



100
Empowering
the future together
1923-2023



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The Spirit of Progress. In Industry... on the Land... in the Home... In Transport

FOREWORD

Group 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 the past 100 years Eskom has proved itself to be a vital cog in the lives of all South Africans. This 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 have served Eskom with dedication, resilience and passion.

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.

While the last 15 years characterised by power outages have been a difficult period for Eskom and the country, we are privileged to be witnessing green shoots of recovery.

While we improve our operational performance, undertake a turnaround process, and unbundle our business - we will be contributing to the decarbonisation of South Africa's energy sector with the related development and re-industrialisation of the country's energy heartland Mpumalanga, through the Just Energy Transition strategy.

Eskom is pioneering the Just Energy Transition. Decarbonising South Africa's economy is vital to ensuring energy security, protecting our environment, creating employment and growing our economy - all in an equitable manner to ensure that no one is left behind.

We have been instrumental in South Africa's expansion of energy and electrification to the majority of our citizens. Through the successful implementation of government's Integrated National Electrification Programme (INEP), we have electrified approximately 5.8 million households within Eskom's licensed areas of supply since early 1991. This has contributed to the current 86% of electricity coverage in South Africa and we remain on course to achieve universal access through new innovations such as microgrids for hard-to-reach communities.

We have provided the power to drive economic growth and development in South Africa and the SADC region. We have been led by South Africa's top leaders and executives, and we have trained many of South Africa's top engineers.



Eskom has also contributed to the upliftment of communities by touching the lives of millions of South African beneficiaries through the Eskom Development Foundation. And finally, we have powered value chains and businesses at all scales, reflective of all South African demographics through procuring more than R1 trillion of goods and services.

While a lot has changed over the century, one thing has not changed - our purpose of providing sustainable electricity solutions to grow the economy and improve the quality of life of customers in South Africa and the region.

Calib Cassim
Acting Group Chief Executive



Congella Power Station

Komati Power Station

Arnot Power Station

Highveld Power Station

Medupi Power Station

Koeberg Power Station

Chairman's *Message*



Mpho Makwana

Eskom's 100-year history is inextricably intertwined with the story of South Africa's rise to becoming an industrialised economic powerhouse in 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.

Electricity is the lifeblood of a nation, and a strong and sustainable electricity industry is a necessary condition for economic development and social transformation.

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.

The past decade has unfortunately been coloured by increased loadshedding events. Eskom's generation performance is under pressure, with daily loadshedding set to continue at least in the short to medium term.

I understand that South Africans are frustrated by the ongoing electricity crisis – however, I am confident that, with the turnaround plan on the table, we can improve Eskom's performance. It will take discipline to find a sustainable way of keeping the lights on and kickstarting the economy.

Looking back, it is fitting that we remember two of the many Eskom ground breakers in our history - Dr Hendrik Johannes van der Bijl and Dr Reuel Khoza.

Not only was Dr van der Bijl the visionary behind the development of South Africa's electricity supply industry and mineral-energy industrial complex - he was also instrumental in the establishment of Eskom and other large public enterprises that continue to drive the growth and industrialisation of the country today.

Dr Reuel Khoza is known for consolidating Eskom's role in South Africa's democratic transition as the successor to Dr John Maree. Under him, Eskom became a key lever for the delivery of

the Reconstruction and Development Plan's target of reducing the real price of electricity as well as electrifying millions of homes, schools, and clinics. He also led the conversion of Eskom from an Electricity Council (Non-Profit Organisation) into a commercialised State-Owned Company.

I would also like to acknowledge our leaders in Government who were instrumental in shaping the landscape in which Eskom functioned – President Nelson Mandela for driving electrification and the Reconstruction and Development Plan, and President Thabo Mbeki for leading in the time that Eskom grew in stature to become Utility Company of the Year. More recently, President Cyril Ramaphosa has been steering the recovery and restoration of Eskom and the restructuring of the electricity industry to make Eskom future-fit for the next 100 years.

From the leadership of these two pioneers, our national leaders who came after them and the leaders who are here today - we are all called upon to be ground breakers in our respective areas of influence.

Here's to another 100 years.

Mpho Makwana
Chairman of the Eskom Board of Directors



1923 – 1933



Opening of ESCOM'S first headquarters

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

ESCOM's headquarters
move to Electricity House in 1924

Workers celebrate the
completion of a transmission line

Establishment *and Consolidation*

“ There lies before the Electricity Supply Commission a great task and a great opportunity. *It will be our endeavour to play our part not as those who follow where others lead, but as pioneers; to foresee the needs of a country fast developing, and by wise anticipation be ever ready to provide power without profit, wherever it may required.* ”



First Chairman of ESCOM,
Dr H J van der Bijl

On the 1st of March 1923, Eskom was established, known then as the **Electricity Supply Commission (ESCOM)**.





Colenso coal-fired power station was commissioned in 1926

Congella coal-fired power station was commissioned in 1927

Sabie River Gorge hydro power station began commercial operation in 1927

Witbank coal-fired power station was commissioned in 1926

Salt River coal-fired power station was commissioned in 1928

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.

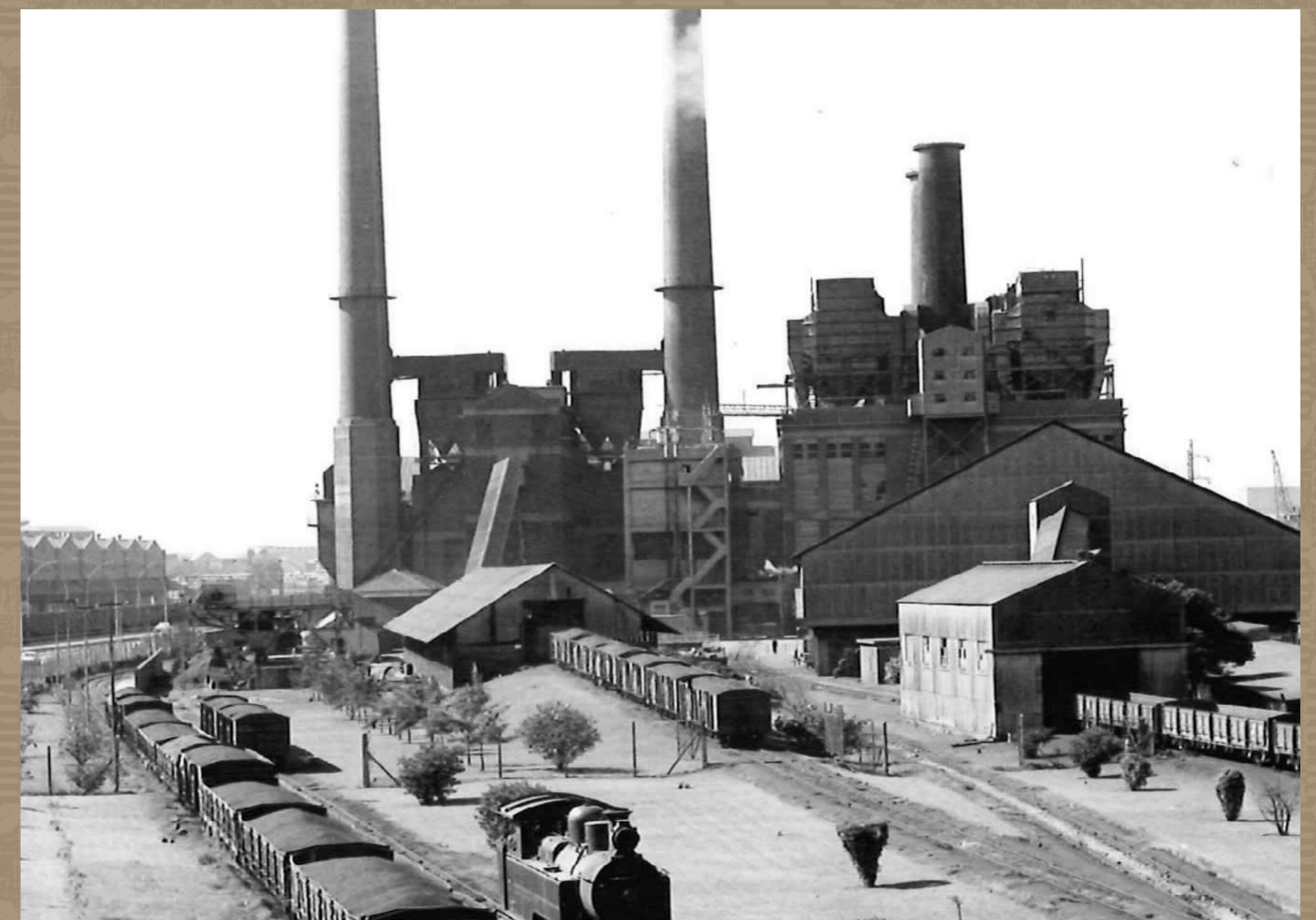
The mining industry had been the foundation of South Africa's economic growth and necessitated the development of other industries to support it and the growing workforce on which it relied. On the Witwatersrand (known today as Gauteng) and in other centres across the country, the manufacturing industry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

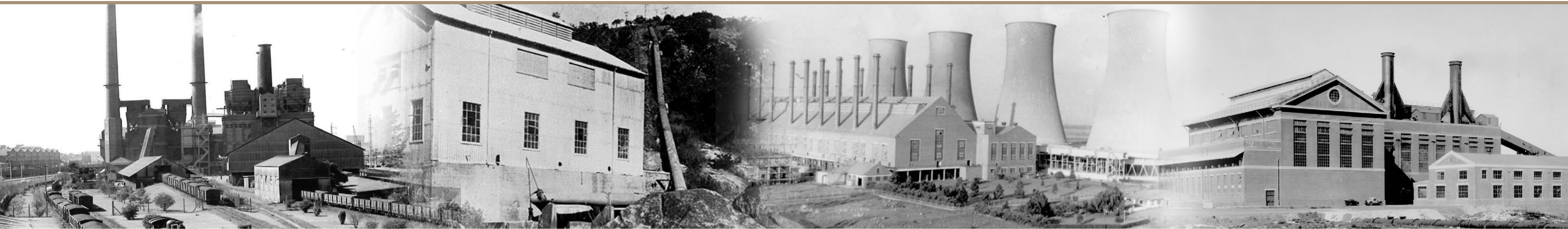
New railway networks served the industrial centres and linked them to the ports.

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.

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.



Congella Power Station 1928



Congella Power Station 1926

Colenso Power Station 1926

Vierfontein Power Station

Salt River coal-fired power station was commissioned in 1928

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 hydroelectric plant, showing the early commitment to renewable resources and a diverse energy mix that Eskom still has today.



