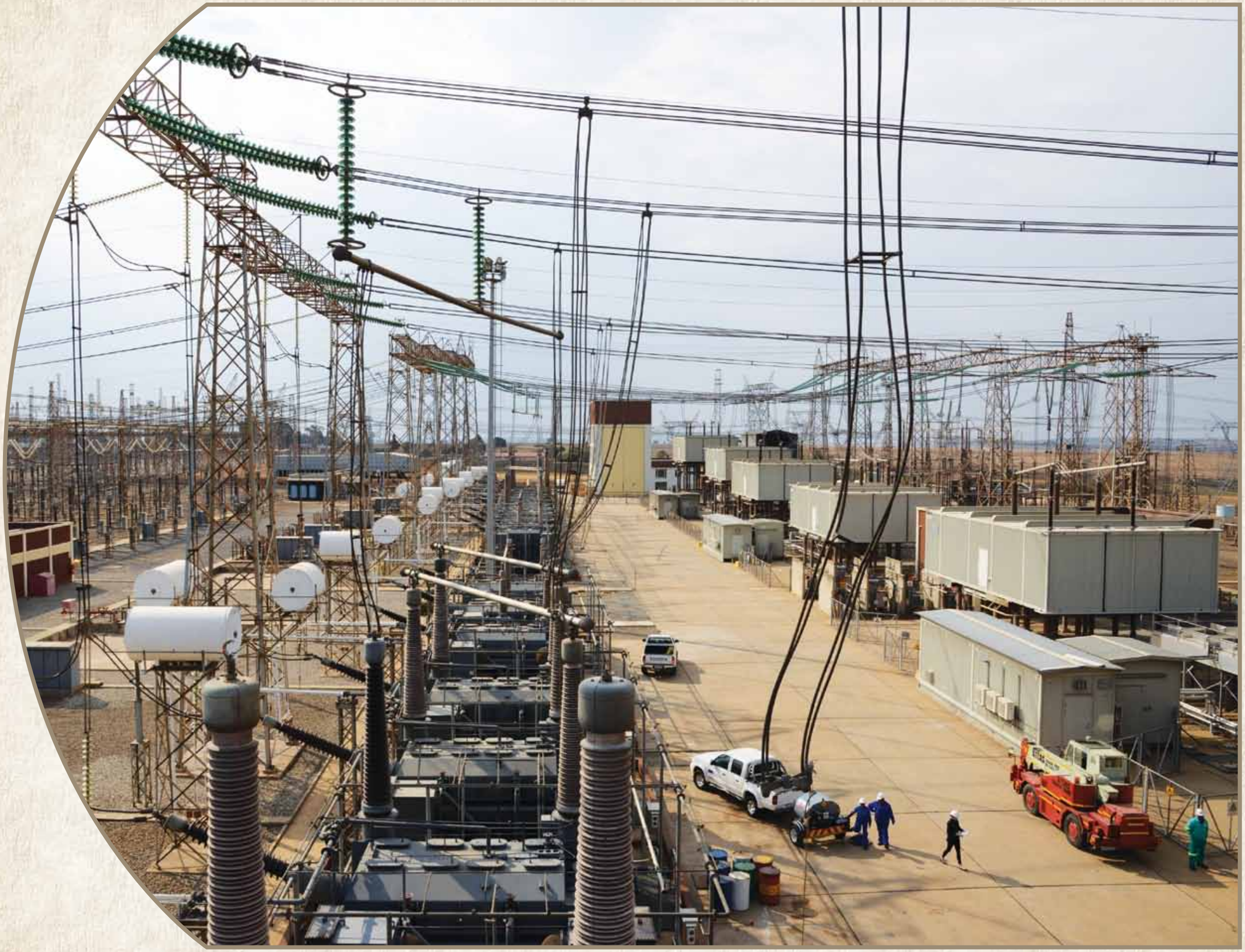
In South Africa it had become apparent, as demand for electricity increased, that it was more economically efficient to build large power stations close to the coal resources and to transport electricity via an integrated transmission network to where it was needed, and so the coalfields in the Highveld region of Mpumalanga became the new centre for electricity generation. Here, a new breed of power stations was born, with total installed capacities from between 1 000 to 2 100MW.

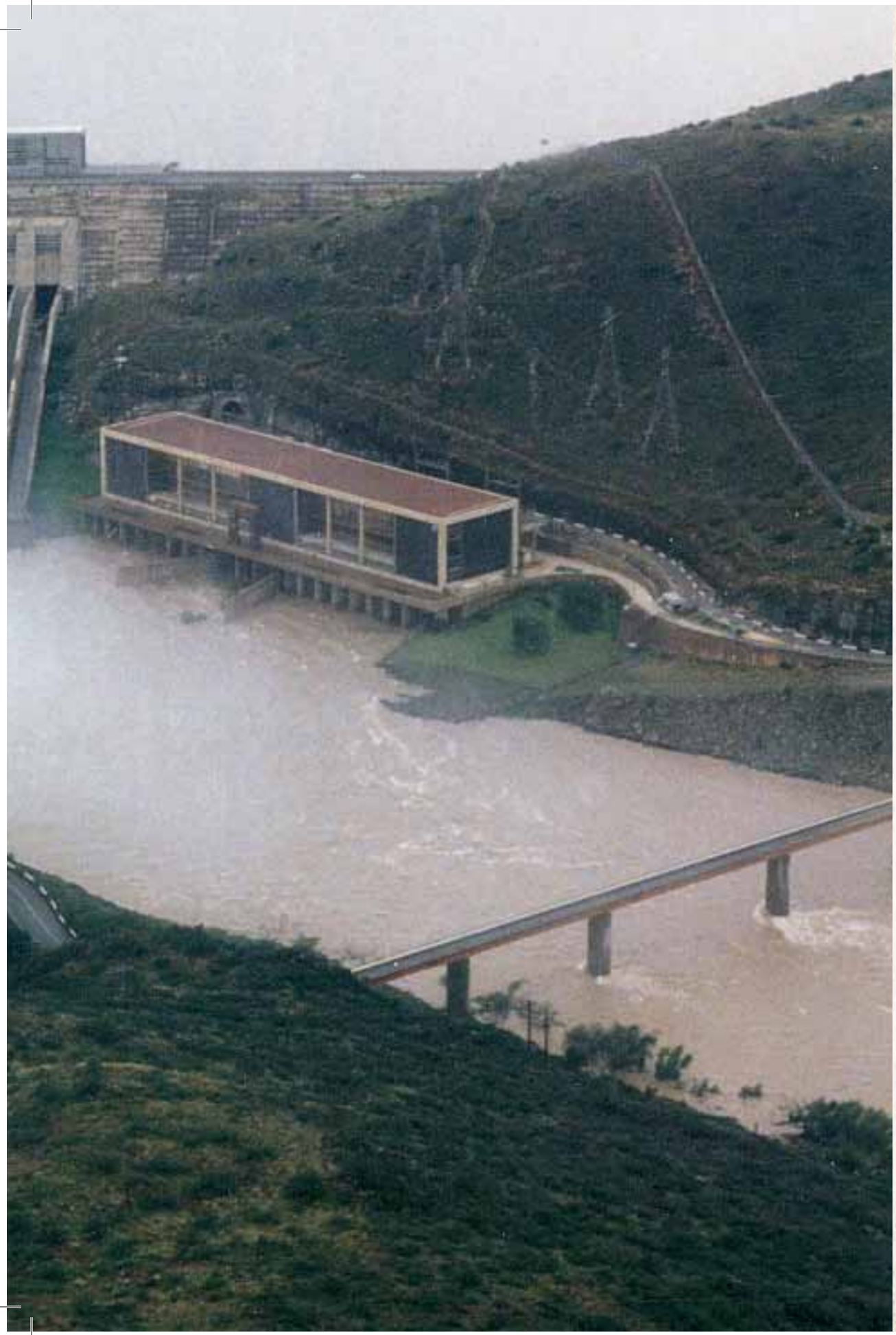
Komati had led the way in 1962, to be followed by Camden, Grootvlei, Hendrina and Arnot during the decade spanning 1963 to 1973. Of these, Komati, Grootvlei, Arnot and Camden still serve the national utility, having been brought back into service between 1999 and 2013.

