



Powering your world

The Light where the Sun Rises

Eskom's story in the Eastern Cape

1923-2013





Foreword

Sustainable growth and development is probably one of the main objectives of any business and/or country across the world. It is thus not surprising that Eskom's main purpose is to provide sustainable electricity solutions to grow the economy and improve the quality of life of the people of South Africa and the region. Looking at the Eastern Cape and the needs of the Province it is easy to see that Eskom can indeed make an impact on the quality of life of its people.

Through the Eskom electrification programme we improve the lives of thousands of people on an annual basis. While the electrification backlog in the Province still amounts to more than 500,000 households, who do not have access to electricity, we have managed to bring light to more than 717,385 houses since 1992 when we started with the electrification programme.

Through the proposed infrastructure development programme envisaged for the next 5 years we will not only pave the way for the eradication of the backlog but also create the infrastructure required for much needed development. The potential of having the second nuclear power station in South Africa located in the Province cannot be overlooked. Job creation during the construction of such a facility, with a construction period of well over 10 years, and the maintenance and operations of the station for 50 plus years could be an enormous economic injection into the project area.

With the introduction of Independent Power Producers to the South African electricity market a number of developers have chosen the Eastern Cape for the construction of their Wind Energy Facilities. By connecting to the Eskom grid these facilities will assist in providing a stable electricity supply both in terms of availability and reliability of supply. Electricity can indeed be regarded as the life blood of the economy or if you are squeamish (like me) we can relate it to the oxygen needed by the economy to grow. It should be easy to see the potential of the Eastern Cape of having a major influence on the next chapter of Eskom.

Without the people of this great organisation, their hard work, commitment, dedication and sacrifices it would however not be possible. I would like to thank each and every one before me, those that worked with me and those that will be here in decades to come for making this organisation what it is and in building the legacy that people will talk about in another 90 years time.

Thys Möller
General Manager
Eastern Cape Operating Unit



Preface

Reaching the tip of the highest mountain is a journey that starts with a single step. Sometimes after taking that first step half the job is done. Such a step was taken on the 1st March 1923 with the establishment of the Electricity Supply Commission (ESCOM). Men of incredible intellect, foresight, vision and courage have left Eskom guardians with a heritage which is second to none in the South African context. With a history which radiates innovation and excellence from the 1920s up till this very day, Eskom stands today as the powerhouse of Southern Africa with influences around the globe. More importantly and relevantly, the Eastern Cape has its own unique story to tell about the influence Eskom has had since the company arrived eMpuma Koloni.

The Eastern Cape in her most humble and melancholy of voices has hummed her story ever so gently through her people, towns and cities. The Eastern Cape with her unmistakable natural splendour which rivals some of the best the world has to offer, she spends her days gazing at the horizon and appreciates the rise of the sun as it has always promised a brighter tomorrow. The arrival of Eskom in the Eastern Cape opened a new world of possibilities for her people, towns and cities; the sun was no longer to be the only light. The Eskom story in the Eastern Cape is one that can be forged from a unified commitment of its leadership for a better future, persistence towards growth and development of industry and government's unwavering debt to the strides made by many of the Eastern Cape's brave men and women.

The Light where the Sun Rises – Eskom's Story in the Eastern Cape is a tribute to the heritage we as the Eastern Cape Operating Unit have inherited from some inventive and resourceful predecessors who moulded this organisation to the formidable position it currently finds itself in. This booklet highlights the significant instances within the business that have seen the rise of the energy industry in the province in alignment with the provinces growth and development. Moreover, it identifies strategic power stations that have placed the Eastern Cape in an economically competitive and exciting position.

After nine decades of existence an organisation experiences a variety of stages of growth with its peaks and troughs, its rise and falls, it knows how to get up from a fall, it learns vital lessons, it knows the taste of defeat and victory, it knows how to adjust to a changing environment, it knows how to lead in times of darkness and it knows what is its core and what makes it ever ready for new challenges. Eskom has gone through all this and much more and today it's still standing strong with intentions of getting stronger.

Ndisatshaya

Ntombekhayo Mafumbatha

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Namkelekile eMpuma Koloni, welcome to the Eastern Cape



The Eastern Cape, on the southernmost coast of Africa, is the second largest of South Africa's nine provinces, covering around 14% (169 580 square kilometres) of the country's land mass. Some 65% of the province's 6.9-million people live in rural areas; most of the remaining population live and work in towns and cities, especially the two main cities of Port Elizabeth and East London. Two thirds of the population lives in the ex-homelands, or 'bantustan', areas of the Transkei and Ciskei . Over 83% of the Eastern Cape people speak isiXhosa, while 9.3% speak Afrikaans and only 3.6% speak English. Historically, the Eastern Cape was a crucible of conflict. This was the eastern 'border' where the early Cape colonial settlers clashed with the Xhosa, the Khoi and the San. This was the birthplace of apartheid resistance movements – the African National Congress, the Pan Africanist Congress, and the Black Consciousness Movement, with famous leaders from the province such as Nelson Mandela, Thabo Mbeki and the late Steve Biko.

The Eastern Cape holds all that South Africa, a land of great diversity, has to offer, all in one province. It contains all seven of South Africa's biomes or ecological zones, and offers an unrivalled range of climates, landscapes and cultures. For the tourist, industrialist or investor, it is a frontier of diversity, potential and economic opportunity. For the people who live here, the province is a frontier at the cutting edge of social and economic transformation. Major industries in the Eastern Cape are the automotive and component manufacturing; agriculture; agro-processing; tourism.

Former President Nelson Mandela, whose home is on the hills of the Transkei, once said: 'After having travelled to many distant places, I still find the Eastern Cape to be a region full of rich, unused potential.'

Eastern Cape infrastructure

While the cities and sophisticated industrial areas of the Eastern Cape are well served by infrastructure, its rural areas still battle with huge backlogs on service delivery, left by apartheid. Recognising that good roads, railways, ports and other infrastructure is a foundation for growth, the province has made efforts in addressing backlogs in provision of schools, clinics, roads, water and sanitation a priority. Public spending on infrastructure in the former 'homeland' areas is rising dramatically.