Live-line maintenance

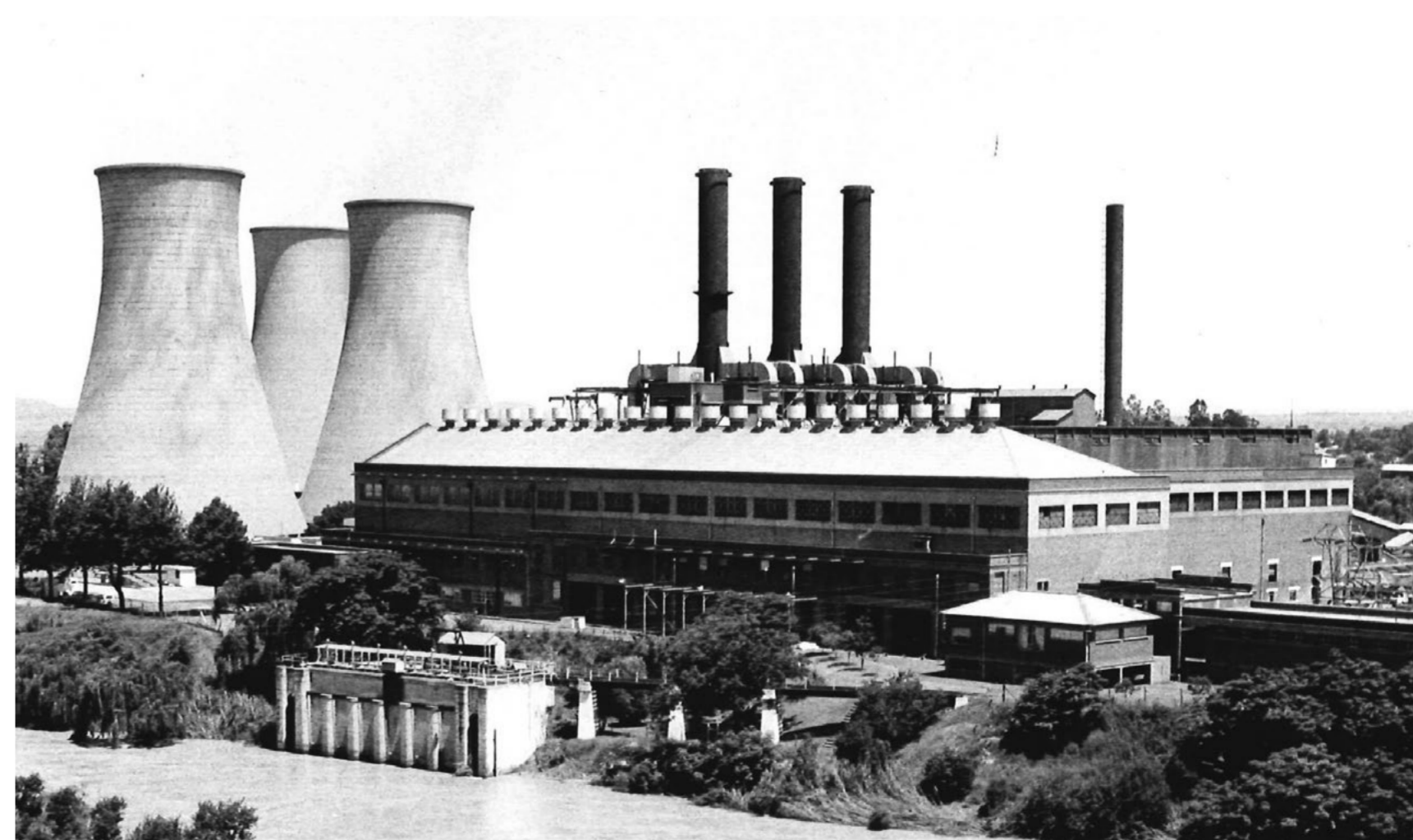
Electricity - first light, first tasks

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 as 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.



Colenso Power Station 1926



The hole in the wall at Coffee Bay, Eastern Cape



West Bank 1 Power Station



West Bank 2 Power Station, Eastern Cape Province

Eastern Cape

East London was one of South Africa's first cities to receive municipally supplied electricity in 1899. Port Elizabeth followed in 1906. From 1923 onwards, municipalities had to apply to the newly created ESCOM if they wanted to develop their electricity generation capacity. Port Elizabeth, the largest city in the Eastern Cape was (and still is) an important centre for agricultural exports from the surrounding farm areas. In 1925, the city obtained permission from ESCOM to build its own power station at Mount Road.

In 1946 the East London municipality asked ESCOM to augment its supply and in 1947 an arrangement was reached whereby ESCOM acquired the West Bank Power Station. The following year ESCOM extended its reach in the Eastern Cape by acquiring the King William's Town and the Alice municipal undertakings; and together with East London these three power stations formed the nucleus of what was later called the Border undertaking.

Meanwhile, by the early 1950s Port Elizabeth was in need of more power and approached ESCOM for advice. ESCOM agreed to build a coal-fired power station at Swartkops. In 1953, when the station was in the early stages of construction, Port Elizabeth expressed a wish to buy the Swartkops Power station from ESCOM. Under pressure from building power stations elsewhere in the country, ESCOM agreed to the sale, which was formally concluded in 1955. This was the only time that Eskom sold one of its major power stations.

As part of the deal, ESCOM reserved 10MW of Swartkops's capacity and returned to the area in 1963 to create the Eastern Cape undertaking. The 10MW came in handy to supply local rural farmers, and was supplemented by a small hydro scheme at the Paul Sauer Dam.

South Africa is not ideally suited to the largest Hydro-electric station; but the Eastern Cape offers the best opportunity for this proven source of green power. The Gariep is the largest hydroelectric station (at 360MW, South Africa's largest) is situated at Norvalspont in the Eastern Cape. Gariep started feeding power into the grid in 1971, and provides useful backup power to the country in the event of emergencies and during peak demand. Hydroelectric power is also generated on the Ncora and Umtata Rivers in the Eastern Cape. The Colly Wobbles Hydroelectric Station on the Mbashe River supplies 42MW to the grid.

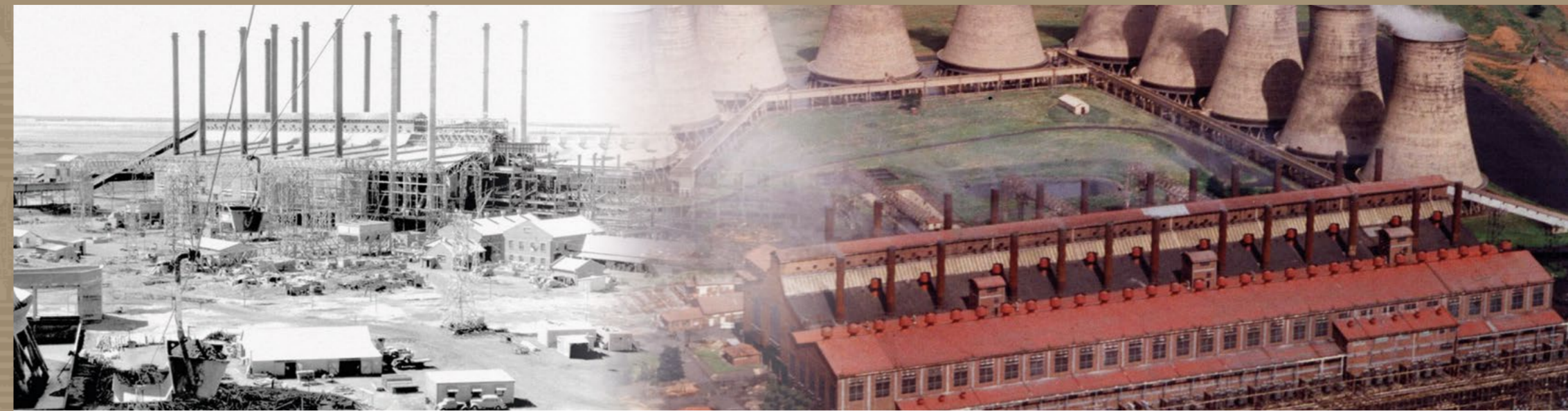
The hole in the wall at Coffee Bay, Eastern Cape



In 1976 Port Rex (171MW), one of ESCOM's first gas turbine power stations, was commissioned in East London.

In 2002 Eskom committed itself to three major projects in the Eastern Cape. It invested R200 million in boosting the Eastern Cape's electricity supply; 282 under-served schools in the region received electricity for the first time, and the Eastern Cape.

1933 – 1943



Vierfontein Power Station

Klip Power Station

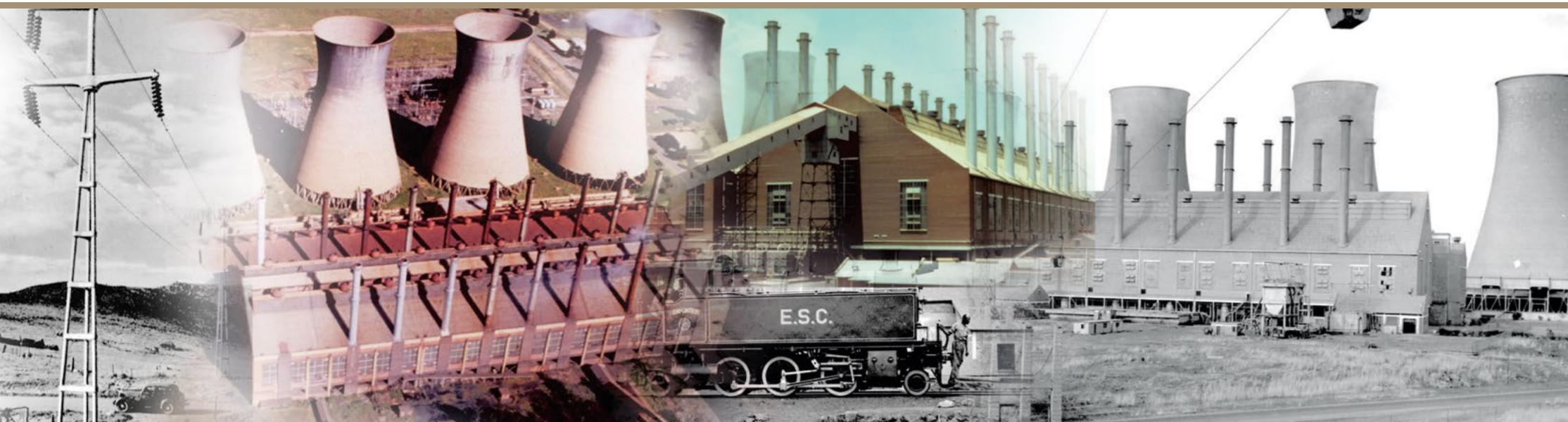
Rising to the *challenge*

In this decade, South Africa expected ESCOM to supply electricity to contribute to growth.

Escom House
officially opened in
1937



ESCOM House in Johannesburg



Concrete pylons

Vierfontein Power Station

Vierfontein Power Station

Klip Power Station

In order to meet the ever-increasing demand, extensions were added to all existing power stations. Salt River Power Station more than doubled its size when two 20MW sets were added, and new power stations were added to the fleet.

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, also 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 ESCOM's new headquarters and, at twenty-one storeys, it was the tallest building in South Africa.

Pioneering power station *technology*

The impact of war

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

During the war years the demand for electricity slowed considerably, 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 pursue 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.

Construction of the new Klip Power Station began in 1934 adjacent to the 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



Golden Gate

Gariep Dam

Taaibos Power Station

Vaal River Power Station

Free State

Municipal electricity supplies began in Bloemfontein on 8 November 1900.

Initially, there were only 14 customers, but this had risen to 535 by 1906. In 1915 a trackless electric tram system was introduced, proving the importance of electricity for economic development. By 1921, Bloemfontein's total installed generating capacity was 2 600kW; and it received a major boost in 1924 when a new power station, with a capacity of 6MW, was built at a cost of £180 000.

It was the discovery of gold deposits in the northern Free State in 1938 that changed the game for the province in terms of electricity demand. In 1938 work began on the Vaal Power Station, which was situated just south of Vereeniging at Viljoensdrift, and was the first ESCOM (as it was then called) power station in the Free State. Vaal Power Station, which began commercial operation in 1945, generated 318MW and supplied much-needed power to the new gold mines that were springing up in the northern Free State. More stations were to follow, and in the 1950s three more large coal-fired power stations were built in the Free State: Vierfontein Power Station (360MW), Taaibos Power Station (480MW) in Sasolburg and the Highveld Power Station (480MW) also in Sasolburg. Clearly ESCOM was making good use of the coal deposits in the region, as well as of water from the Vaal Dam.

The Free State is also home to South Africa's largest hydroelectric power station. The Gariep Hydroelectric Power Station, which is situated 300m downstream from the wall of the Gariep Dam (on the banks of the Orange River), started feeding power into the grid in 1971. On completion, Gariep added 360MW to the grid, and provided useful backup to the country in the event of emergencies and during peak demand.

Eskom Guardians in the Free State are also proud of the fact that one of their own ran the organisation for a number of years.

Professor Reinhardt Ludwig Straszacker, who was born in the Free State in 1910, became ESCOM's fourth Chairman in 1962 - a position he held for a remarkable 18 years.