This was the greatest concentration of generating capacity ever seen in South Africa, requiring the massive development of ESCOM's transmission system and the creation of the National Grid, supported by the establishment of the Central Generating Undertaking to pool generation.

Transmission technology had advanced to the point where long lines with voltages up to 44kV were feasible and more and more of ESCOM's new high-voltage transmission towers appeared as the high-voltage network advanced south in stages of up to 450 km at a time.

Facing page: A contemporary view of Apollo Substation, installed in 1973





Harnessing natural resources

The South African government's largest development project in this decade was the Orange River Scheme which included the construction of what is known today as the Gariep Dam. Here ESCOM built its largest hydro power station, Gariep, which began to contribute to ESCOM's high-voltage network in 1971. With a total capacity of 320MW, not only did Gariep Power Station prove of value in peak-load periods, but bringing it online was also instrumental in ESCOM establishing the high-voltage line linking the Cape Province to the power produced in the far north-east of the country.

Gariep Hydroelectric Power Station, situated below the Gariep Dam wall

1973 to 1983

Growth, change and challenges

By 1973, its 50th anniversary year, ESCOM had become a consolidated utility with a huge responsibility to the nation. ESCOM expanded as the demand for electricity continued to grow. However, as the decade progressed, there were new challenges related to generation and transmission, as well as ESCOM's future growth prospects. International pressure on South Africa to abandon apartheid had made it less certain that ESCOM would be able to secure loans for development in the decade to come. Change was in the air.

Growth at a cost

In the wake of the sharp increase in oil prices that impacted economies worldwide, South Africa's growth still continued, buoyed by soaring gold, steel, coal and uranium prices that were also affected by the international energy crisis. However, electricity prices in South Africa remained relatively stable and consumers increasingly turned to it as a cheap and convenient energy source. Maximum demand increased by 16.35% and over the entire decade was never below 9%.

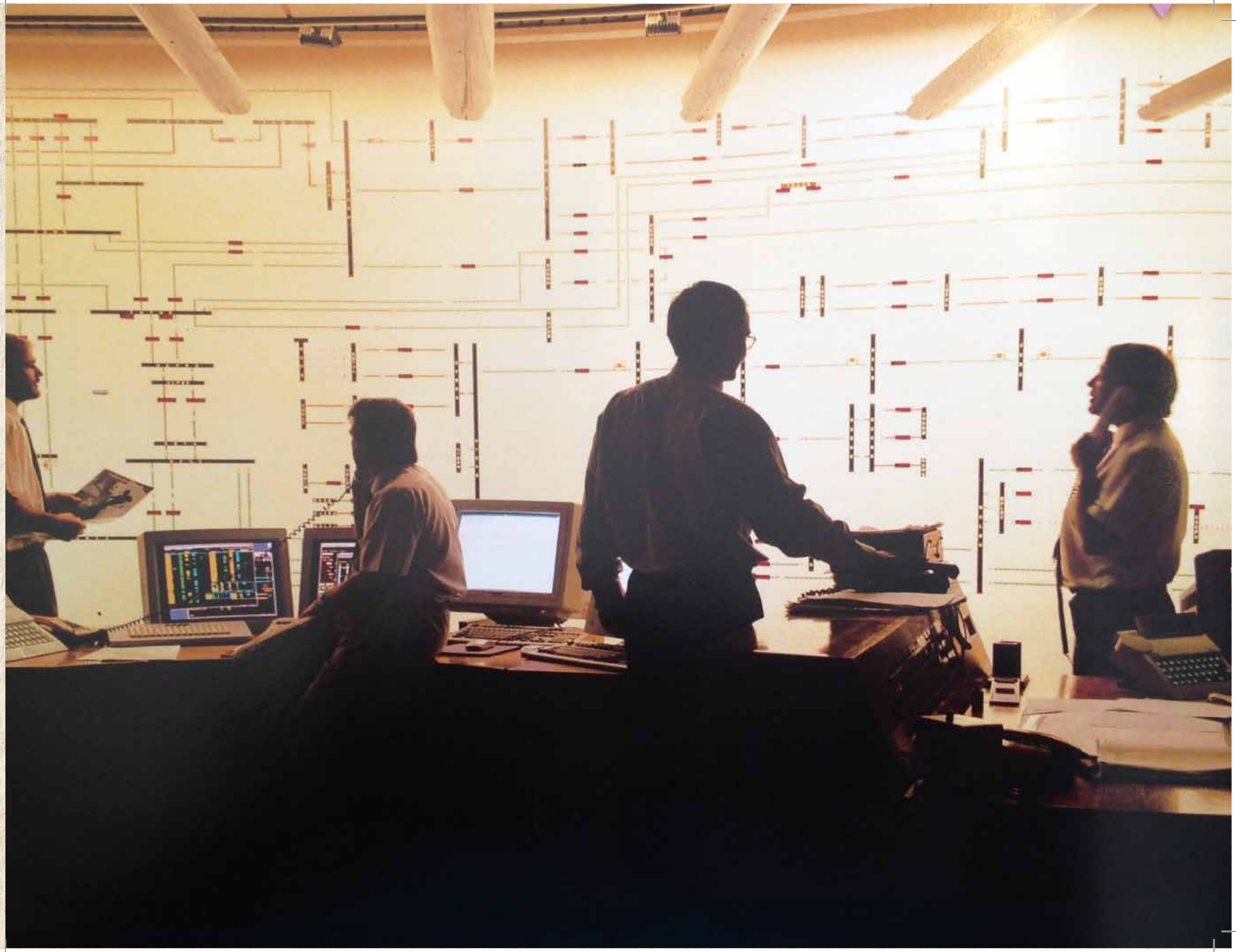
ESCOM had embarked on a programme that would add massive capacity to its fleet. The power stations Kriel, Matla and Duvha had the common feature of six identical units with tall boiler houses towering over the flat Mpumalanga landscape. Known as ESCOM's "six-pack power stations", they were among the largest in the world, with Matla and Duvha each having the installed capacity of 3 600MW. However, ESCOM had to deal with problems that included disintegrating fans, issues with boiler pressure and unacceptable levels of emissions.