Through the Provincial Growth and Development Plan (PGDP), the government's Economic Growth and Infrastructure Cabinet and Cluster committees, and investments by state utility companies such as Eskom, Telkom and Transnet, significant resources are going to the province's two Industrial Development Zones (IDZs), the East London Industrial Development Zone and Coega Industrial Development Zone, to road and rail construction and refurbishment, and to developing the Ngqura Port at the Coega IDZ. All of this provides a sound basis for new private sector investment.

Other important projects include: the Kei Rail Corridor Project, between East London and Mthatha, which opens a vital transport link for new investors to the East London IDZ; and the planned N2 toll road from Durban to East London, which will open easier trade links out of and into the province.

Air transport is of great importance in the Eastern Cape with its diversity and distance between modern urban centres and rural areas. Air infrastructure includes two national airports in Port Elizabeth and East London, the airport in Mthatha and 16 air strips in small towns and rural areas owned by municipalities or the private sector. Although the Bulembu airport near Bhisho has no scheduled flights, it is used by organisations such as emergency medical services or private operators and is large enough to accommodate international flights.

With its 800km coastline, the Eastern Cape has always been a seafaring area. The ports of Port Elizabeth and East London are growing rapidly in line with South Africa's strong performance as one of the fastest-growing exporters in the world. The Eastern Cape now has a third port, the new deep-water port of Ngqura, linked to the Coega IDZ.

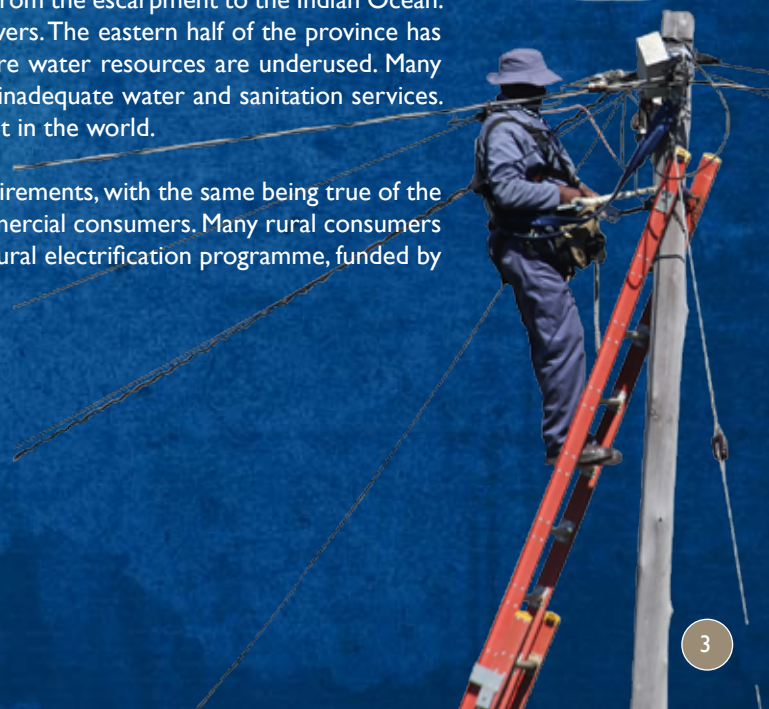
The Eastern Cape has an extensive rail network of 3,360km and 450 stations, which is used for commuters, mainline passengers and freight. There are two main railway lines from Port Elizabeth and East London to Gauteng and a series of branch lines. The two main lines are the only electrified lines in the province, although the East London line is not yet fully electrified all the way to Gauteng.

The Eastern Cape has an extensive network of 55,088km of roads servicing the large rural province, of which only 5,746km are tarred. Some 80% of the networks are district, minor and access roads intended to service rural areas.

Telecommunications has developed immensely in the Eastern Cape over the past 10 years with the introduction and rapid popularity of mobile telephones, which have greatly increased telephone access in rural areas.

The Eastern Cape is rich in water resources, with many rivers running from the escarpment to the Indian Ocean. The drier, western half of the province has lower rainfall and fewer rivers. The eastern half of the province has higher rainfall and more rivers, especially in the former Transkei, where water resources are underused. Many households in the former homeland areas, however, continue to have inadequate water and sanitation services. The quality of piped water in all parts of South Africa is among the best in the world.

Grid electricity provides 98% of South Africa's commercial power requirements, with the same being true of the Eastern Cape. Eskom sells electricity to residential, industrial and commercial consumers. Many rural consumers are still without electricity, although this is changing through Eskom's rural electrification programme, funded by the Department of Energy. Indeed the province is a blossoming aloe.



Breaking of dawn



Dr Hendrik van der Bijl

Much of the modern world was still captive to darkness when the sun had set and candles and oil lamps were the only form of light when South Africa had announced the establishment of The Electricity Supply Commission (ESCOM) in the early 1920s. Electricity was still a phenomenon to most of the modern world when Dr Hendrik van der Bijl, ESCOM's first chairman stood in front of a highly anticipative South Africa and proclaimed:

“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 be required.”

A handwritten signature in dark ink, reading 'H. van der Bijl'.

CHAIRMAN

Two circular images. The top one shows a large, multi-story building with arched windows and a sign that says 'HOTEL'. The bottom one shows an industrial factory with several tall chimneys and buildings.

The Commission met for the first time on 20 March 1923 in Cape Town. The Commission's headquarters opened in Johannesburg on 1 May 1923 on the first storey of Hoffman's Buildings. The headquarters moved to Electricity House in 1924. In fact, one of ESCOM's first tasks was to electrify the railways. To this end, Eskom took over the electrification of Glencoe to Pietermaritzburg rail link as Cape Town's suburban railways. In those earlier years, many challenges faced the overly ambitious ESCOM, however thanks to a key differentiator which persists till this very day which is undoubtedly the commission's ability and flexibility to be innovative in order to meet the needs of the country. For instance, in 1928, Congella Power Station was one of the first in the world to be equipped with boiler technology for burning pulverised fuel. Thanks to the brilliant young fuel technologist, Dr HJ van Eck, ESCOM had a head start in the quest to master the difficult technology of burning pulverised fuel.

The use of pulverised fuel was especially important in South Africa given the prevalence of low grade coal. Chairman Dr van der Bijl enthusiastically embraced innovation, encouraging the testing of new technologies and always kept an open-mind to new ideas around the energy industry. Globally the 1920s was a period abundant with new inventions and improvements to existing technology that had a major impact on the way people lived. For example, many of the household items that we take for granted today were either invented or developed into viable commercial products in the 1920s, for example electric irons, toasters, refrigerators, air-conditioners, radio, television and vacuum cleaners.