In 2022 average demand in the Free State is 1 719MW, which is 4,65% of national demand. The Free State has 44 480KM of distribution substations. In the 2010/2011 financial year, capital expansion and refurbishment to the value of R200 million were done on the Distribution network and 1, 498 on the Transmission network with a planned spending of R1.08 billion on Transmission envisaged for the five years to follow.

Eskom has 233 115 customers in the Free State: 91,04% residential; 8,87% industrial, mining, commercial and agricultural; and 0,09% municipal. Since the electrification programme began in 1991, Eskom, funded by the National Electrification Fund, has electrified almost 194 600 households, over 700 schools and 17 clinics in the Free State.

Since January 2010, The Eskom Development Foundation has invested over R2.4 million in the Free State in various causes. The beneficiaries have included schools, the Red Cross (in aid of the Meqheleng tornado victims), FET colleges and small businesses.



1943 – 1953



Vaal River Power Station, giant turbines

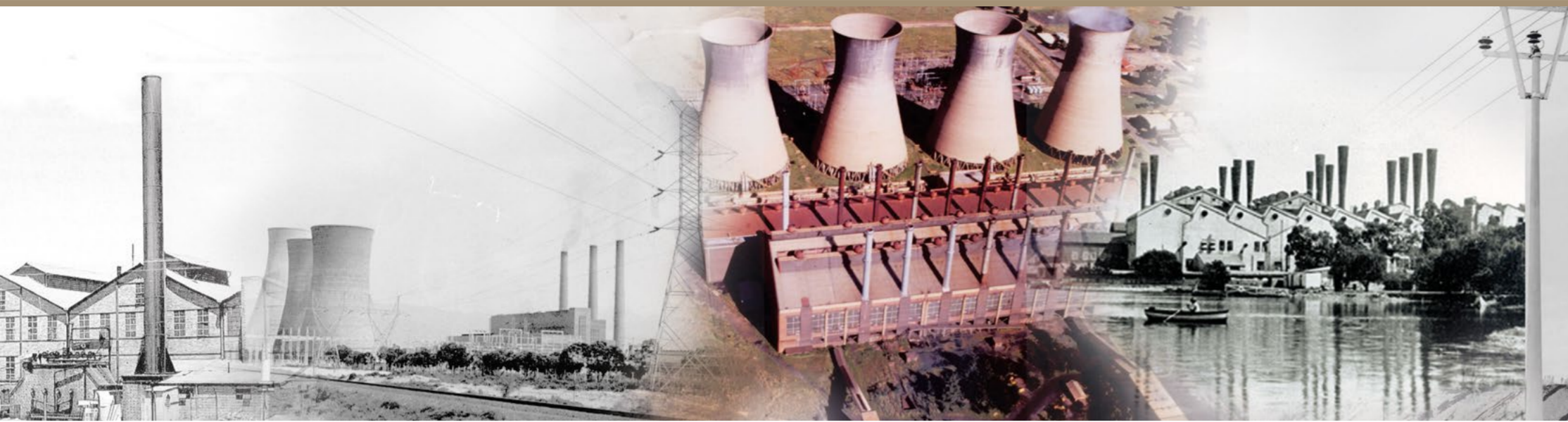
Vaal River Power Station - aerial view

East London's West Bank Power Station

From difficulty *to development*

This was a decade in which ESCOM responded to increasing demand, despite difficult conditions, and then laid the foundation for major growth in the decade to come.

Emerging from the difficult early years of the decade due to the war, 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.



King William's Town

Hex River Power Station

Vierfontein Power Station

Simmerpan Power Station

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.

At first it was difficult for ESCOM to meet the rising electricity demand. The war had impacted 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.

Passing the baton

ESCOM's founding Chairman, Dr Hendrik J 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.



Chairman of ESCOM, Mr A Jacobs

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.

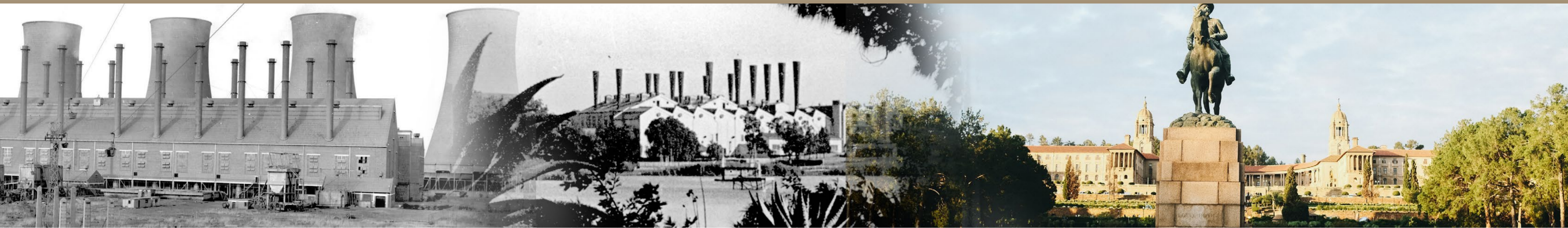
As ESCOM's third decade of serving South Africa drew to a close, Dr JT Hattingh succeeded Mr Albert Jacobs as the power utility's new Chairman.

Foundations for the future

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.



Chairman of ESCOM, Dr JT Hattingh



Klip Power Station

Simmerpan Power Station

The Union Buildings in Pretoria

Gauteng

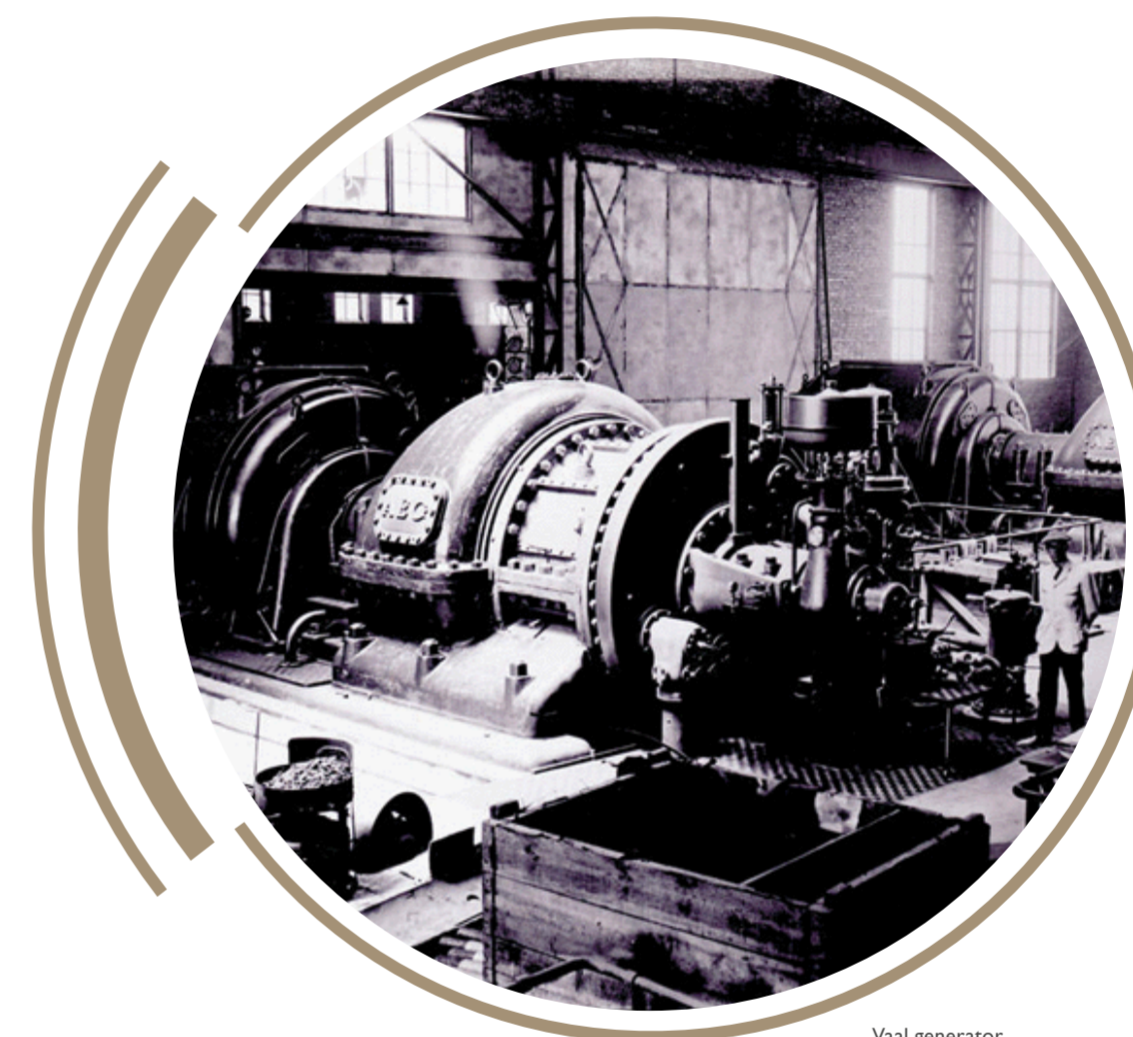
Gauteng Province, South Africa's mining and industrial heartland, has played a central role in Eskom's history. It was the discovery of gold in 1886 that led to the rapid growth of Johannesburg. In 1891 Johannesburg became South Africa's first city to install an electricity reticulation system, powered by steam engines.

The mines had a thirst for power, and joined forces to build small power stations to supplement the municipal system. In 1906 these smaller undertakings were bought out by the Victoria Falls Power Company (VFP) as the mining bosses sought large centralised power stations instead of small dedicated ones.

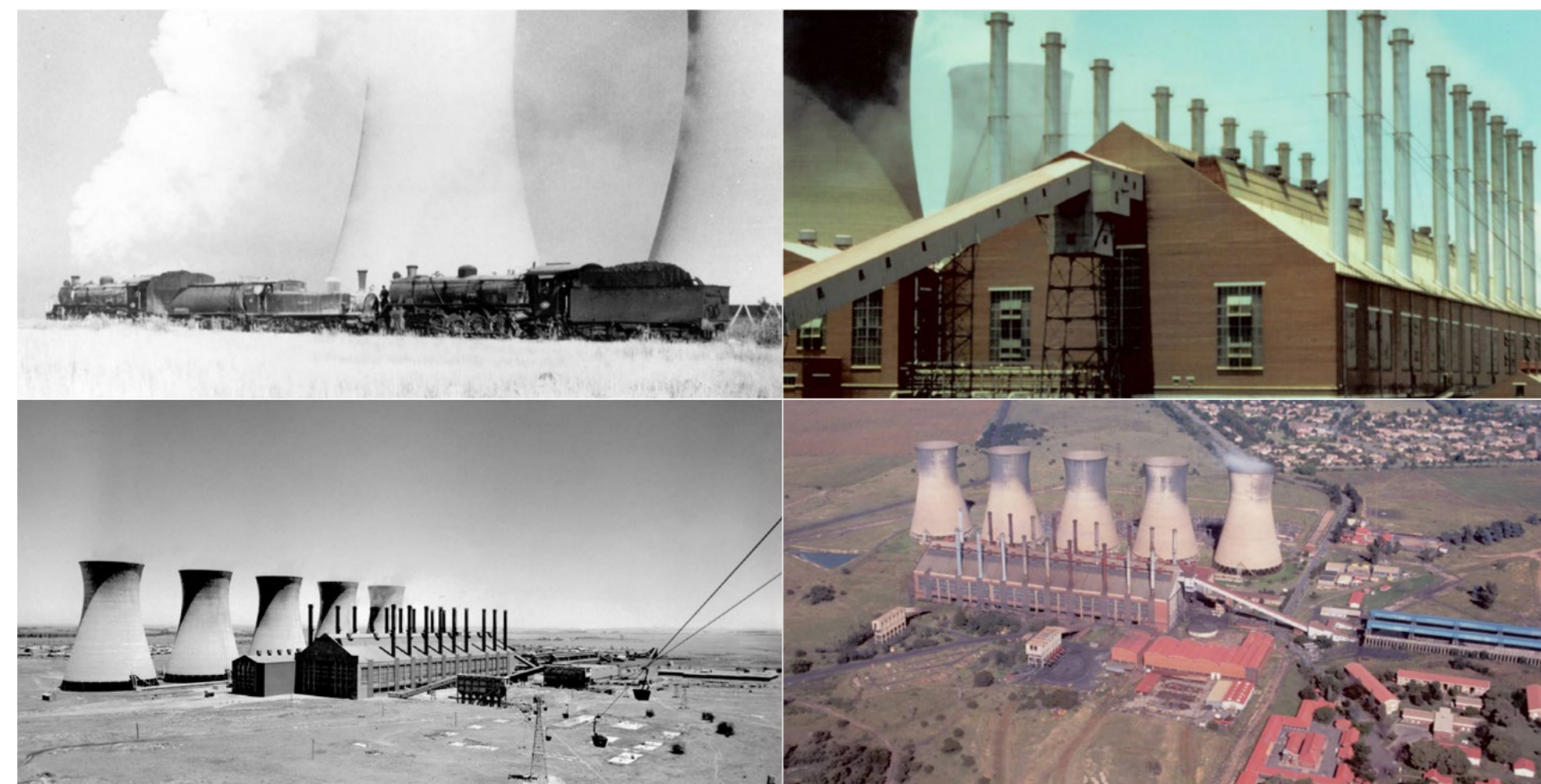
By 1915 the VFP – so named because its original aim had been to harness hydroelectric power from the Victoria Falls –