Running a nationwide, interconnected system also presented new challenges. Previously, system problems had been confined to small areas and power could be restored quickly. Now, much larger areas were affected and it took far longer to restore power, as well as public confidence in the utility. Consumer opinion was further affected by the sudden and steep rise in electricity prices which ESCOM implemented in an effort to address its own funding crisis.

The year 1977 saw the opening of the utility's new head office, the newly-built Megawatt Park, north of Johannesburg, and in 1980, Mr Jan H Smith succeeded Dr Straszacker as ESCOM's new Chairman.

Chairman of ESCOM, Mr Jan H. Smith

Facing page: National Control Centre, Simmerpan



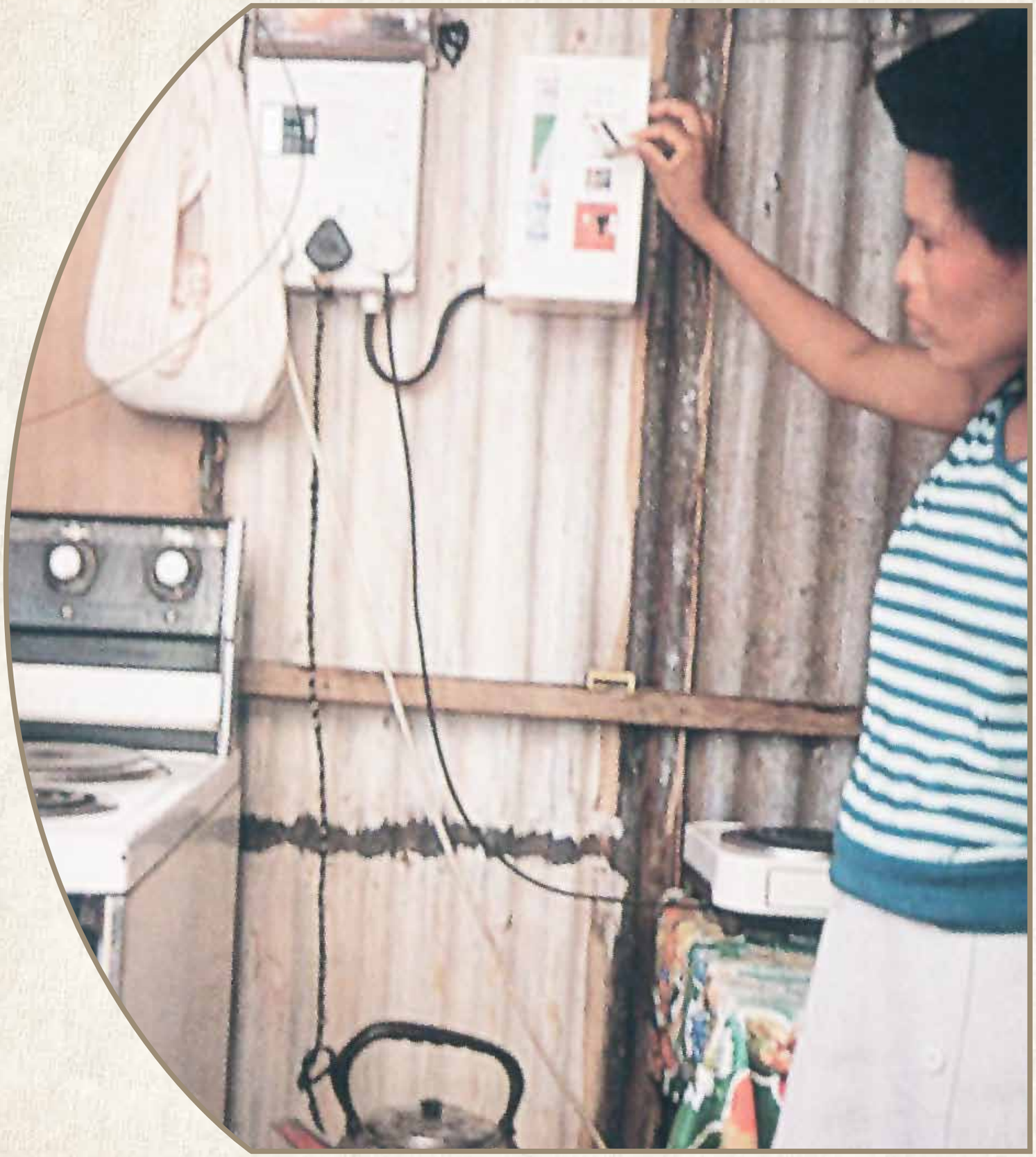
Rising to the challenges and raising the bar

The challenges that ESCOM experienced led to the introduction of performance measurement systems on the main transmission network and the diversification of ESCOM's power generation capabilities. ESCOM's engineers decided that the interconnected system needed emergency generation at strategic points to address the problem of system shut-downs that left entire regions without power.