And with that, in early 1920s South Africa saw a birth of a giant that would soon make remarkable strides in electrifying the Southern African region and dig deep into reaching the poorest of the poor and liberating them from the depths of darkness. Amidst all these noble efforts though, the late 1920s was also a period of political and social upheaval and it swept through the South African countryside during this decade. Driven by anger over poverty, low wages and increasingly tough laws, and supported by trade unions, communists, political activists and church leaders, thousands of rural blacks began a revolt that was frantic and unplanned. Townships near Port Elizabeth such as New Brighton and Kortsen hosted an orgy of violence and destruction that lasted for days before it was quelled.

To top that off, in 1929, the New York stock market crashed and this precipitated the Great Depression. It was such a devastating event that it led to England leaving the gold standard in 1931, but South Africa kept its currency tied to the gold price. The strong currency wrecked the export economy; mining and industrial output went into a steep decline.



Golden moments in a depression

Even though the 1930s was a period of the serious consequences of the economic depression, ESCOM's electricity sales increased. In fact, ESCOM anticipated the rapidly-growing demand for electricity from the gold mines on the Witwatersrand as a key factor. As such ESCOM realised that a larger power station than the existing stations would have to be erected in the 1930s.

A so-called Klip Agreement was signed on 20 May 1937 and the construction of Klip power station, situated near the town of Vereeniging, was completed and the station was in operation by 1940. In a similar agreement to that established for the erection of Witbank power station, ESCOM was to finance and own Klip power station and the VFP was to operate it as part of its own network. Two of Klip's twelve generating sets exceeded the full capacity of Witbank power station.

In 1937, Prime Minister Smuts was proud to open ESCOM's new head office building in Johannesburg. ESCOM HOUSE was, at that time, the highest building in the country. Standing twenty-one storeys high, it symbolised the breath-taking growth of the organisation. In the same year, more than 2 500 million units of electricity were sold.

Many more innovative efforts from the growing energy giant took place in the 1930s, for instance, between 1935 and 1940 pioneering research was undertaken to protect power lines against lightning.





In addition, the first double circuit 132kV power line from Brakpan to Witbank (built by Victoria Falls and Transvaal Power Company Ltd. in the mid – 1930s) experienced a very high number of interruptions, which were caused by the intense lightening occurrence in that area. ESCOM's pioneering, world-class research led to greatly enhanced performance, following improvements that were made to shielding and earthing of lines; these methods are still applied today.

With the world gearing up for war, there was an international steel shortage, and so ESCOM decided to innovate. Concrete was used, instead of steel, for distribution pylons, which reduced costs and improved safety considerably.

Even though ESCOM was moving in the right direction in terms of developing new and innovative means to improve the energy industry, the world however at the time was loading its weapons and preparing for a war that would reshape the modern world in an unmistakable gloomy way – things would never be the same as World War II held the world in a death grip.

A glow in a darkening world

World War II caused the commissioning of Vaal Power Station to be delayed. It was finally on stream by 1952. ESCOM had to do without essential equipment due to the crippling of commercial shipping. A ship carrying a turbo-generator set destined for Congella power station was torpedoed by a German submarine. Various projects had to be postponed indefinitely.

In fact on the wall of the main entrance hall to Vaal Power Station a commemoration plaque was mounted and it reads: The initial plant of two 33 000 kilowatt turbo generators and six boilers essential to the industries of this country was manufactured in Great Britain and delivered by the British merchant navy, protected by the fighting services. *During the war years 1940 – 1944. "In their travail they did not fail us".*

Problems with plant maintenance caused great concern. Machinery in use since ESCOM was established and had to endure years of excessive use. ESCOM staff displayed ingenuity in expanding the electricity distribution system. During World War II, Dr van der Bijl, the Director-General of War Supplies ordered ESCOM to undertake the manufacture of instrumentation and parts for sophisticated weapons at its Rosherville workshop. A steel shortage caused ESCOM to build reinforced concrete pylons to support overhead high-voltage lines. These uncommon pylons were erected in Orange Free State (now known simply as Free State), Natal (now known as KwaZulu-Natal) and Eastern Transvaal (now known as Mpumalanga).

Dr van der Bijl coordinated the work in some 600 factories during World War II and sanctioned the building of 40 more. South Africa produced a wide range of materials for the Allies, ranging from armoured cars to field guns to boots. The list was endless: dehydrated and canned foodstuffs, mortar sights, small arms ammunition, armoured tank spare parts, and many similar essential bits and pieces that win or lose a war.

A number of ESCOM's senior staff were also seconded for important scientific and administrative contributions in connection with this work and Chief Engineer and Commissioner Albert Jacobs shouldered most of van der Bijl's responsibilities relating to ESCOM during the war. This gained him invaluable experience and made him a natural successor to van der Bijl.



Mr Albert Jacobs

During the war, growth in electricity demand slowed down considerably. In 1943, for the second time in Eskom's history, there was a decrease in demand of 1.2%, the first since 1931. By 1944, however, when the Allied victory seemed certain, demand increased by 3.3% and in 1945, growth increased by another 6.6%.

There were local shortages in generating capacity. ESCOM was hard pressed to keep the lights burning as fuel and spare parts became scarce. It relied on municipal stations, the Rand Water Board, Iscor and several other small generators throughout the country to keep the system going.



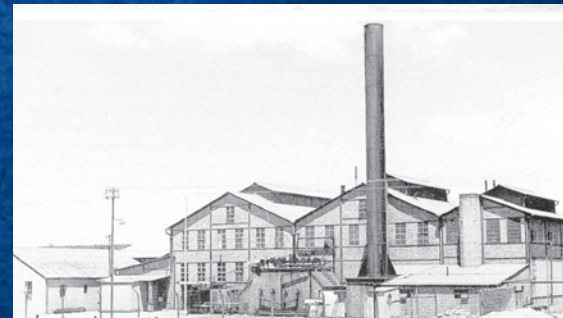
The early years of Eskom in Eastern Cape

Some of ESCOM's earliest efforts in the Eastern Cape are evident from the 1940s. Essentially, in 1942 ESCOM took over King Williams Town municipal power station, reticulation of the town and a number of rural lines. This network was developed over time to link up with Alice. Subsequently, ESCOM took over the Alice reticulation and power station and eventually extended lines to Fort Beaufort, Adelaide and Bedford. Both Mr Foden the first East London City Electrical Engineer and the Manager of ESCOM at the time shared one building overseeing electricity delivery of both towns. The generator at King Williams Town dates back to 1931, in fact, ESCOM purchased King William's Town Power Station from the Municipality in January 1948. There were then two radial-flow turbo-alternators each rated at 1,5 MW and one 0,5 MW alternator driven by a reciprocating engine at the time. ESCOM installed an additional boiler in 1949 and a new 1 MW diesel generator in 1950.