had built four thermal power stations (Brakpan, Simmerpan, Rosherville and Vereeniging) with a total installed capability of 160MW. These workhorses were taken over by ESCOM when it bought the VFP in 1948. Amazingly, the power stations produced power for a combined 223 years. The VFP also set up a system control centre at Simmerpan. This later developed into the Eskom National Control Center which today controls the national network, as well as the generation output of all Eskom's power stations.

In spite of the fact that the four original power stations were in Gauteng, Eskom itself has built only one power station in the province. This is the Klip Power Station in Vereeniging, which was designed and built by the VFP, and financed by ESCOM. Klip Power Station went into commercial operation in 1936 and had an installed capacity of 424MW.



Vaal generator



Vierfontein Power Station

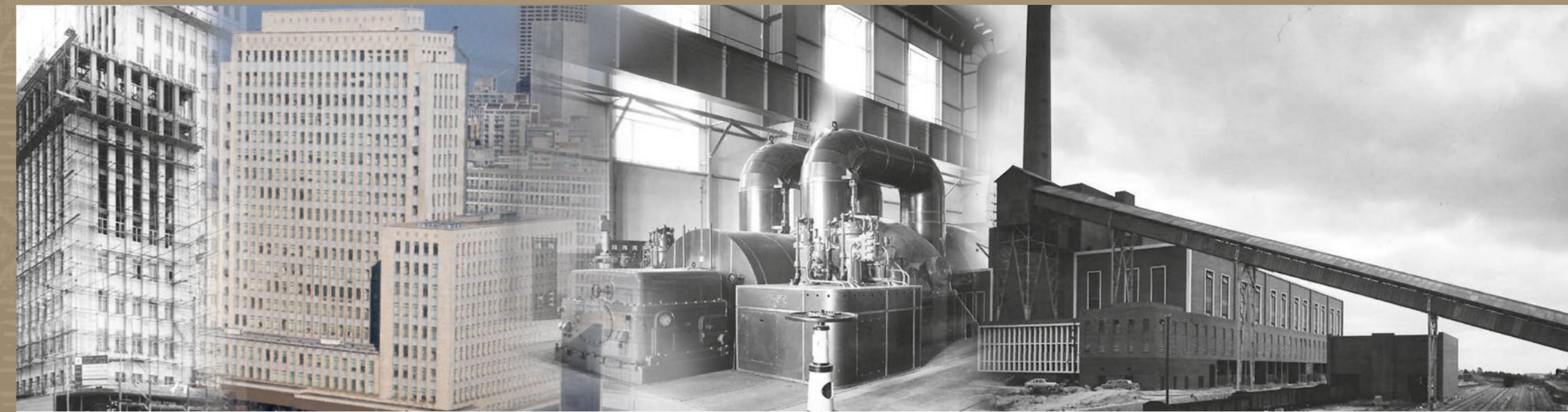
Gauteng has always been the home of Eskom's headquarters. Although ESCOM held its first meeting in Cape Town (20 March 1923), it soon situated its headquarters on the first storey of Hofman's Building in Johannesburg. In 1937 ESCOM House, the newly built headquarters, was officially opened by General Smuts. At 21 storeys, ESCOM House was the country's tallest building at the time. In 1958 the organisation's head offices moved to ESCOM Centre in Braamfontein. In 1977 ESCOM moved to its current location at Megawatt Park in Sunninghill.

Eskom still controls the national network from Simmerpan, in Germiston, Gauteng. Simmerpan is part of the telecommunications unit. In November 2012 Eskom officially opened its new Network Management Centre (NMC) in Simmerpan. The old NMC building, which was a converted workshop, posed a risk to Eskom's operations. For this reason, Eskom initiated the building of a new NMC building in 2009.

The NMC serves as control hub for the Eskom telecoms network, which consists of more than 1 500 nodes. The new NMC features a state-of-the-art video wall; a custom built video-conferencing room; a server room with dual power feeds; added security; and improved ergonomics.

Gauteng is the most power hungry of the nine provinces, and accounts for 13% of 11 000MW of Eskom's demand. Eskom's 757 000 Gauteng customers contribute R23.7 billion to the company's revenue. Since the inception of the electrification programme Eskom has made over 437 000 electrification connections in Gauteng. Eskom has also had a strong focus in Gauteng in terms of its demand-side management (DSM) programme. So far R300 million has been spent, 13 million CFL light bulbs have been installed, and 79 000 solar water heaters have been funded.

1953–1963



ESCOM Centre, Braamfontein

Umgeni turbines

Umgeni Power Station

Becoming South Africa's *powerhouse*

During this decade, ESCOM became the nation's powerhouse, and this was the beginning of the biggest industrial growth. By 1955 the capacity of ESCOM's power stations had more than doubled compared to 1945 and the growth continued...



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



Salt River 2 Power Station

Highveld Power Station

Hendrina Power Station

Ingagane Power Station



Chairman of ESCOM, Dr RL Straszacker

By 1960 ESCOM's annual electricity 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. At the decade's close, Dr RL Straszacker was appointed as ESCOM's Chairman, taking office in 1963.

A modern economy emerges

The 1950s saw the diversification of South Africa's economy with huge growth, in the mining as well as 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 beverage 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 as well as 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.





Durban skyline, KwaZulu-Natal

Umgeni Power Station, KwaZulu-Natal

Ingagane Power Station, KwaZulu-Natal

KwaZulu-Natal

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 burgeoning modern economy.

Taibos was the first of these power stations to be commissioned, going into commercial operation in 1954, followed by Wilge. 1959 saw Highveld, ESCOM's largest power station at the time, enter into commercial operation. 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 the 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.



Umgeni Power Station, KwaZulu-Natal

The Congella Power Station in KwaZulu-Natal (KZN) was one of the first of two coal-fired power stations to be built and operated by ESCOM. When it was commissioned in 1928, Congella was one of the most advanced power stations at the time. It was the first station in South Africa to burn pulverised coal and the first to be equipped with electrostatic precipitators. It was built to supply the SA Railways with a reliable source of power in order to drive their electrification programme.

Shortly before Congella was commissioned, ESCOM had also taken over the running of the Colenso Power Station from the Railways in 1927 so that the latter could focus its efforts on expanding the KwaZulu-Natal rail network. In 1954 the Umgeni Power Station was commissioned and together, the three stations formed the grid that drove the economy of the province.

In 1981 the waters of the Tugela River were harnessed at Bergville, in the Drakensberg. The Drakensberg Pumped Storage Scheme added 1 000MW of peaking power to the grid and is still in operation today. As part of the new build programme that commenced in 2005, Eskom initiated another pumped storage scheme at Ingula (on the border of KwaZulu-Natal and the Free State). On completion Ingula added a further 1 332MW of peaking power to the grid.

Eskom's electrification drive originated in KwaZulu-Natal. Peacetown, outside Ladysmith, was one of the first areas to be electrified, and the lessons learnt there were shared with other regions. Eskom now operates 336 power lines in the province,

measuring a total of 6 123km. Some 44 customer network centres serve more than 1.2 million customers

When electrification started in the late 1980s a huge expansion programme was necessary to strengthen the networks, as well as to increase the number of substations. The customer base increased significantly as electrification progressed.

This steep increase in customer numbers and customer queries necessitated the formation of customer contact centres. The Westville customer contact centre was established in 1997 and serves as the nerve centre of the region. Today KwaZulu-Natal has 48 000km of medium-voltage network, 7 167km of high-voltage lines network and 413 substations, serving 700 000 customers.

As in the other provinces, the Eskom Development Foundation is doing its part to develop local communities in KwaZulu-Natal. At least 25 000 people have benefited from a range of corporate social investment (CSI) initiatives, focusing on education, skills development, poverty alleviation and job creation.

1963 – 1973



Camden Power Station

Grootvlei Power Station

Matimba Power Station

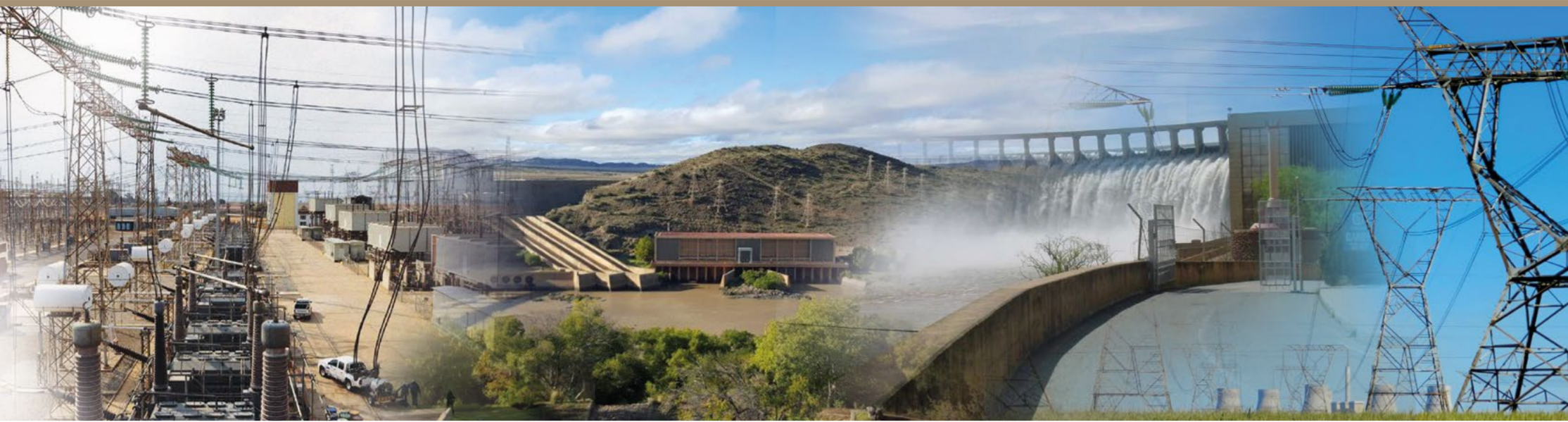
Arnot Power Station

A power giant *arises*

This was a period in which South Africa's growth was among the highest in the world. The country's growth was reflected in the rate at which ESCOM grew too.