This resulted in the building of the gas-turbine power stations Acacia (Western Cape) and Port Rex (Eastern Cape) in 1976. These stations could be operated by remote control from the National Control Centre to provide backup for peaking demand and black-start capability in emergency situations.

Another addition to ESCOM's generation capabilities was the Drakensburg pumped storage power station. It was part of a project to transfer water over the Drakensberg from the Thukela to the Vaal River. Construction on the project began in 1974 and the power station was completed in 1981. It was constructed 52 storeys underground and was designed to supply 1 000MW of electricity during peak periods. In 1977, Vanderkloof, ESCOM's second largest hydro power station, came into commercial service. The construction of Palmiet pumped storage power station began in 1983.

Far left: Kriel Power Station
Left: The machine hall at Drakensberg Power Station



Chairman of ESCOM,
Dr John Maree

A newly connected customer switches on. Readyboards consisting of two or three plug sockets, a light and an earth-leakage relay, made it possible to have electricity in homes in informal settlements

1983 to 1993

Building a better organisation

In this decade the national power utility underwent changes that established greater control of its performance and strategic objectives. In 1983 organisational inefficiencies were a problem, with frequent interruptions in supply. Higher operating costs resulted in high tariff increases and consumer dissatisfaction. The Electricity Council was established in 1985 to control the company and, under the new Chairman Dr John Maree, clear business objectives were defined, with a focus on accountability, improved performance, and controlling costs. It was decided too, that the company must be more customer-focused. In 1987, the Eskom Act was published, and South Africa's national power utility was renamed, Eskom.

Expansion and contraction

Downsizing was just one way in which Maree transformed the organisation. With the country going through a process of massive political and social change, Eskom's leadership anticipated the direction the country was taking and endeavoured to effect change from the inside. An Equal Opportunity Committee was established in 1986 to investigate and remove discrimination; training programmes were introduced to provide black employees with opportunities for advancement and designations and wages were made uniform across the company. Up to 7 000 employees enrolled annually for courses at the new Eskom College.

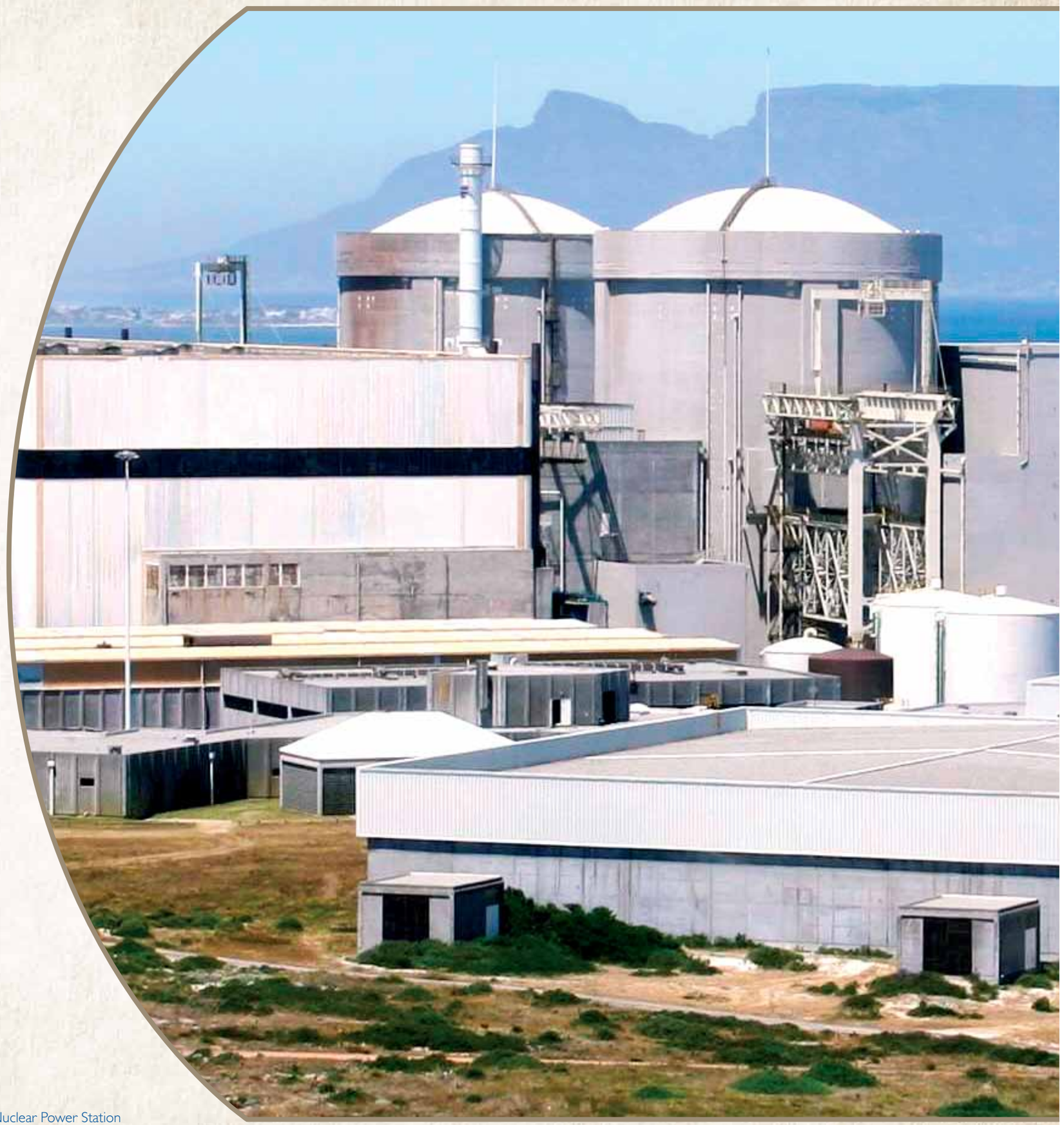
South Africa's economic growth slowed dramatically as the decade progressed, and so did the demand for electricity. This resulted in an over-supply forcing Eskom to embark on a programme of decommissioning and mothballing power stations, which only ended in 1995.

At the time, only 40% of the population (fewer than 13 million people) had access to electricity. Eskom determined that a reduction in the real price of electricity and supplying electricity to the homes, businesses, and clinics of millions of black South Africans would stimulate economic growth in South Africa. It embarked on an "Electricity for all" programme of direct electrification in many townships across the country, to increase access to affordable electricity.