King William's Town power station, a glittering hope

King William's Town is situated inland 54 km north west of East London at an altitude of 394 metres. It was founded as a missionary station in 1825, and in 1835 was named in honour of the British King William IV. It became a centre for German settlement and was elevated to the status of borough in 1861. It had a population of about 15 000 in 1970.

The original electric generating station at King William's Town was erected by the King Electric Power Company. The supply of current was commenced on 23 October 1903 and the works were formally opened on 20 November 1903. Power was supplied for public street lighting and a few private consumers. Street lighting in the town was previously supplied by means of oil-burning lamps. The plant consisted of two Belliss/Electric Construction Company sets with Davey Paxman boilers, having a total capacity of 100 kW. In January 1905 the Town Council decided to take over the assets of the King Electric Power Company. The installation of additional plant was in hand the following year.



In an effort to electrify the King Williams Town area, it was the municipality's initiative to build and maintain the power station, however, it was faced with many challenges, and none is more memorable than that of the 1905 floods. The power station at King William's Town was flooded to a depth of 3 feet [900 mm] during the floods of October 1905, most of the machinery being under water, and the town was without

power supply for several days as a result. In 1918, the installed plant capacity was 0,2 MW and the electricity sold that year was 0,352 GWh.

A tender was issued in August 1924 for the plant to be installed in a new power station. The tender from Reunert and Lenz was accepted for steam raising plant and two generators. The new power station was to be erected at the corner of Napier and Darling Streets, and the Prime Minister consented to lay the foundation stone at a ceremony on 2 September 1925. By September 1926 the power station was complete and in full working order. The old plant was sold.

In March 1930, the Town Council proposed the installation of additional generating plant and in January 1931 tenders were accepted for two Brush Ljungström radial-flow turbo-alternators each rated at 1,5 MW. The inauguration of the new plant took place in March 1932.

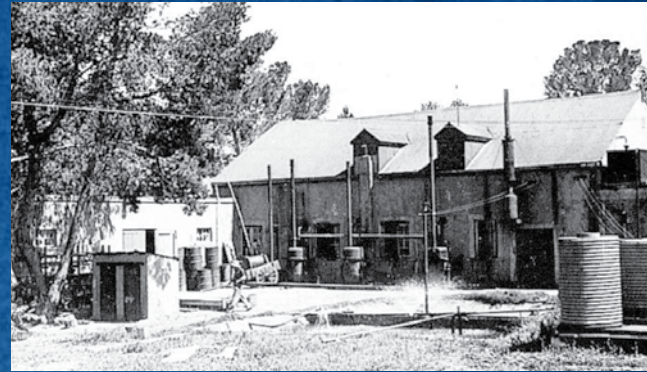
When ESCOM took over the power station the following improvements were made:

- The boiler house was extended and an additional 12 000 lb/h [1,51 kg/s] boiler installed and commissioned in May 1949.
- A new workshop and stores building was constructed and new offices purchased.
- New switchgear and step-up transformers were installed and operation changed over from 3,8 kV to 11 kV.
- A new 1 MW diesel generator was installed and commissioned in March 1950, generating at 11 kV.
- Operating statistics for King William's Town Power Station are as follows:
 - Steam plant and diesel plant in parallel (½ hour basis)
 - Steam plant only
 - Excluding coal burnt for steam supplies to two industrial consumers (between 100 and 220 tons)

Alice power station, an act of temperament and tenacity

At a public meeting held on 9 August 1918, the proposal of the Alice Town Council to light the town by electricity was “carried almost unanimously”. Street lighting was at that time by means of oil lamps. However, when World War I was over, the Administrator of the Cape “was very adverse to municipalities going in for any schemes” due to the financial situation.

By June 1919 the matter was again raised, but shelved a second time because of uncertainty in prices and the market conditions. An amended scheme was proposed in November 1919 whereby a feeder would be constructed and Lovedale, a college in Alice, offered power and light as well. Although the capital costs would be double, the revenue would also be almost double. Alice would take over the existing plant at Lovedale including the engine and gas plant. This proposal was carried unanimously at a public meeting on 3 December 1919 and approved by the Administrator. Though there were objections to the site chosen for the power station at Alice however, approval was given at a public meeting on 22 February 1920.



By March 1921 the plant had been installed and Mr Chalmers, the Electrical Engineer, was congratulated for the efficient manner in which he had conducted the installation. In June 1922, there were two dynamos of 40 kW each but the engines were effective for only 32 kW each. An additional plant was proposed.

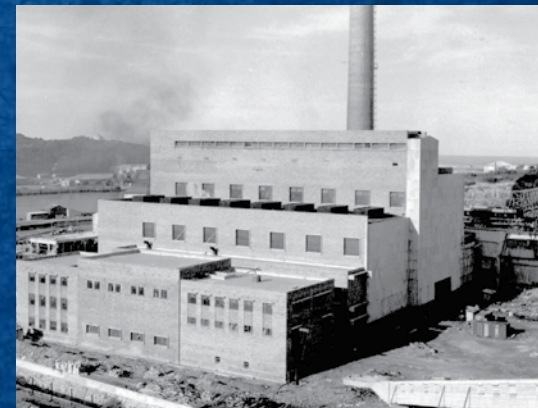
When ESCOM took over the Alice Power Station it was decided to augment the plant by installing a new 440V 230kW AC generator. New 3,3 kV switchgear and step-up transformers were ordered in anticipation of changeover from Direct Current to Alternating Current (DC to AC).