Apollo Substation



Apollo Substation

Gariep Dam

South Africa's economic growth was the second highest in the world, and was reflected in ESCOM's substantial expansion. A national power network was established, destined to link the huge new power stations rising in the northeast 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 000km of power lines linking the country and providing a coordinated electricity supply. In global terms, ESCOM had become a giant in the electricity supply industry.

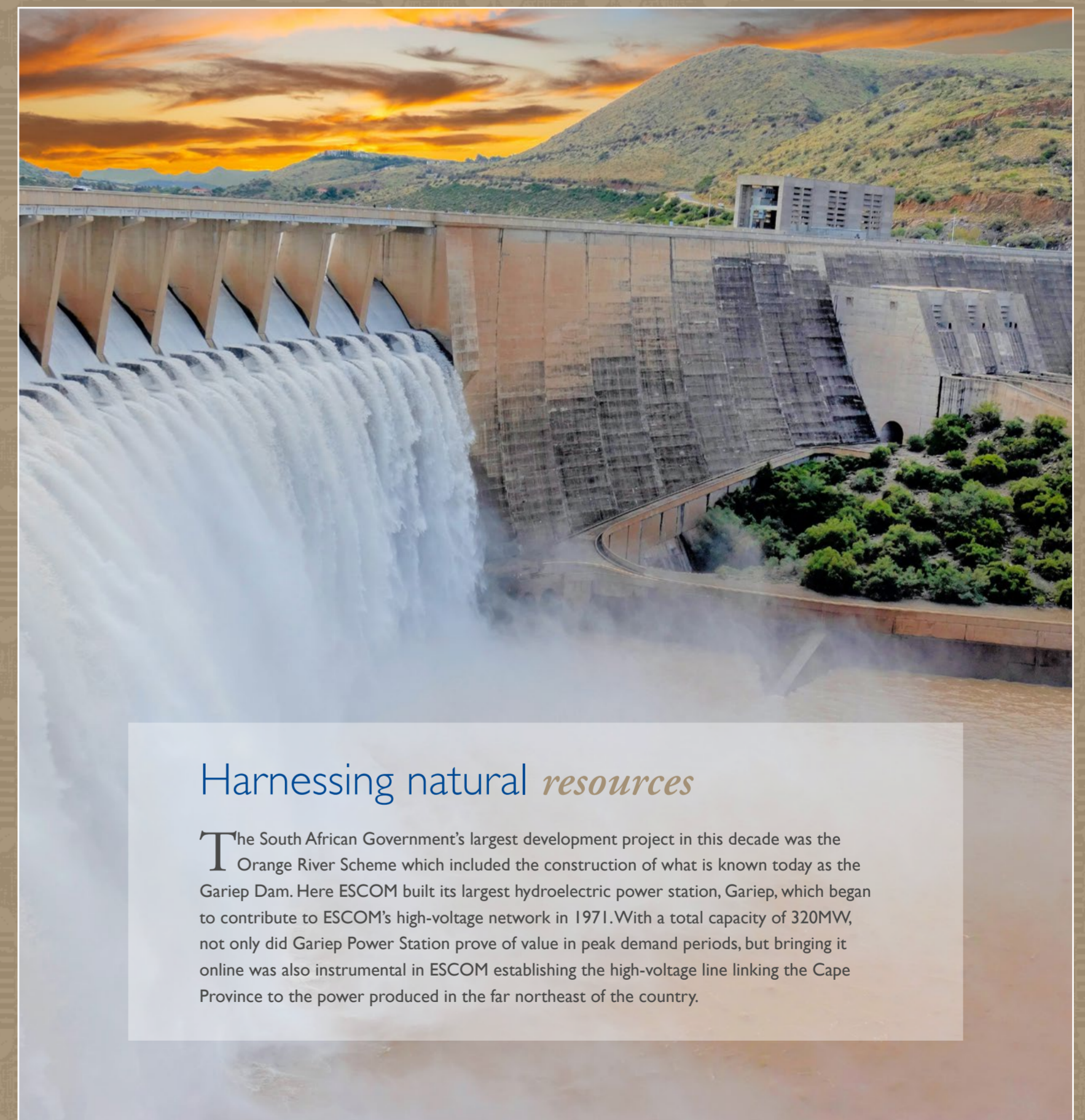
A networked national utility

In South Africa it had become apparent, as demand for electricity increased, that it was more economical 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 between 1 000 to 2 100MW.

Komati led the way in 1962, to be followed by Camden, Grootvlei, Hendrina and some units at 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. Komati Power Station was shut down in October 2022.

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

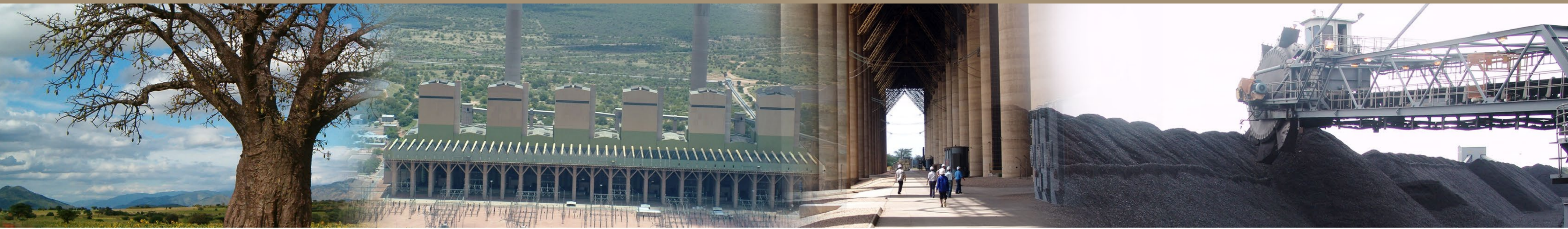
Transmission technology had advanced to the point where long lines with voltages up to 440kV were feasible and more and more of ESCOM's new high-voltage transmission towers appeared as the high-voltage network advanced south in stages of up to 450km at a time.



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 hydroelectric 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 demand 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 northeast of the country.

Gariep Hydroelectric Power Station, situated below the Gariep Dam wall



Gigantic baobab tree

Matimba Power Station

Matimba Power station

Matimba Power station

Limpopo

The commissioning of the Matimba Power Station (3 690MW) in Lephalale in 1987 continues to have a huge impact on the Limpopo Province. An abundant supply of electricity has allowed the rapid development of the agricultural sector as well as the extraction of the hitherto untapped mineral resources of the province. Matimba is also famous in Eskom for having the first female power station manager: Khumo Radebe.

Medupi was completed in 2021, adding almost 4 800MW to the grid and boosting the province's economy. It is estimated that the work done at Medupi had doubled the size of the town of Lephalale. Eskom's investment in Lephalale included R2.6 billion in housing and infrastructure. Medupi is expected to contribute as much as 12% to the national grid on its completion.

The development of Medupi, one of the largest coal-fired stations in the world, is driving development of the Waterberg coal field. The spinoff from the massive allied infrastructure investment is having a positive impact on the economy of the Limpopo Province.

The signs of dramatic growth are already evident. In the first decade of the 21st century this region's electricity network has recorded the fastest growth in South Africa. The electrification of schools

and villages has continued apace, and since the electrification programme began in 1991, 2 320 schools and 43 clinics have been electrified. A staggering 977 000 households have also been electrified in Limpopo since 1991. Limpopo boasts a network of over 47 000km of lines, 11 transmission substations and 179 transmission and distribution lines. Eskom's revenue from Limpopo is R10.56 billion, of which mining customers make up 45%, industrial customers 18%, and municipalities 17%.

Eskom employs almost 3 000 full-time staff members in Limpopo. The Medupi build project also placed contractual requirements on its contractors to train approximately 3 000 skills-development candidates in various trades and professions, including boiler making, welding and engineering. Money has also been spent on a further education and training college and a small business hub.

With all the excitement about Medupi, it is tempting to forget the many other opportunities in the Limpopo Province. The northern regions of South Africa have extremely high and consistent levels of solar radiation, and Limpopo is perfectly situated to harvest the power of the sun. The growth of solar energy could well be the next economic boom for the Limpopo Province.

Matimba Power Station



1973–1983



Kriel Power Station

Matla Power Station

Duvha Power Station

Growth, change & challenges

The 1970s saw the biggest growth in electricity consumption in South Africa's history. In 1973 demand grew by 12%, and by 13% the following year.



Chairman of ESCOM, Mr J H Smith

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.



Kriel Power Station

Drakensberg Power Scheme

Megawatt Park, Sandton



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 shutdowns 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 Drakensberg pumped storage power station. It was part of a project to transfer water over the Drakensberg from the Thukela River 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 hydroelectric power station, came into commercial operation. The construction of Palmiet Pumped Storage Scheme began in 1983.

Duvha Power Station



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 substantial 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 an 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.



Camden Power Station

Camden Power Station turbine

Camden Power Station

Grootvlei Power Station

Mpumalanga

Mpumalanga, in the northeast of South Africa, is a province with spectacular scenic beauty and an abundance of wildlife. Now, thanks to its vast coal reserves, Mpumalanga is home to most of Eskom's coal-fired power stations. Interestingly though, Eskom's first power station in the province was hydroelectric.

In 1925 ESCOM erected the Malieveldspruit Hydroelectric Station as a temporary measure while a bigger station was being built at the Sabie River Gorge. The Sabie River Gorge Hydroelectric Power Station came into operation in mid 1927 and was decommissioned in 1970. These two power stations were the first to be built and used by ESCOM in Mpumalanga.

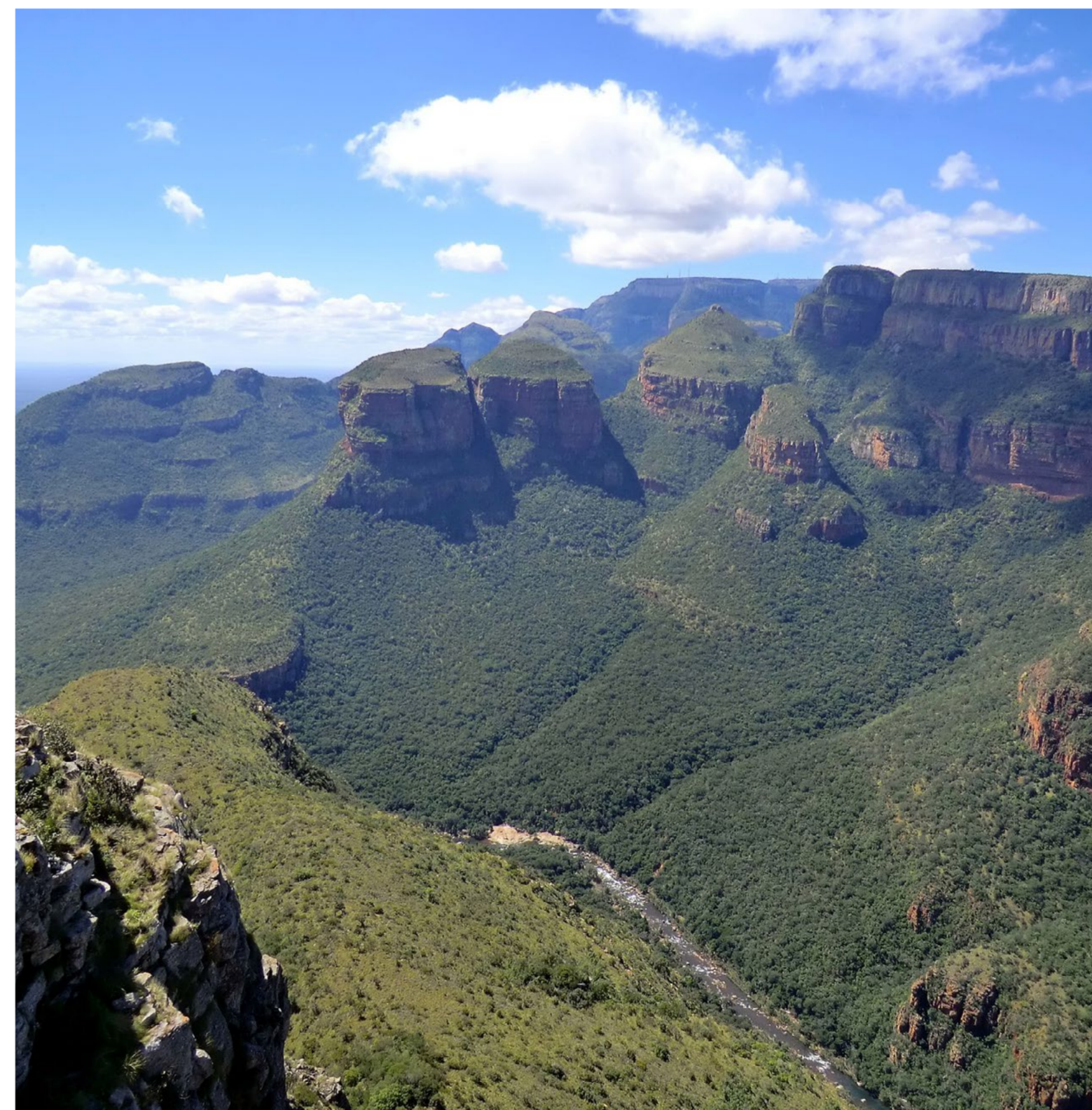
Sabie River Gorge produced a rather modest 1.35MW. Compare that to Kusile which, on completion, will produce 4 800MW. Kusile, which is situated in Mpumalanga near its border with Gauteng, is set to be South Africa's largest power station, and the largest coal-fired power station in the southern hemisphere. Kusile, which is due to come online in 2024 will do wonders for the local economy, and it is expected that it will boost the gross domestic product (GDP of the Nkangala District (where it is situated) by 25% a year during construction.