In 1990, in a report called "Five Years On", Eskom was said to have achieved a 32% rise in electricity sales, a 20% improvement in productivity per employee, a 15% decline in the real price of electricity, more effective water and coal usage, improved financial discipline, and greater employee development and recognition. By the close of the decade Eskom determined that a reduction in the real price of electricity would stimulate economic growth in South Africa. With the new South Africa emerging, it was increasingly important for Eskom to remain on the path of change.

A first for Africa

Eskom did not initiate expansion projects in the 1980s but "six-pack" power stations which had been planned and funded some years before were still being commissioned. Additional gas turbine and pumped storage power stations were completed, as was the first (and to date, only) nuclear power station in Africa – Koeberg – which began supplying electricity to the Western Cape in 1984.



Koeberg Nuclear Power Station

1993 to 2003

Leading change

South Africa's economy, post-1994, expanded at a rate unseen for over a decade, and Eskom had an important role to play in the new, democratic South Africa. It was not only expected to supply electricity to a large consumer sector that had not had access before, but was also seen as a significant contributor to national reconstruction and development objectives to achieve South Africa's socio-economic transformation. Eskom met these expectations as the decade progressed, marked by its first black Chairman, Mr Reuel Khoza, being appointed in 1997, and recognition at the 2001 Global Energy Awards as "Power Company of the Year".

Making a difference

In 2002 Eskom was restructured as a public company, Eskom Holdings Limited, and its new logo was introduced. Eskom's drive to become the lowest-cost producer in the world led to a huge improvement in generation efficiencies as well as a reduction in water usage, and it succeeded in reducing the price of electricity to give consumers one of the lowest-cost electricity supplies in the world.

Eskom's target to electrify 1.75 million homes by the year 2000 had already been exceeded by 1999 with over 2 million homes connected by Eskom and municipalities, giving 43% of South Africa's rural population access to electricity. Before 1994 this figure had been only 12%.

Believing that electrification alone would not guarantee economic growth, Eskom undertook to contribute R50 million a year towards electrification of schools, clinics and other community development activities, and spent almost R1 billion on black-empowered companies. In 1998 the Eskom Development Foundation was formed to coordinate and carry out the company's corporate social investment programme.

In 1994 the National Electricity Regulator was established by Government and constituted as an independent body the following year. Restructuring the electricity industry to serve South Africa's growing economy was an important task for regulators and Government, and Eskom's role was integral to the process. Although the power utility estimated that demand would exceed its generation capacity by 2007, the implementation of a proposed new-build programme was placed on hold with a requirement that Eskom focus on the return to service of the mothballed power stations, Komati, Grootvlei and Camden. The first unit of Arnot was returned to active service in 1999.

Majuba, the last of the "six-pack" power stations to be built, with an installed capacity of 4 110MW, went into commercial service in 1996. The last unit was handed over to Eskom by the contractors in 2001 and the power station was officially opened by President Thabo Mbeki in 2003.

1995 saw the publication of Eskom's first Environmental Report and, in 2002, Eskom developed a Sustainability Strategy, in addition to co-hosting (with Government) the World Summit on Sustainable Development.

Chairman of Eskom, Mr Reuel Khoza

Facing page: The electrification programme defined the decade

Eskom's own transformation

As an important part of its contribution to South Africa's socio-economic transformation Eskom committed to transforming the demographic profile of its staff, making it more reflective of the South African population. The company's 1994 Affirmative Action Policy became one of its commitments to Government's Reconstruction and Development Programme.

Eskom's targets for its own transformation were ambitious and it is to the credit of the company that, in a decade that was in many respects characterised by unresolved issues to do with restructuring an industry fraught with distribution problems and payment arrears, Eskom succeeded in achieving its employment equity target of 45% of employees in managerial, supervisory and professional positions being black.

Special attention was paid to training, skills development and the allocation of bursaries with a substantial investment being made over the years in bursar and trainee programmes. In addition there was a focus on gender, with the allocation of bursaries to women increasing significantly. Eskom also sponsored a post-graduate programme in engineering management, into which some 40 women were enrolled. This initiative was aimed not only at achieving a better numerical gender role, but at making sure that Eskom in the future would be a company where women made a substantial difference.

The Adult Basic Education and Training Programme reduced levels of illiteracy from 45% to 10% by the year 2000, and another Eskom RDP commitment was to enable Eskom's employees to own their own homes or rent suitable accommodation. For this, the Eskom Finance Company was created to grant home loans.

Facing page: A trainee at Eskom College, known today as the Eskom Academy of Learning

2003 to 2013

Powering transformation

Eskom rose to its greatest challenge in this decade to restore its capacity to supply sustainable electricity solutions to South Africa and the region, to restore the public's confidence in their national power utility and to continue to be a major contributor to South Africa's socio-economic transformation.

Powered by the spirit of resilience

During Eskom's first full decade in the new millennium, the event most crucial for the utility and for South Africa in terms of enabling future prosperity and growth, was the decision to lift the moratorium on Eskom's new-build programme. It proceeded in 2004 with work beginning on Gourikwa and Ankerlig open-cycle gas turbine power stations which were both commissioned in 2007, to be used during peak periods and in emergency situations to contribute to the national grid. In 2006 construction also began on the Ingula Pumped Storage scheme. In May 2007 construction began on Medupi, a new 4 788MW coal-fired base-load power station located in Limpopo Province, and the following year on Kusile, another coal-fired power station designed to generate approximately 4 800MW, located in Mpumalanga.

Late in the previous decade, Eskom had forecast that if it did not increase its existing generation capacity, there would be power shortages in the decade to come. Eskom had been required, however, to place its proposed new-build programme on hold which led, by 2006, to a reserve generation capacity that had shrunk below the desired 15% to between eight and ten percent. This was compounded by higher than expected demand and unplanned outages, resulting in disruptions of supply beginning in the Western Cape in 2006; further outages in 2007 and, between October 2007 and February 2008, nationwide load-shedding that caused disruption to all sectors of the economy. It was Eskom's darkest hour, damaging its reputation and public confidence in the utility.

It was in the spirit of resilience during difficult times that had been long-established as a core attribute of the company that Eskom and its employees rose to the challenge to do what was necessary to ensure a reliable and sustainable electricity supply. In addition to proceeding with the new-build programme Eskom focused on its programme to return mothballed power stations to service, with units from the power stations, Camden, Grootvlei, Arnot and Komati being commissioned and upgraded between March 2008 and 2012.