The building was renovated and two of the old DC generators removed to make room. A second 400V 230 kW AC generator was installed in 1951, enabling the 125 kW set to be removed for repairs. During October 1952, the changeover of consumer supplies and street lighting to AC was completed. A 33 kV transmission line between King William's Town and Alice was commissioned in August 1953, and continuous working of the station was ceased. The generating plant was decommissioned in 1954 and sold.

West Bank power station, the muscle in the struggle

The original West Bank Power Station was built by the East London Harbour Board in 1905. The East London Municipality took a 30 year lease on the site and buildings in 1909 and installed their own plant, some of which was transferred from their East Bank Power Station which had been commissioned in October 1899. Additions were made at various stages, including during World War II (1939-1945), and the lease agreement extended. At the end of the war the installed plant capacity was 24,5 MW.

On 1 January 1947, ESCOM took over the station and increased the installed capacity to 32 MW in 1951. All turbo-generators at West Bank 1 were Brush Ljungström sets. A new power station, West Bank 2, was built on an adjacent site purchased from the Railway Administration and the first station re-named West Bank 1. The initial installed capacity of West Bank 2 consisted of two 15 MW generators commissioned in 1956. The station was extended to an ultimate capacity of 85 MW by March 1969, consisting then, of three 15 MW sets and two 20 MW sets and six boilers.



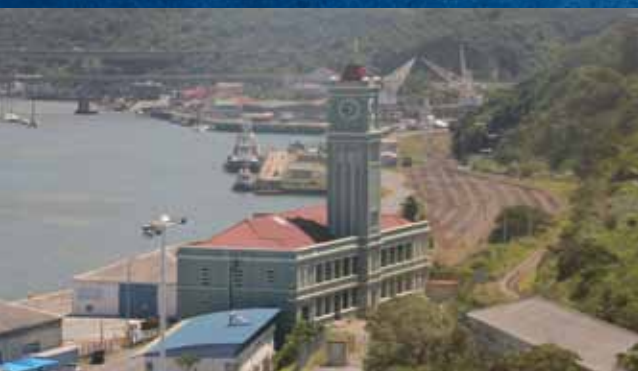
West Bank 1 was only joined by West Bank 2 in 1955 and it only began commercial service in 1956. West Bank was linked up to the 400 kV national network at the end of 1973. West Bank 1 was decommissioned in May 1978 and demolished the following year. West Bank 2 was taken out of commercial service at the end of 1988 and a formal closing ceremony was held on 10 February 1989. The plant was then sold as scrap and the building demolished.



The total net electricity production for stations 1 and 2, from 1947, the year West Bank was taken over by ESCOM, until closure amounted to 8 460 GWh and the coal burned amounted to 5,448 million tons. West Bank Power Station was located in East London, which is today an important harbour in the Eastern Cape Province. East London was originally founded as a military camp in 1847, became a Municipality in 1873 and was elevated to the rank of city in 1914. In February 1883, shortly after Kimberley had electric streetlights, an offer from the South African Brush Electric Light Company for electric street lighting of the town was accepted. However, the contract was cancelled in October 1883, at the request of the contractor. Fourteen years later, in 1897, Messrs Reunert and Lenz, Ltd. were contracted to build a power station on the east bank of the Buffalo River. It became known as the East Bank Power Station and was built at First Creek, where the Princess Elizabeth Graving Dock now stands. It was to supply power for lighting as well as an electric tramcar system. Reciprocating steam engine driven generators generated power. On 5 October 1899, the first twelve streetlights were switched on. It was intended that inauguration of the street lighting and the tramways should take place simultaneously, but due to delays in the delivery of the tramcars the tram service was not formally opened until 25 January 1900. The street lighting originally consisted of 20 arc lamps and 283 incandescent lamps. The tram service initially had three double decker cars, increasing to a fleet of 15 cars by 1903. At the end of February 1900, there were 182 private consumers receiving electricity.



The East London Harbour Board built its own power station, which was commissioned in 1905, on the west bank of the Buffalo River. In accordance with a decision of the Colonial Parliament, the East London Harbour was taken over by the Railway Department on 1 January 1909. On 31 May 1909, the power station as well as the machinery and certain cables across the Buffalo River, were taken over "in thoroughly good working order" from the Government by the East London Municipality. However, the site and building remained the property of the Government, being leased to the Municipality on a 30-year lease of £600 per annum. An agreement was entered into for the supply of electric power to the Government from the power station, which became known as the West Bank Power Station. The installation of additional equipment was completed at the end of 1910. The station was fitted out with four 'Yates and Thom' Lancashire-type boilers and Brush Ljungström turbo-generators. On 28 February 1911, with West Bank carrying the full load, East Bank Power Station was closed down. The electricity generated for the last year that East Bank was in operation - 1909/10 - was 1,066 GWh and the electricity sold 0,878 GWh. The maximum demand supplied was 0,74 MW.



Guns down and industry up

In the 1950s South Africa underwent huge industrial growth, particularly in manufacturing, whereby local textile, pulp and paper industries were established. The country also began to refine oil and to produce fertilisers, chemicals and armaments. This was also the decade where 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 automobile industry had also come to South Africa. Meanwhile, the clothing, footwear and textile industries grew rapidly in the coastal area, and so 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 grow, and on the East Rand (now Ekurhuleni), the metal industries were producing products for the mines, factories and construction industry.

Cities, suburbs and townships grew rapidly as more and more people moved to the cities to take the many jobs that were available. The retail and service industries grew, and the transport services and infrastructure were expanded. Railways and harbours grew, and new airports were built as air transport also became more affordable.

In 1958, ESCOM moved into another Head Office building in Johannesburg, which was called ESCOM Centre. ESCOM had successfully confronted post-war conditions and was planning prudently for the future. Power stations were commissioned, and transmission systems expanded. This success was helped by the country's great economic progress and the ingenuity of ESCOM personnel.

Between 1952 and 1959, ESCOM built eight new power stations. The boilers at Hex River Power station were commissioned with a final capacity of 140MW, and were equipped with spreader –stokers which represented the first use of this type of firing in South Africa.

Between 1945 and 1955, the capacity of ESCOM's power stations more than doubled, and it was estimated that, over the succeeding 10 years, capacity would have to be doubled again. This could only be achieved by building larger power stations. The first two of these larger stations were Highveld and Taibos, near Sasolburg, in the northern Orange Free State. The erection of the smaller Wilge power station launched the large-scale exploitation of the rich Eastern Transvaal coal-fields for power generation. At the same time, ESCOM's biggest coal-fired power stations were to be erected in this area.