Kusile is merely the latest in an impressive list of coal-fired Mpumalanga behemoths. The Kendal Power Station (4 116MW) was completed in 1993 and was at the time, the world's largest coal-fired power station. Other large Mpumalanga power stations still in operation include Arnot (2 100MW);

Duvha (3 600MW); Hendrina (2 000MW); and Tutuka (3 654MW). It should also be noted that as part of Eskom's new build programme, three Mpumalanga power stations have been returned to service, either fully or partly. These power stations are Grootvlei, Komati and Camden. Out of the 15 coal-fired power stations that Eskom operates, 12 are in Mpumalanga, and boast a combined installed capacity of 30 047MW. This is the greater part of the total 37 745MW that Eskom generates. Besides the 12 power stations, Mpumalanga is also home to 63 high-voltage transmission lines; 29 transmission substations with 4 371km of line; over 37 000km of distribution lines; and 265 distribution substations. Eskom has 38 customer network centres to service the 560 000 customers in the province.

Not surprisingly, the mining, manufacturing and electricity industries contribute over 40% of Mpumalanga's GDP. Eskom has also contributed to the area through its electrification programme. Since 1991, Eskom, together with the National Electrification Fund, has electrified 953 schools and 11 clinics in Mpumalanga.

Eskom employs thousands of people in the province, including the thousands of people involved in the construction of Kusile.



Blyde River Canyon and the Three Rondavels

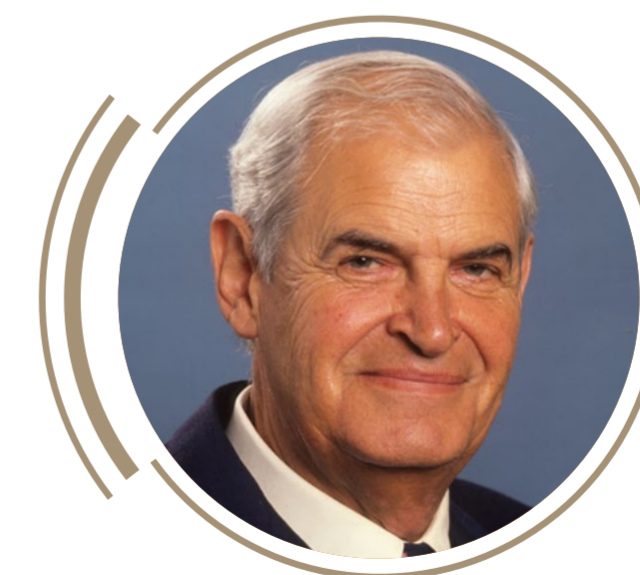
1983 – 1993



Koeberg Power Station

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.



Chairman of Eskom,
Dr J Maree



Koeberg Nuclear Power Station

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 reported 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 efficient water and coal usage, improved financial discipline, and greater employee development and recognition.

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 earlier were still being commissioned. Additional gas turbine and pumped storage power stations were completed, as was the first, and to date, the only nuclear power station in Africa – Koeberg – which began supplying electricity to the interconnected power system in 1984.

Expansion and *contraction*

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



Downsizing was just one way in which Dr Maree transformed the organisation. With the country undergoing a process of tremendous 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.



Square Kilometre Array (SKA) Project - the world's largest radio telescope

Big Hole - Kimberley

KAT-7 telescope at Klerefontein powered by Eskom Northern Cape's 33kV grid power line

Northern Cape

The Northern Cape is the largest and yet the most sparsely populated province of South Africa, but that does not signify a lack of activity or history. The Northern Cape's use of electricity dates back to 2 September 1882, when Kimberley became the first town in the southern hemisphere to install electric street lighting. In 1900 Kimberly established a municipal electricity undertaking and erected a small power station in Stockdale Street. In 1904 the De Beers Diamond Company completed its own 20MW power station, called the De Beers Power Station, and subsequently took over electricity supply from the municipality.

In the late 1940s De Beers, which no longer wanted to be in the electricity business, sold De Beers Power Station to ESCOM. In 1950, Central became the sole source of supply to ESCOM's newly established Cape Northern Undertaking. This undertaking covered 40 000km² – an area roughly the size of Switzerland – and brought home the point that as a national power utility, ESCOM had an obligation to supply electricity to remote areas.

In 1954 ESCOM embarked on a period of growth in the Northern Cape, supplying Boshof and Barkly West and expanding the network at Ulco and Vaalharts. By the time ESCOM celebrated its 50th anniversary in 1973, the Cape Northern Undertaking had grown from the initial three offices at three small buildings, and finally, to consolidated new offices at the Trust Centre.

Currently, the Northern Cape is home to the Square Kilometre Array (SKA) Project - the world's largest radio telescope ever. The SKA will enable astronomers to see back to a time before the first stars and galaxies formed. Since April 2013, following the Karoo Substation's upgrade, the KAT-7 telescope at Klerefontein has been powered by Eskom's Northern Cape 33kV grid power line. Backup power is also provided to the radio telescope and buildings on site. For this reason, the Northern Cape is ideally suited to take advantage of the advances in photovoltaic cells, and in other technologies that harness the sun's energy. Eskom will be working with the province to ensure South Africa makes the transition to renewable energy.



Early street light in Kimberley



The Big Hole in Kimberley

1993 – 2003



The electrification programme defined the decade

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.

Eskom was not only expected to supply electricity to a large consumer sector that had not had access to electricity 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".



Chairman of Eskom, Mr R Khoza





Pre-paid electricity was installed in homes

Trainees at Eskom College, known today as the Eskom Academy of Learning

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 electricity 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, with 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 operation in 1996. The last unit was handed over to Eskom by contractors in 2001 and the power station was officially opened by President Thabo Mbeki in 2003.

Eskom's first environmental report was published in 1995, and, in 2002, Eskom developed a sustainability strategy in addition to co-hosting (with Government) the World Summit on Sustainable Development.



Trainees at Eskom College, known today as the Eskom Academy of Learning

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 (RDP).

Eskom's targets for its own transformation were ambitious and it is to the credit of the company that, in a decade that was characterised by unresolved issues concerning 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 bursary and trainee programmes. In addition there was a focus on gender equity, with the allocation of bursaries to women increasing significantly. Eskom also sponsored a postgraduate programme in engineering management, into which some 40 women were enrolled. This initiative was aimed not only at achieving more opportunities for women, 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.



New upgraded sub-stations emerged

Eskom is constantly researching new and innovative methods to make agricultural production processes more cost-effective from an energy point of view

Eskom is constantly researching new and innovative methods to make agricultural production processes more cost-effective from an energy point of view

New upgraded sub-stations emerged

North West Province

The North West - or Bokone Bophirima in Setswana – is named for its geographical position in the country. In the period before the first democratic elections of 1994, the electricity to the North West was supplied by Eskom and the Bophutatswana Electrical Commission (Becor), which was the electricity redistributor of the then Bophuthatswana government. After 1994, Becor's assets were transferred to Eskom.



Hartbeespoort Dam arch

The North West Province is known as the Platinum Province, and is responsible for producing 94% of South Africa's platinum, 46% of the granite and 25% of the gold in the country. Mining contributes more than a third of the province's GDP, and the mines in Rustenburg and Brits produce more platinum than any other single platinum producer in the world. Eskom is key to the development of the mining industry in the province and is instrumental in supplying electricity to the mines. In line with mine safety, Eskom ensures that the power lines to the shafts provide the necessary redundancy, ensuring that the safety of those working underground is not compromised. Eskom generates, transmits and distributes electricity to the mines, working hard to ensure that the supply is uninterrupted as far as possible.

Eskom has commissioned the following Platinum Sub-transmission projects:

- 3 x 8MVA Excardo Substation (International Ferrochrome Metals)
- 2 x 20MVA Eland Substation Transformer (Xstrata)
- 2 x 20MVA Pilanesberg Mine (Boynton Mine)
- 3 x 20MVA Tharisa Minerals (Chrome Mine)

The following key customer projects are currently under construction:

- 2 x 40MVA Wesizwe Mine
- 2 x 20MVA Sedibelo Mine
- 2 x 20MVA 111kV overhead line Styldrift Mine
- 2 x 20MVA 33kV overhead line Styldrift Mine

Through its electrification drive, Eskom has already contributed greatly to the province. Eskom provides electricity to 60 679 customers, and since 2006 there have been 58 736 new electrification connections.

The North West Province has a large agricultural industry that relies on Eskom power: Eskom is constantly researching new and innovative methods to make agricultural production processes more cost-effective from an energy point of view. Emerging rural and commercial farmers can benefit from some of these innovative developments, which include agronomy, animal production, horticulture and forestry, intensive farming services, and food processing.

In 2010, the North West Operating Unit was nominated for an Eskom Chairman's Award for the outstanding work they did on the Minpro Substation. The 88kV line supplying the Impala Mines Furnace at the Minpro Substation was broken in two different places, requiring immediate attention, ingenuity and dedication. The committed members of the Operating Unit worked as a team to restore supply within 14 hours.

The province is also significant for Eskom in that the power supply from the new Medupi Power Station which is transmitted through this area into the Northern Cape and the Western Cape. This offers an opportunity for greater industrial development in the region.

2003–2013



Medupi Power Station

Kusile Power Station

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 8% and 10%. 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, led to the first nationwide loadshedding that caused disruption to all sectors of the economy. It was Eskom's darkest hour, damaging its reputation and public confidence in the utility.



Solar heating systems

Medupi Power Station



Kusile smoke stack



Kusile Power Station



Ingula Pumped Storage Scheme



Medupi Power Station

In the spirit of resilience during difficult times that had been long established as a core attribute of the company, Eskom and its employees rose to the challenge to do what was necessary to ensure a reliable and sustainable electricity supply. As part of its new build programme, Eskom returned mothballed power stations to service, with units from Camden, Grootvlei and Komati being commissioned and upgraded between 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 included a focus on Zero Harm, as well as the Back to Basics and Excellence Programmes, which were intended to make Eskom a high-performance organisation with a more diverse energy mix and reduced carbon footprint.