In 2010, led by Eskom's new Chairman Mr Zola Tsotsi, and new Chief Executive Mr Brian Dames , Eskom drew on its tried and tested capability for renewal, embarking on a major step-change programme of transformation to improve performance and keep the lights on. Centred on a new operating model, it continues today and includes a focus on Zero Harm, as well as the Back to Basics and Excellence Programmes, which are intended to make Eskom a high-performance organisation with a more diverse energy mix and reduced carbon footprint.

Facing page: Medupi Power Station under construction

Finding the way forward

This was a decade in which Eskom was required to respond and adapt strategically to changing conditions. The national electricity utility was faced with the challenge of balancing the need to keep the lights on against that of efficiently operating and maintaining a very tight system. The process of applications for price determinations through the national energy regulatory body (NERSA) was one that required constant development, while the need to engage consumers and stakeholders on the issue of energy efficiency had become an important Eskom initiative.

Eskom's environmental obligations have had to remain a focus even as the organisation has been massively expanding its capacity through the building of new coal-fired power stations and the return to service of previously mothballed power stations. Infrastructure development has been ongoing as has the implementation of the electrification progamme, delivering electricity to the 4 millionth household that was connected in June, 2012.

The utility has also continued to deliver on its commitments to broader socio-economic transformation through its corporate social investment activities, the supplier development and localisation programme, the development of its own employees and the internal transformation of the organisation.

Managing this range of obligations has not only required a focus on building stakeholder relationships, it has also required Eskom's strategy to be developed, taking these many considerations into account. It required the development of a roadmap to define the way forward, and has resulted in Eskom's Corporate Plan, which defines eight strategic imperatives to achieve the core strategy which is to "shift performance and grow sustainably."

Finding the way forward was as much about finding the leadership that would be suited to leading the changes and, in this respect, was reflected in the number of Chairmen that served in this period. In 2005 Mr Reuel Khoza's term of office expired and he was succeeded by Mr Mohammed Valli Moosa who had previously served as Minister of Environment and Tourism. In 2008 Mr Bobby Godsell, former CEO of AngloGold Ashanti, was appointed Chairman. Upon his resignation in 2009 Mr Mpho Makwana, who had served on the Eskom Board since 2002, was appointed as acting Chairman with executive powers until June 2010.

In June 2010 Mr Zola Tsotsi, who had previously held the position as head of the Business Planning Unit at Eskom Holdings, was appointed Chairman. Key functions of his position are in supporting the restructuring of Eskom, liaison between Eskom and Government and driving company transformation.

Chairman,
Mr Mohammed Valli Moosa

Chairman,
Mr Bobby Godsell

Chairman,
Mr Mpho Makwana

Chairman,
Mr Zola Tsotsi

Facing page: Partnering to keep the lights on at Majuba Power Station

Powering your world

More than just a power utility

As a state-owned company now in its tenth decade, Eskom plays a substantial role in national and regional development, which goes beyond the basic supply of electricity. Providing reliable and affordable electricity is not only a commercial undertaking, it underpins the livelihoods of South Africans.

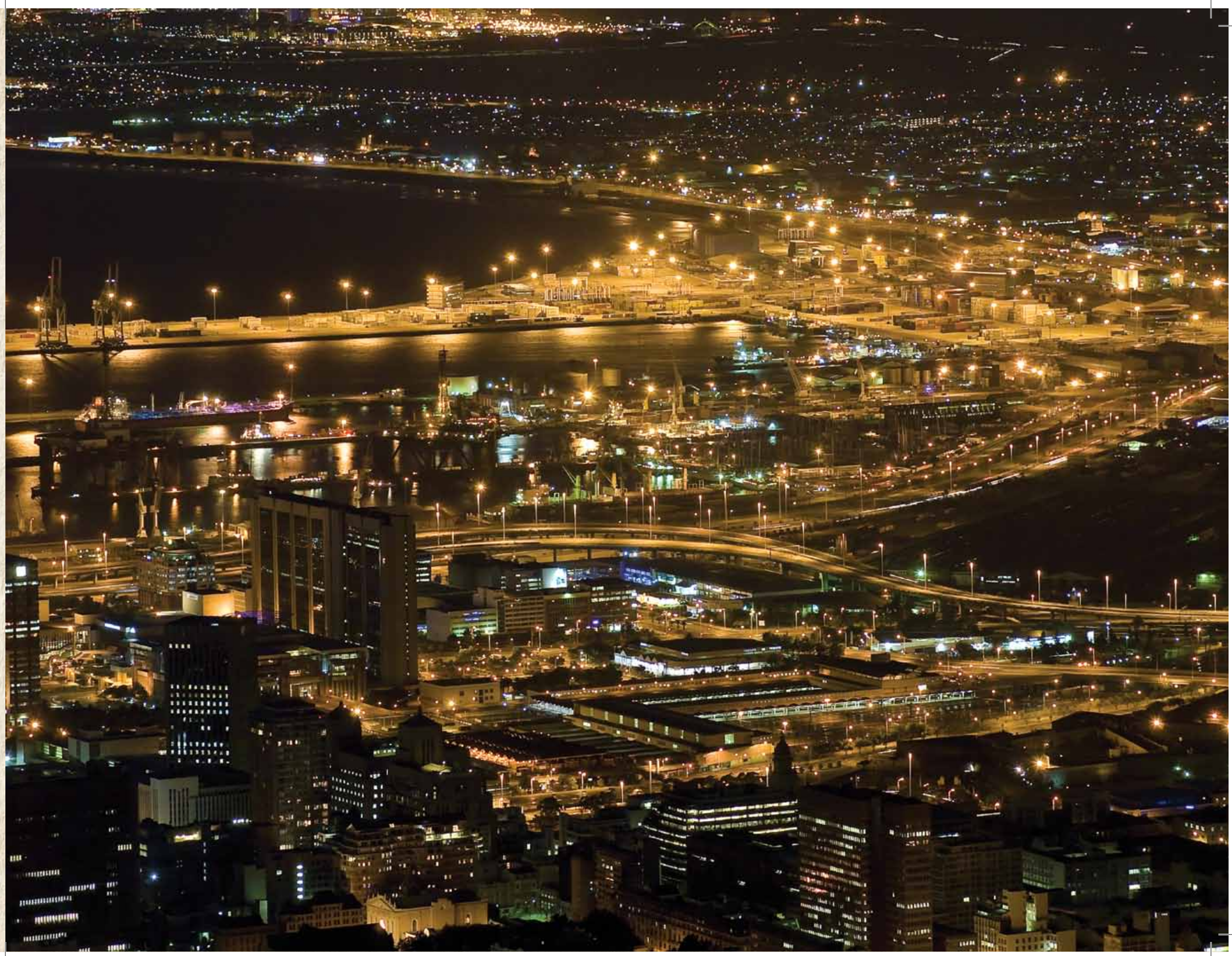
Through the daily activities of providing electricity, building power plants and transmission infrastructure, connecting households without access to electricity or engaging in corporate social initiatives, Eskom has a significant impact on the lives of most people in the country, contributes to shaping the future of South Africa and the region and supports Government's priorities.