Komati power station was commissioned in 1962 with a capacity of 1 000 MW, and Ingagane Power Station, near the town of Newcastle in Natal, followed. The planning of West Bank 2 (in East London) and Swartkops (in Port Elizabeth) was undertaken in the fifties. Swartkops was then sold to the municipality of Port Elizabeth in April 1955.





Swartkops power station, the queens knight and light

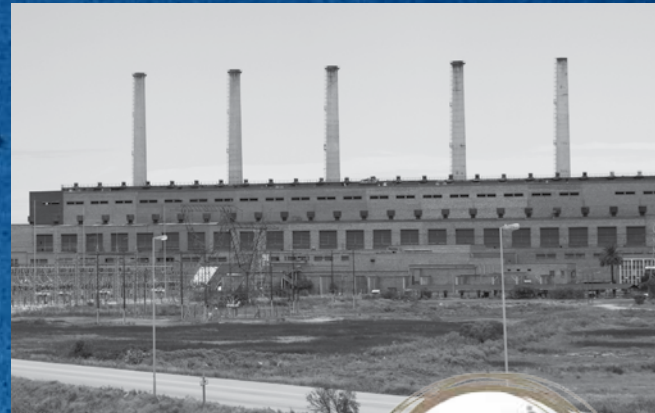
Swartkops Power Station can be located on the Grahamstown Road, 11 kilometres north of the city of Port Elizabeth. It was to have been one of ESCOM's first post-war power stations but, as it turned out, did not end up as such. Instead it became a municipal power station that would operate between 1954 and 1996.

The provision of electricity in Port Elizabeth had begun in 1906 with the establishment of the Electricity Works. This supplied fifteen private consumers and thirty street lamps, and, in its first month, the Works sent out 4 708 units of electricity. As industry in the area grew and the volume of exports from the Karoo and Uitenhage areas increased, Port Elizabeth found itself battling to cope. Its distance from the ESCOM network and the load centres in the north suggested to the Council that they should construct their own power station. Permission for this was granted and a new station was in operation in 1925 in Mount Road.

The demand for electricity grew rapidly as the street lighting system expanded and more people purchased electrical appliances. Industry also grew and towards the end of the 1930s, Port Elizabeth was regarded as one of the Union's industrial centres (South Africa was a Union of former British colonies between 1910 and 1961). There was considerable debate among city councillors and ratepayers as to whether Mount Road should be expanded or a new power station built. In the latter part of the 1940s, the Port Elizabeth Municipality turned to ESCOM for assistance. By 1949 it had been decided that ESCOM would establish a power station in the area to assist the municipal supply. Mr AM Jacobs, ESCOM's second chairman, was personally responsible for the overall design and layout of what was to become Swartkops Power Station. The power station would be built in the Swartkops area of Port Elizabeth, drawing its water supply from the river of the same name.

By 1950, levelling and terracing of the site had begun and contracts awarded for the main station building steelwork. Meanwhile orders were placed for the new plant, including two 95 400 kg/hour boilers and two 20 000 kW turbo-generators at an estimated cost of £3 142 000. The power station was expected to be in operation in the middle of 1953. It was designed for three 20 000kW turbo-generators initially, and thereafter 30 000 kW sets as required.

The years 1951 to 1952 saw the terracing for the main building and the foundations of the boiler room completed, excavation of the foundations of the turbine room and the construction of the chimney stacks were going ahead and railway lines for the coal supply were also being laid. Since the orders were placed, estimated equipment costs had risen by £1 million so that when the first ICAL boiler and Parsons turbo-generator were installed a year later than expected, at a cost of over £4 million. The station's associated village for employees was also established, consisting of two blocks of flats and eighty houses.





ESCOM's 1954 Annual Report noted that Swartkops was established in 'different circumstances'. At the time it was normal for power station licences to establish an area or undertaking where electricity would be supplied. In Port Elizabeth however, ESCOM did not apply for a supply area as the municipal supply served such a large area that it was thought there would be no other customers. In short, Swartkops was expected to supply Port Elizabeth alone, and it was licensed to do that. In addition, the construction of the power station strained ESCOM's human and financial resources, as this period was a time of expansion in which several other power stations were either being planned or constructed. These included Hex River, Salt River 2 and Umgeni Power Stations. A solution was found in 1953, while Swartkops was still being erected.

In June, the Port Elizabeth Municipality offered to purchase the power station from ESCOM. The Municipality made the offer based on several factors, including:

- Municipal ownership of both Mount Road and Swartkops Power Stations would obviate the need for duplicate sets of costs for personnel, maintenance and repair. This meant significant savings.
- The Municipality would benefit from the modern infrastructure at Swartkops, namely workshops and offices.
- Swartkops would be under local control.
- It was not uncommon for Municipalities to own their own power stations. Johannesburg, Pretoria, Cape Town and Bloemfontein owned their own power stations.
- City officials and businesses wholeheartedly supported the purchase.



The City Council approved it with 17 votes to 2. ESCOM was not opposed to the offer, as it would ease the strain on its resources, and the Port Elizabeth Municipality was in any case the only customer. The unprecedented nature of the sale notwithstanding (it was the only time ESCOM has ever sold one of its power stations), ministerial approval was obtained and Swartkops was sold for £8,8 million. Nevertheless, ESCOM's relationship with this area did not cease. The Commission reserved 10 MW of the power station's capacity for emergencies and in 1963 established a small Eastern Cape Undertaking for local farmers.

As of April 1955, Port Elizabeth's power stations, Swartkops and Mount Road, supplied the city and surrounding areas' needs. This plant was considered reliable, with only one or two outages a year. The boilers burnt a type of coal called 'mixed smalls' which was brought to the station by rail. The Transvaal Collieries Association (TCOA) sourced this coal mainly from the Witbank area. In the early years, the quality and supply were both good but became unreliable in the last years of the power station's operation. The resulting ash was sold to brickworks, utilised as fill or for road construction, or used to cover municipal rubbish dumps. Unlike other power stations built at the same time, there were no cooling towers. Cooling water was drawn from the Swartkops River by eleven circulating pumps, and circulated back to the river.