Cape Town Waterfront

Palmiet Pumped Storage Scheme

Sere Wind Farm

Railway system, Salt River Power Station

Western Cape

Eskom's proud journey began when the first meeting of the Electricity Supply Commission (ESCOM) was held in Cape Town on 20 March 1923. One of ESCOM's first projects was the electrification of the Cape Town suburban railway system in 1924. In that same year construction started on the Salt River Power Station in Paarden Island, to supply the railways and harbour.

There have been other firsts for the Western Cape, most notably in the field of nuclear power. In 1966 ESCOM purchased the farm Duynfontein (30 km outside of Cape Town) as a possible site for a nuclear power station. In 1972 the decision was taken to construct Koeberg Nuclear Power Station on that site. In April 1984 the first unit of Koeberg was synchronised onto the grid and then Unit 2 followed suit in 1985. Koeberg boasts the largest turbine generators in the southern hemisphere and is also the southernmost nuclear power station in the world.

first wind turbines in sub-Saharan Africa. In 2013 construction began on the Sere Wind Farm in Vredendal. Sere is adding 100MW of renewable energy to the grid; as well as creating jobs and powering industry. There is much room for the growth of renewables in the Western Cape.

There are close to 5 000 permanent Eskom employees in the Western Cape Province, across all Eskom divisions. Many of these Guardians are involved in Eskom's i-Volunteer programme, where Eskom employees come together to assist organisations in various ways. Since 1999, the Western Cape Operating Unit has spent about R30 million on social and economic development, and has formed partnerships with various institutions to drive many initiatives that make a difference in people's lives. The initiatives include the Radio Good Hope FM's Toy-Toy Campaign; outreach programmes with the Red Cross Children's Hospital; as well as support for shelters, frail care facilities, schools and community projects.

In 1976 Acacia (171MW), one of ESCOM's first gas turbine power stations, was commissioned in Cape Town. In 1990 the Palmiet Pumped Storage Scheme, at Grabouw in the Western Cape, was fully commissioned and added 400MW of peaking capacity to the grid. Palmiet was a joint venture between Eskom and the Department of Water Affairs, and it also supplies water to the City of Cape Town.

In 2002 Eskom erected three wind turbines at an experimental wind energy farm at Klipheuvel in the Western Cape. At the time of construction, they were the



Radio Good Hope FM's Toy-Toy Campaign

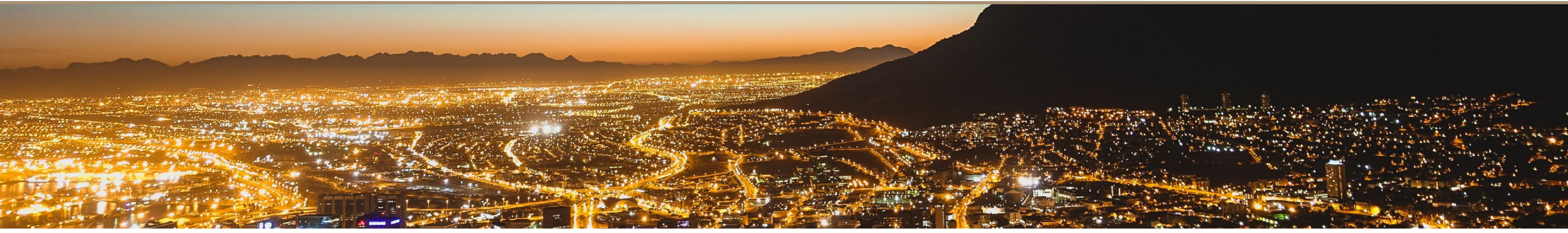


Aerial view of Cape Town

Eskom also makes a major difference to people's lives in the Western Cape through its FBE (Free Basic Electricity) Programme. Municipalities in the province identified 108 800 indigent households, 99,8% of which have been configured to collect FBE. From January 2013 88,2% of indigent customers were collecting FBE.



Eskom Development Foundation's mobile clinic



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 power 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.



Partnering to keep the lights on at Majuba Power Station

Eskom's environmental obligations had to remain a focus even as the organisation was 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 was ongoing as was the implementation of the electrification programme, delivering electricity to the four millionth household that was connected in June, 2012.

The utility has also continued to deliver on its commitments to broader socioeconomic 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



Powering the South African economy, Johannesburg at night.

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 with previously no access to electricity or engaging in corporate social initiatives, Eskom has a significant impact on the lives of most people in the country. It 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 was 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.



Ankerlig Gas Turbine power station

Eskom, an economic *growth engine*

The infrastructure expansion programme was one of the largest current drivers of the South African economy, and was 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 new build programme, Eskom aspired to ensure that new industries wanting to establish in South Africa were 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 aims to ensure that its investments create sustainable jobs within South Africa and lasting value for the country's economy.

Eskom, through the localisation and supplier development programme, ensures 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 R65 billion to local South African suppliers.

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 7 million additional households having been provided with electricity since 1991.

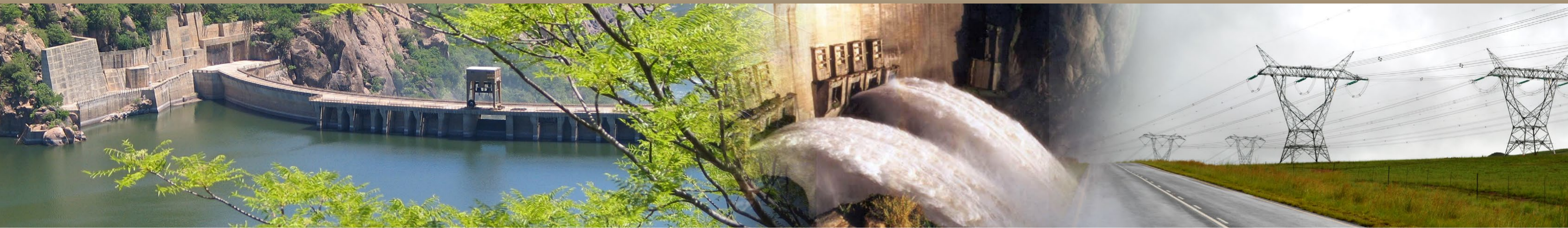


Connecting the four millionth customer: then minister Mr Malusi Gigaba, Minister of Public Enterprises and Ms Noxolo Kiviet, Eastern Cape Premier, congratulate home-owners, Mr and Mrs Saphatha and Nobuntu Gagula.

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, which allowed for over 15 000 rural household connections. Shortly after a ceremony at the substation, the then Minister of Public Enterprises, Mr Malusi Gigaba, cut the ribbon on the new electricity meter in the home of Mr Saphatha and Mrs Nobuntu Gagula, the four millionth household to be connected as a result of the electrification programme.

To the local community, the event signalled the end of the 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.



The flagship regional projects that Eskom has been involved in over the years include the Hidroeléctrica De Cahora Bassa (HCB) hydro scheme

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 foreign policy objectives supporting SADC's vision of power for the people of southern Africa within a regional community.

Powering new industrial development

South Africa through Eskom has been involved in the electricity sector in various countries in Africa for a long time. 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 ongoing participation in the SADC region through the Southern African Power Pool (SAPP).

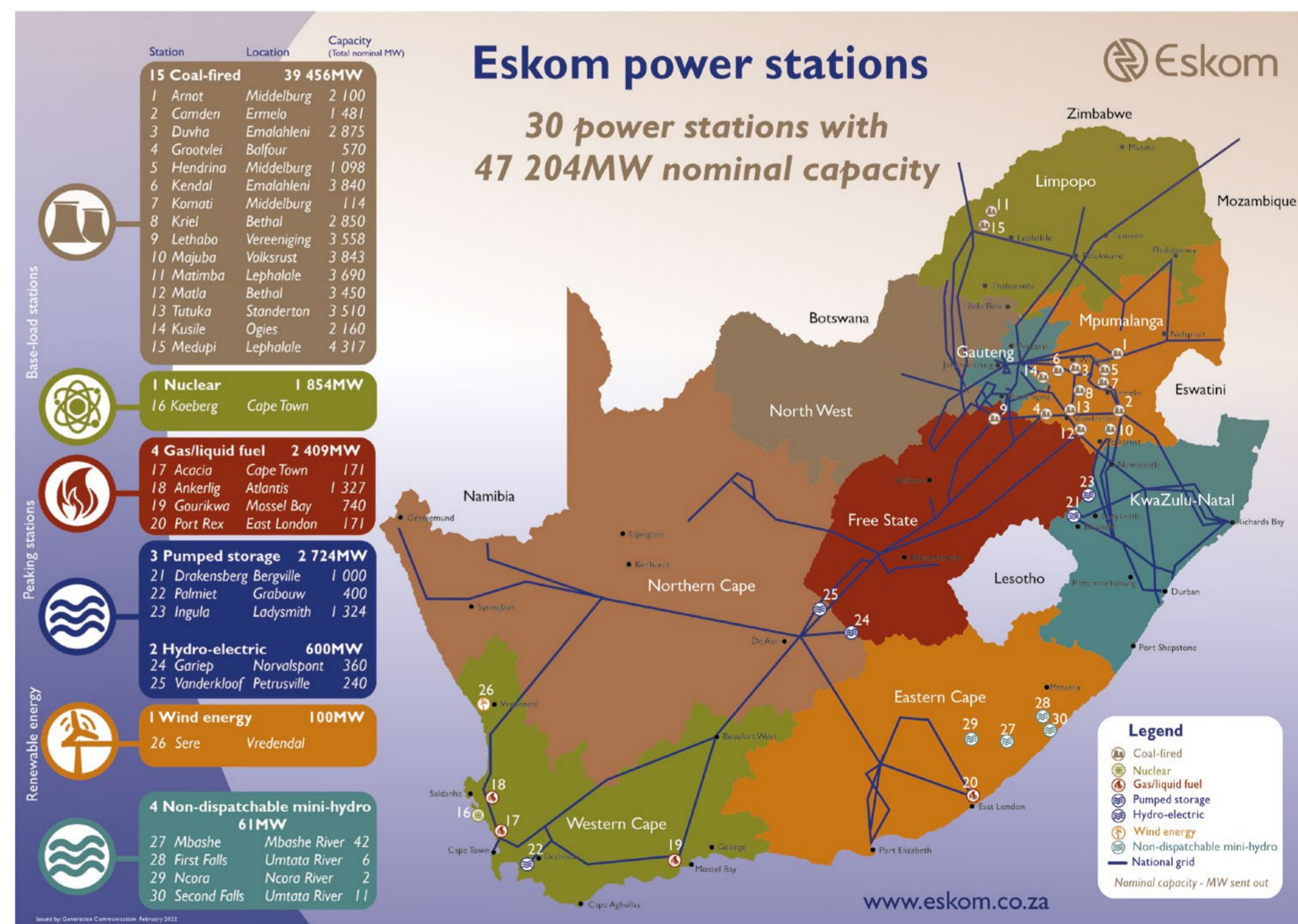
Participation in East and West Africa (Uganda and Mali, respectively) has been undertaken through long-term operating and maintenance concession agreements. The flagship regional projects that Eskom has been involved in over the years include the Hidroeléctrica De Cahora Bassa (HCB) hydro scheme, with 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 a pivotal role in the transmission interconnection that connected Zimbabwe, Botswana and South Africa in 1995, opening up a corridor for electricity to flow as far as the Democratic Republic of the Congo (DRC) in the north and Namibia in the far southwest. Eskom's statement of purpose

at the time, "providing sustainable electricity solutions to grow the economy and improve the quality of life of people in South Africa and in the region" provided a context for Eskom's role in SADC, and highlighted that Eskom directly supports South Africa's developmental role in the entire region.

A number of initiatives are currently under way 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 continues to contribute to the continental power sector development through its participation in institutions such as the Association of Power Utilities of Africa (APUA) and the Power Institute of Eastern and Southern Africa (PIESA).





Sere Wind farm

Lethabo Power Station

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 farm in the Western Cape was completed in March 2015 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 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.

The utility aims to further increase its water usage efficiency to reduce water consumption. Both coal-fired new build stations, Medupi and Kusile, 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 watersaving technologies, such as mine water desalination, cold-lime softening and other improved water management strategies.