Eskom's economic footprint

Eskom's impact on South Africa's economy is extensive, with value added at Group level to the South African economy in the 2011/2012 financial year being R51.4bn. This significant contribution to the total South African GDP is achieved through Eskom's core activities – the generation, transmission and distribution of electricity. However, in executing its core activities, Eskom also supports a range of other industries that supply it with goods and services ranging from coal, metals, petroleum, engineering and construction services, as well as financial and business services. This contributes to Eskom's direct impact on the economy.

Eskom's indirect impact on the economy is also significant and achieved through its suppliers generating further economic activity that takes place in the execution of their contracts with Eskom. These economic activities also generate employment and the payment of salaries, wages and taxes which further contribute to the turnover of the South African economy. It is calculated that, in total, approximately 7.5% of South Africa's GDP can be traced back to the direct, indirect and induced impacts of Eskom on the economy.

Facing page: Powering the SA economy: Cape Town CBD and harbour at night



More than just a power utility

Eskom, an economic growth engine

Eskom is well positioned to support South Africa's continuing requirement for new capacity with regard to power stations and power lines, which will constitute a further economic stimulus for many years to come. The infrastructure expansion programme is one of the largest current drivers of the South African economy and is aligned with Government's target of 6% GDP growth between 2010 and 2014.

Powering new industrial development

As a producer of many of the world's minerals, South Africa is well positioned to encourage beneficiation and, with that, added value for the economy. By making additional electricity available through the generation capacity expansion programme, Eskom is ensuring that new industries wanting to establish in South Africa are able to receive the necessary power.

Perhaps more important than the size of the impact on the South African economy is the way in which Eskom's investments support social development in South Africa. Through its policies, Eskom wants to ensure that its investments create sustainable jobs within South Africa and lasting value for the country's economy.

Eskom, through its localisation and supplier development programme, will ensure that local companies are given preference in all procurement activities. This fosters the growth of new industries in South Africa that will remain economically viable after the completion of Eskom's investment programmes. Through the three major new-build projects (Medupi, Kusile and Ingula), Eskom has already awarded a total contract value of over R65bn to local South African suppliers. In the period 2011/12 R7.6bn in contracts was committed to local suppliers, amounting to 77.2% of the total value of the contracts awarded.

Eskom is currently building two of the world's largest dry-cooled, coal-fired power plants – Medupi and Kusile – and the Ingula Pumped Storage scheme is well under way. These, together with the progamme of upgrading existing power stations and returning others to service, as well as investment in improvements to the transmission grid and the construction of the Ankerlig and Gourikwa gas turbine power stations, comprise Eskom's capital expansion programme. Total budget, until completion in 2018, is estimated at R340bn.

Facing page: Ankerlig Gas Turbine Power Station

Powering your world

More than just a power utility

Committed to powering the nation

While committed to keeping the lights on for South Africa through a focused approach to managing a tight power system, as well as through expanded partnerships with businesses and households that aim to manage demand and raise awareness of the need to use electricity more efficiently, Eskom continues to implement the electrification programme, with over 4.2 million additional households having been provided with electricity since 1991.

Transforming the lives of people

On 12 June, 2012, residents of Godidi Village, outside Centane in the Eastern Cape, turned out to celebrate the opening of a new electricity substation, bringing electricity capacity that will allow over 15 000 rural household connections. Shortly after a ceremony at the substation, the Minister of Public Enterprises Mr Malusi Gigaba cut the ribbon on the new electricity meter in the home of Mr and Mrs Saphatha and Nobuntu Gagula, the delighted owners of the 4 millionth household to be connected as a result of the electrification programme.

To the local community, the event signalled the end to an era of paraffin stoves and candlelight, and to South Africa it demonstrated the work and purpose of Eskom: providing sustainable electricity solutions to grow the economy and improve the quality of life of people in South Africa and the region.

4 millionth customer connection: Mr Malusi Gigaba, Minister of Public Enterprises and Ms Noxolo Kiviet, Eastern Cape Premier, congratulate home-owners, Mr and Mrs Saphatha and Nobuntu Gagula

Southern African Network Map

More than just a power utility

Eskom's key role in the Southern African Power Pool

Eskom's work in the Southern African Development Community (SADC) is aligned with its own purpose of providing sustainable electricity solutions to grow the economy and improve the quality of life of people in South Africa and the region. It is also aligned with the South African government's foreign policy objectives supporting SADC's vision of a common future for the people of southern Africa within a regional community.

South Africa through Eskom has been involved in the electricity sector in various countries in Africa for a long time and has utilised different forms of engagements. This has been done mainly through bilateral power trading arrangements using instruments such as Power Purchase and Power Sales Agreements. Eskom is also committed to on-going participation in the SADC region through the Southern African Power Pool (SAPP) as an institution. Participation in East and West Africa (Uganda and Mali, respectively) has been undertaken through long term Operating and Maintenance Concession Agreements.

The flagship regional projects that Eskom has been involved in over the years include the Hidroeléctrica De Cahora Bassa (HCB) hydro scheme, with the explicit objective of developing the HCB infrastructure to generate power and distribute it to the territories of Mozambique and South Africa for the benefit of the people of the respective countries. Eskom also played in pivotal role in the transmission interconnection that connected Zimbabwe, Botswana and South Africa in 1995 which opened up a corridor for electricity to flow as far as the Democratic Republic of Congo (DRC) in the north and Namibia in the far south west.

Eskom's statement of purpose, "providing sustainable electricity solutions to grow the economy and improve the quality of life of people in South Africa and in the region" provides a context for Eskom's role in SADC, and highlights that Eskom directly supports South Africa's developmental role in the entire region. A number of initiatives are currently underway to pursue the development of further cross-border electricity infrastructure in the form of power stations and transmission networks in the SADC region. This collaborative effort is intended to relieve current transmission network constraints, and to provide access to cleaner gas-fired and renewable hydro power that is abundant in the region.