The staff complement of some 340 employees, enjoyed reasonably good working conditions, there being few serious accidents. A good work ethic prevailed among the employees, who also participated in various activities including a social club with a pub and a soccer team. Due to the chain grate system that fed the boilers, Swartkops was considered to be a clean power station.

Mount Road was unable to meet a growing demand for electricity. The situation was relieved by the connection of this area of the country to ESCOM's national grid between 1973 and 1974. ESCOM's was now the bulk supplier of electricity. Under the supervision of Mr Charles Naylor, who succeeded Mr Orklend Smith as power station manager, Swartkops now operated as a peak station.

It was fortunate that Swartkops was kept in operation, in 1975 it helped to save the eastern part of the then Cape Province from a total blackout. Demand for power placed ESCOM's system under strain towards the end of 1975. On Friday 5 December things went awry. A malfunction at the Hydra substation near De Aar led to the entire Cape Peninsula losing power supply. In Cape Town traffic lights ceased functioning and lifts stopped. West Bank 2 Power Station in East London and Swartkops, working to supply emergency power however, saved the Eastern Border from total collapse.

By the mid-1980s, ESCOM had more than enough power available. As a result of political isolation of South Africa, against apartheid government, economic growth declined. Consequently Swartkops was deemed to be unnecessary and taken out of regular operation in 1986. The boilers were wet-stored, although they were steamed during the winter of 1986. Thereafter, they were steamed at various times for routine. The station remained in this condition for nine years. During this period, the power station was overhauled, remaining on standby. This process was overseen by Mr Naylor's successor, Mr Robin Clark. It cost the city of Port Elizabeth R9,8 million to staff and maintain it at this time.



In its 32 years of service, the power station, while providing electrical power to Port Elizabeth and surrounding areas, also attracted criticism from environmentalists. In 1969, the Swartkops Trust was established and became a pollution watchdog. After connection to national grid, Swartkops operated on only 1/3 capacity and thus ran less efficiently and produced more pollution. In 1979, the CSIR (Council for Scientific and Industrial Research) warned of build-up of metals in the Swartkops River. Abnormally high metal levels were found in the power station's effluent channel. There was concern about the loss of fish nursery grounds and the accompanying harm to local fisheries. On the other hand, it was also noted that Swartkops' outfall did attract fish to the warm water, something that pleased anglers to no end.

There was also concern about acid rain. In the early mornings, sulphur-laden particles, combined with moisture formed a corrosive agent that damaged roofs, guttering and boats. In addition, soot, dispersed from the power station at night also polluted local residences. These problems were attributed to old equipment at Swartkops and steam trains in the vicinity. Upgrading equipment would have been prohibitively expensive, so steps were taken to minimise pollution. The power station was restored to its original condition, dust removed to settling ponds and chemicals neutralised at an effluent centre.

Years of development and growth

A national power network was established in the 1960s. This network was destined to link the Transvaal power stations with the Cape Province undertaking. The lack of coal made it cheaper to transport electricity to the Cape Province via power lines from the north. The announcement of the Orange River Project, which would provide a power source halfway, made this 400 kV link viable. In 1969 the transmission line to Beaufort West was completed and power flowed from Eastern Transvaal into the Western Cape distribution system.

During the 1960s scientists found ways to tap into the heat naturally produced by the earth to create less expensive electricity. In 1966 the first commercial satellite was launched, and the associated computer technological advances launched the age of information. In a 1967 brochure ESCOM prints; "The development of South Africa in the 20 years since the end of the Second World War, measured in terms of increased power requirements, is strikingly revealed by ESCOM's sales which have risen from 5000 million units in 1947 to 24,500 million units in 1966. In the same period ESCOM erected 12 new power stations.

In 1968, Minister of Economic Affairs, Mr. Haak forecasted a vast ESCOM grid with super power station. A grid to supply the whole of Southern Africa with electricity from power produced from super power stations on the coalfields, from hydro-electric stations at Cahora Bassa, from Kariba, and from Oxbow, and ultimately from nuclear power stations along the coast of the Republic.

During 1969 the first details of a huge hydro-electric scheme, linked to the Orange River project, which will initially serve the southern Free State, parts of the Northern Cape and a large area in the Eastern Cape were released. The initial expenditure on the project was estimated to be a total of R22.6m. The scheme would be capable of supplying sufficient electric power to the Railways to electrify the major parts of the railway lines linking Cape Town, Port Elizabeth and East London with Bloemfontein and Kimberley.

Additionally, ESCOM changed its logo in 1962, for the first time the logo had the lightning bolt image representation. It was more visually appealing and had a coat-of-arms feel to it.

Times of innovation

During the 1970s ESCOM did revolutionary work by developing the means to inject frequency telecommunication signals on 132 to 765kV power lines, which saved the company significant amounts of time and money.

In 1973 the ESCOM National Grid was completed, as a 25 000km network of power lines linked the country.

ESCOM received worldwide recognition for its dry cooling technology. Power stations turbines generate an enormous amount of heat, and conventionally water is used to keep them cool. However, South Africa is a relatively arid country and so in 1975 ESCOM decided to introduce dry cooling systems to its new power stations. Grootvlei was the first, and two of sets use natural draught cooling towers. Dry cooling reduces water consumption by over 90%. ESCOM's work in dry cooling was recognised worldwide.



In 1976 a world-wide shortage of steel prompted ESKOM to innovate with a concrete boiler house. Matla is one of a few power stations in the world with a concrete boiler house superstructure, giving it an outward appearance very different from other power stations. The use of concrete reduced the construction lead-time during a period when there was a world-wide shortage of steel.

ESKOM moved to a new Head Office building in 1977, Megawatt Park, in Sandton, is a show-piece that emphasises ESCOM's leading role in the development of South Africa and its people.

In 1978, ESCOM contributed significantly to the design, commissioning and operation of the Cahora Bassa HVDC scheme, rated at 1950MW. Of particular significance was the pioneering decision that ESKOM made to use thyristors (as the switching elements) in preference to mercury arc valves; this was the first time in the world that the new and still untried thyristor technology had been used on this scale, in such a large DC scheme, and at the highest voltage at the time, about +/- 533kV.