Constructing the Sere Wind Farm



Control room

Eskom containers

Distribution technical crew

Megawatt Park office



Liveline Maintenance Teams

Social development *through electricity provision*

Eskom generates around 80% 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.

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 about 40 000 people, making Eskom one of the country's largest employers. However, just as Eskom's impact on the economy reaches far beyond its own operations, 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 spent more than R25 billion 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.

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.



Ingula Water Week Programme

Eskom Flower Power Drive

Educational Support Drives

Educational Support Drives

Leading social transformation

A strategy to make a difference

Eskom's corporate footprint includes its employees, customers, suppliers, local communities 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 broader community. It is guided by a clear and well-developed strategy that takes into consideration the social landscape, the needs of the community, 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 communication and the regular issuing 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 Eskom'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, healthcare and social and community development.

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.

From the outset, the Eskom Development 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 objectives.

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.



Educational Drive

Timbali Technology Incubator Supports Emerging Farmers

Food Schemes

Educational Support Drives

Laboratory Training Scheme

Educational Support Drives

2013 – 2023



Kusile Power Station

Koeberg Power Station

Redefining Eskom *and South Africa's outlook*

In this decade, the national power utility underwent extensive changes to redefine its performance by tackling organisational inefficiencies, eradicating corruption, confronting extensive disruptions to reliable power supply, embracing renewable energy, and transformative socio-economic policies through a turnaround plan to re-establish Eskom as a driver of South Africa's economy

The backdrop to this decade is a shrinking global economy, increased operating costs, industrial action, the COVID-19 pandemic's financial ramifications, a sharp deterioration in plant performance due to low maintenance capacity of an ageing generation fleet, a decline in liquidity, a rapidly changing energy environment, evolving electricity consumption patterns, and the impact of climate change.

Loadshedding once again became a national point of focus as poor base-load generation availability due to high levels of planned and unplanned maintenance, led to diminishing reserve capacity.





Medupi Power Station

Komati Power Station

Hendrina Power Station

Despite the challenges of this dark period in Eskom's history, the organisation embraces its centenary in 2023 with a bold strategy to build South Africa into a powerhouse once more.



In the face of unprecedented challenges, Eskom's initiatives have increased the number of households it electrifies since 1991 to power around 90% of households, which accounts for hundreds of thousands of businesses, from mines and large-scale industries to home-based businesses. In context, this is significantly higher than the 40% electrification rate average for Africa.

Noteworthy accomplishments include: Eskom kickstarting the continent's biggest investments into renewable energy; increasing electricity generation capacity from 37 636MW to 46 466MW (an increase of 9 396MW since 2015 alone); utilised gas-fired stations, wind and solar plants, and IPPs as peaking capacity; and initiated programmes to add a further 6 000MW by add a further ~8 GW storage by 2035, and around 120GW of new capacity by 2050.

In 2016, Eskom joined GO15, a group of the world's 19 largest power grid operators. Combined, GO15's members deliver more than 66% of global electricity generation to more than 50% of the world's population. Furthermore, Eskom's then Group Executive of Transmission, Thava Govender, was elected as Vice President of the GO15 Steering Board for 2017 and President designate in 2018.

In 2018, Eskom rolled out the first phase of its new turnaround strategy, in which the organisation was functionally separated into three separate entities: Generation, Transmission and Distribution.

This meant each entity would have independent assets, debt, employees, and financial statements, while the corporate centre would remain the functional leader. It also entrenched transparency, and optimised operational capabilities and governance protocols to improve financial performance.



Medupi Power Station



Medupi, which began construction in 2008, was completed in 2021, adding 4 764MW through its six super critical boilers and six turbine generator units. It is the world's largest dry-cooled coal-fired power station, and its GE Power System was awarded the Global Project Excellence Award at the 2016 IPMA Project Excellence Awards.

Facing frustrations

The past decade has not been without its problems and predicaments. Over the past decade, Eskom's liquidity and financial sustainability have been threatened by a lack of cost-reflective tariffs, high debt servicing costs, escalating arrear municipal debt and poor plant performance due to unplanned breakdowns, requiring excessive utilisation of open-cycle gas turbines to avoid or minimise loadshedding. This has been exacerbated by the effects of corruption and mismanagement.

More than half of the generation fleet is almost 40 years old and has been run at very high utilisation factors, above the international norm, for many years. There has been a chronic underinvestment in regular planned maintenance and capital refurbishments. During this decade, the energy availability factor (EAF) reached an all-time low, while emissions

performance deteriorated to the worst levels in more than 20 years. The country also experienced the highest levels of loadshedding ever seen. It must be remembered though that loadshedding is an important measure to prevent a total power system collapse.

The lack of cost-reflective tariffs awarded by the National Energy Regulator of South Africa (NERSA) has been an ongoing challenge since 2006, requiring increased reliance on debt to fund the revenue shortfall. Eskom has achieved some progress in closing the gap towards cost-reflective tariffs in recent years by challenging NERSA's decisions through judicial review. However, court processes remain slow and even favourable judgments take some time to lead to higher tariff levels.



Kriel Power Station

The future *renewed*

Eskom's bold vision of a Just Energy Transition signals the winds of change for the country, economic activity and the organisation's sustainability for the next 100 years.

The organisation's reputation suffered greatly in light of high plant unavailability due to unplanned breakdowns leading to high levels of loadshedding, industrial action and deliberate sabotage. Furthermore, leadership stability has been a challenge within Eskom: this decade has seen ten changes in the Group Chief Executive position and five at a Chairman level over the same period.

Three pillars were identified to align strategies and programmes for the overall sustainability of Eskom: Stabilise, Optimise and Grow. The "optimise" pillar ensures the alignment of the business and operations with the broad expectations defined in DPE's Roadmap for Eskom in a Reformed Electricity Supply Industry (released in 2019), while ensuring that optimisation is achieved through the implementation of appropriate revised business models.

The "grow" pillar recognises that we face a rapidly changing energy market and positions the company to identify opportunities to prepare for growth. The new operating model will become a platform for growth readiness and enable Eskom to achieve efficiencies as well as quick and profitable returns. However, this is heavily dependent on a correction in the tariff levels to cover prudent operating costs and allow a fair return.

By the end of 2022, the organisation had transitioned from the first phase and commenced the process of legal separation into three wholly-owned subsidiaries, made considerable strides in stabilisation, and set itself on a growth trajectory for 2023 and beyond.

Eskom's turnaround strategy redefines its role in the shifting energy landscape, promises to reduce its emissions footprint through innovation, and sets to reshape its business model to ensure financial viability and organisational transparency. The dawn of renewable energy has electrified Eskom's vision.

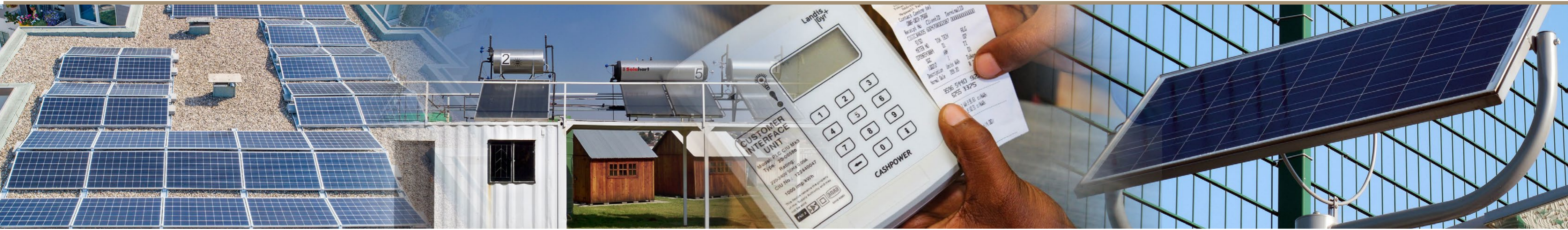
JET is about leveraging the opportunities presented by the transition towards a cleaner and greener energy future, while enabling the creation of new job opportunities for those displaced by the replacement of coal by these cleaner technologies. Therefore, it means a transition towards a low-carbon, climate-resilient economy and society in a manner that does not impede socio-economic development, but results in an increase in sustainable jobs. It is not a sudden shift in economic activity, but occurs in a phased manner over time. To this end, the Government partnered with Eskom to prepare 14 000MW of renewable energy as part of the IRP's planned 30GW of new capacity by 2032.



Eskom outlined a need for 2 890km of high-voltage lines and 60 transformers by 2027, requiring an investment of R72.2 billion. To meet the additional capacity requirements for the IRP's targets for 2032, Eskom's transmission infrastructure would need to increase by an additional 11 000km of high-voltage lines and 110 transformers.

As a framework for the future of South Africa's energy resources, and to confront the future's challenges today, Eskom established its Just Energy Transition (JET) Office in 2020 to advance the transition to a greener and cleaner energy future.

JET envisions a net-zero carbon emission future by 2050, a significant socio-economic impact with a major contribution to a sustainable future for all South Africans. By following a JET pathway, it will be possible to simultaneously spur economic growth, create sustainable jobs and put emissions into structural decline, as opposed to an electricity supply that is seen to compromise economic growth. Eskom is a key enabler of South Africa's transition towards an economically inclusive and lower carbon future.



Focusing on a Just Energy Transition

Eskom's Just Energy Transition (JET) programme

Eskom's JET vision is net zero emissions by 2050 with an increase in sustainable jobs underpinned by strategic objectives.

Foreign governments and lenders have committed to providing concessional financing to the South African Government and Eskom for the following:

- Expanding and strengthening its electricity transmission and distribution grids to accommodate the addition of significant technologies for new renewable electricity generation and grid integration.
- Repurposing and repowering power stations to be retired in a way that seeks to minimise the negative socio-economic impacts on direct and indirect stakeholders in the coal value chains associated with said power stations.
- Enabling Eskom to construct new, no-carbon and low carbon electricity generation technologies to replace the coal-fired generation capacity to be retired, provided that Eskom projects will be supplementary to the new generation capacity to be built by the private sector.
- The deployment of utility-scale energy storage technologies aimed at increasing grid stability and flexibility.








Photovoltaic panels at the Komati Power Station



A microgrid provides solar energy at the Komati Power Station site

Electrifying future generations

The Just Energy Transition is built upon 5 pillars:

- 
Employment: 150 000 – 320 000 net new permanent jobs to be created nationally, 25 000 – 72 000 new jobs to be created in Mpumalanga by 2050.
- 
Economy: Contribute to the reindustrialisation of South Africa with sufficient generation and new renewable-based industries.
- 
Energy: 8 GW firm capacity, ~48GW renewable capacity and ~8GW storage added by 2035, and around 120GW of new capacity by 2050.
- 
Equity: Eskom appreciates the importance of a transition that is fair, just and equitable. The Komati and Grootvlei training centres will catalyse the re-skilling of staff and communities alike.
- 
Environment: 161 MtCO₂e reduction of emissions by 2050 (79 MtCO₂e by 2035) and 226 bn litres reduction in water use by 2050.

Repurposing and repowering coal stations

Komati Power Station shut down in October 2022. The station will serve as the flagship site for our repowering and repurposing programme to demonstrate our JET commitment to shift from coal dependency to producing power through renewable energy on existing Eskom land using existing infrastructure.

The Komati mitigation plan outlines potential projects that can be undertaken regionally, locally and at the power station to mitigate against indirect and induced effects of the shutdown.

We have begun installation of a 500kWp agrivoltaic demonstration plant. In total, 370MW of renewable energy – including wind and solar – and battery storage, is planned to be deployed. A microgrid assembly and fabrication factory is being set up in the disused Komati workshops.

The Komati Training Facility, for which we received R48 million in grant funding from the Global Energy Alliance for People and Planet, is being established in partnership with the South African Renewable Energy Technology Centre (SARETEC) to facilitate the skilling of Eskom workers and the local community in the Komati area.