Eskom has and continues to contribute to the continental power sector development through its participation in institutions such as the Union of Producers, Transporters and Distributors of Electric Power in Africa (UPDEA), now called the Association of Power Utilities of Africa (APUA) and the Power Institute of Eastern and Southern Africa (PIESA).

Environmental responsibility

Eskom is working to reduce its environmental footprint, diversify its energy mix and lower its carbon emissions. In addition to doing this in a manner consistent with South Africa's economic growth objectives, Eskom is also committed to planning for the impact of climate change.

New technologies

The Sere renewable-energy wind project in the Western Cape has commenced and a programme to install photovoltaic solar panels for the purposes of Eskom's own consumption has begun. During the 2011/12 financial year photovoltaic plant was installed at Megawatt Park as well as at Kendal and Lethabo power stations to supplement their auxiliary power consumption. The programme is in the process of being implemented across Eskom's fleet of coal-fired power stations.

In the coming years, the utility will further increase its water usage efficiency to reduce water consumption. Both coal-fired new-build projects, Medupi and Kusile, will use dry-cooling technology to reduce Eskom's relative water consumption, per unit of electricity produced, by as much as 90% compared to wet-cooled stations. In the pipeline, are a number of new innovative water-saving technologies, such as mine water desalination, cold-lime softening and other improved water management strategies.

Eskom's Klipheuwel renewable-energy wind project


Vestas

Powering your world

More than just a power utility

Social development through electricity provision

Eskom generates 95% of the electricity consumed in South Africa. Since the beginning of the electrification programme, the national power utility has electrified millions of homes and remains committed to assisting Government in achieving universal access for all South Africans by 2020.

Employer, job creator and skills developer

Job creation and skills development are among South Africa's most important challenges and Eskom plays an important role in addressing them. Within the Eskom Group, direct jobs are provided to some 41 800 people, making Eskom one of the country's largest employers. However, just as Eskom's impact on the economy reaches far beyond its own premises, the same is true of Eskom's impact on employment. For its operations, Eskom purchases more than half of South Africa's annual coal production and, as a labour-intensive industry, thousands of jobs are sustained, attributable to Eskom's activities.

Beyond primary energy, Eskom spends more than R25bn on other products and services used in daily operations, ranging from power plant maintenance to business services. The construction industry particularly, as well as manufacturers of machines and other industrial equipment, profit from Eskom's orders. Moreover, by investing in power generation facilities and infrastructure improvements, Eskom helps to create job opportunities with these contractors.

By the end of March 2012, the number of jobs directly created by Eskom's expansion programme was 28 616. A total of 13 954 people, constituting 49% of the jobs created, were employed from the districts in which the projects are taking place.

Eskom firmly believes in the development of people and continually invests in training and development to ensure the necessary skills to support its business. This commitment to training extends beyond Eskom employees and in some cases also includes the training of current and potential partners and major suppliers.

The benefit to local communities

Eskom makes a significant contribution to local communities through the development of road, rail, telecommunication, sewerage and other infrastructure that is required to support a major project. In instances where the utility needs to access land from local communities for infrastructure development, the affected communities are relocated through a carefully managed process that ensures that the standard of living of the relocated families is maintained or improved.

A trainee at SA Chem Tech Incubator, an Eskom Development Foundation enterprise development project

More than just a power utility

Leading social transformation

It is widely accepted that Government is not solely responsible for driving change and that businesses and state-owned companies such as Eskom have a role to play in contributing to social transformation. In this respect, Eskom is currently the largest contributor, among state-owned companies, to social initiatives.

A strategy to make a difference

Eskom's corporate footprint includes its employees, customers, suppliers, local communities shareholders and manufacturing partners. This wide reach and influence informs Eskom's approach to corporate social investment (CSI), taking it beyond the notion of charity into positive, sustainable projects that are in line with its business objectives and make a beneficial imprint on the company's broader community. It is guided by a clear and well-developed strategy that takes into consideration the social landscape, the needs of the community, knowledge of the primary interests, and how interventions can be enhanced to best serve the beneficiaries.

Eskom's CSI strategy also assists in identifying key indicators of success and ensuring that interventions are tracked and evaluated to assist in continued improvement. In this respect, CSI reporting is a vital element of the strategy and Eskom is committed to transparent disclosure and the regular issue of a sustainability report.

The Eskom Development Foundation

The Eskom Development Foundation, a not for profit company solely funded by Eskom, is responsible for the execution of Eskoms's CSI initiatives. It is mandated by Eskom to improve the quality of life of people in communities primarily where Eskom operates and to grant support based on the needs of the communities.

The Foundation's focus areas are selected to support Government's developmental objectives and comprise education, enterprise development, the environment, food security and agriculture, health care and social and community development.

In South Africa it is vital that businesses are socially-minded and responsible corporate citizens that look beyond immediate financial gain to their part in the country's social transformation agenda. In this, Eskom plays a leading role.

Facing page: Welfare and social assistance is a key element of Eskom's focus on social and community development

Learners at the Kromhoek Combined School in KwaZulu-Natal, to which the Foundation contributed some R5 million for its rehabilitation

Powering your world

The story of CSI at Eskom

In 1988 Eskom approved its first community development project, providing talented black students with bursaries to study engineering. It was the beginning of Eskom's long involvement in education initiatives which remain a key focus of Eskom's corporate social investment (CSI) programme today.

From the 1990s, Eskom began to carve a space for itself in the CSI field, establishing a Community Development Department mandated to identify and work with non-governmental organisations (NGOs) working in the field of enhancing education, and then a Small Business Development Department which was a first step towards the enterprise development programmes of today.

The Eskom Development Foundation was established in 1998 and formally began operations on 1 January 1999, mandated to coordinate and integrate Eskom's CSI activities. From the outset, the Foundation formed alliances and partnerships to propel its activities to the next level, with great success. In 2012, Eskom's CSI strategy was reviewed and refocused to align with its business imperatives, government developmental agencies, best practice and sustainability. The Eskom Development Foundation's focus areas were defined so as to align with Government's developmental objectives.

The Eskom Development Foundation has now been improving and transforming the lives of people in South Africa for 25 years.

Working in the one of the hydroponic tunnels donated by the Foundation to the Ixhiba Agricultural Co-operative, located in KwaZulu-Natal

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