Port Rex power station, the stabilising gas power station

Eastern Cape pride of the 1970s is most definitely Port Rex Power Station. Despite the station being so small, Port Rex is critical for system voltage stability in the Eastern Border due to its location at the end of a long transmission line. Long transmission lines have the effect of causing phase changes between the voltage and the current being transported, hence the longer the lines, the more voltage instability occurs. Port Rex has the capability of regulating this voltage instability via an operating mode called synchronous condenser operation.

Modular industrial gas turbines, such as Port Rex, produce up to 40 000 horsepower and are equipped to burn a variety of fuels, ranging from oil to gas. The advantage of the modular design compared to conventional gas turbine design is that, routine and planned maintenance is done considerably faster, resulting in higher continuous electricity availability.

Improving the security of local power supply is not the only role played by Port Rex and Acacia power stations. The operating flexibility of the gas turbine generating sets, particularly their very rapid run-up capability, makes them ideal for meeting relatively short peaks in load demand. They are also useful as stand-by plant to supplement reserve generating capacity on the national system, and can be employed as synchronous condensers for voltage regulation.

An important feature of these stations is their black-start capability. In the event of a catastrophic incident on the electricity system resulting in a loss of all generators, these stations can be used to re-energise the network due to their ability to re-start without power from the network.



Port Rex has three gas turbine generators, which are driven by engines similar to those of a Boeing 707 aircraft. It was commissioned in 1976. It is capable of a base load output of 57,1 MW and a peak output of 60,8 MW at the design atmospheric condition. The peak load output can only be sustained for three hours. The total installed capacity of each station is 171MW.

Player in the international stage



Even though ESCOM Southern Cape Region did not supply electricity to large power-intensive consumers such as mines or major industries, it covered third largest power distribution area in South Africa, serving widely scattered farmers and municipalities. With a staggering 200 000 square kilometres under its wing in 1980, this Region – with its headquarters in East London, distributed power to an area only slightly smaller than that served by ESCOM's Rand and Orange Free State or Northern Cape Regions. With the addition of the Langkloof fruit-producing area in the Southern Cape, the Region was poised to grow even further in size.

The advantages of a reliable power supply to the fruit farms in the area and consequently to the South African economy was obvious. The regional management believed that once ESCOM electricity was available this would grow in leaps and bounds.

In the past, the Region supplied electricity directly to municipalities and other consumers in the Transkei. ESCOM assets in this national state were however, sold to the Transkei Electricity Supply Corporation (Tescor) in 1980. Tescor was (at the time) receiving a bulk base load supply of electricity from ESCOM on the Kei River border. The corporation had started to generate part of its electricity requirements, using hydro-electric power stations on the Umtata River for peak demand while it planned to install further hydro-stations in the near future.

In the newly independent Ciskei, the Region furnished supply directly to many townships, including Mdantsane, Zwelitsha, Dimbaza and the new capital, Bhisho. ESCOM power was also reticulated in towns such as Alice, and many other villages.



South Africa in 1988 had the cheapest electricity among 12 Western countries surveyed by the National Utility Service (NUS).

In the 1980s ESCOM had fixated itself in making significant innovations and improvements on current processes and systems. Indeed much took place during this period. For instance, ESCOM developed a new table of ratings allowing for uprating or lines by 60% from 50°C to 80°C without expending capital.

Between 1980 and 1986, improvements were made to the design and operation of power lines. Because of inferior performance and rapid network growth at the time, improvements to the design and operation of medium voltage power lines were evaluated experimentally and duly implemented.

In 1982 ESCOM launched the first nuclear power plant in Africa. Koeberg was the first nuclear plant to be built and commissioned on the continent of Africa. In the same year, ESCOM developed innovative hybrid water treatment systems. Required by law to discharge water that is not polluted in any way, the company adopted a philosophy of Zero Liquid Discharge (ZLD).

In 1985 Eskom designed world-first 765kV high voltage transmission lines. The best way to transmit large blocks of power over long distances is by high voltage transmission lines. In the early 1980s ESKOM decided to overlay its existing 400kV national grid with 765kV lines.

Between 1985 and 1987 ESKOM pioneered the use of gas insulated substations at 800kV. Relatively inexperienced (at the time) with the prevention of pollution flashovers in the air-insulated option for substations operating at 800kV, ESKOM concluded that the only way in which this could be done was to make use of gas insulated substations (GIS). This was the first time that GIS had been used at 800kV; and good performance of the two stations vindicated the decision to do so.

Another bit of innovation was taken to the ESKOM brand identity; the logo was once again changed in 1987.

Apple of Africa's eye

Eskom innovations in the 90's.

These were some of the years where Eskom intensified modernisation and brought up ways to effectively service its customers. The 1990s saw the introduction of the pre-paid electricity meters in 1994, these meters reduced ESKOM costs and also benefited consumers by increasing safety and lowered rates. These meters were developed and designed by Eskom in collaboration with local manufacturers.

Moreover, ESKOM also developed truck-based mobile landing pads for more effective line maintenance by helicopter. Lines were kept live while performing maintenance, preventing the power supply from being interrupted. This innovation attracted interest from South Korean, Nigerian and American utilities, and has, since its introduction, saved ESKOM millions of Rands per annum.

Another key ESKOM innovation was the protective systems that are internationally recognised. ESKOM's network is so vast and susceptible to various faulty conditions; this impacted mostly on reliability and necessitated the use of these protective measures. The past electro-mechanical devices that ensured that when lines were affected outages were minimised was substituted by the development of modern numerical protection systems. These innovations were widely publicised and ESKOM was subsequently appointed to consult on protection matters regarding a contract in India and China at 765kV substations.



ESKOM directed its efforts to bringing affordable electricity to all. By 1992, almost one million more people were receiving an electricity supply and 260 electrification projects were underway. ESKOM was determined that a reduction in the real price of electricity would stimulate economic growth in South Africa. ESKOM's efforts resulted in the tariffs charged by the corporation being the cheapest in the world. This claim was supported by an international survey conducted in 1996.



At a National Electrification Forum (NELF), the recommendation that Government replace the Electricity Control Board with a National Electricity Regulator was adopted in 1994. The National Electricity Regulator was empowered to ensure the orderly, effective generation and distribution of electricity throughout South Africa. ESKOM took over the distribution responsibility in a number of municipalities. It devoted attention to improving the quality of supply, metering and billing systems. More than 800 new households were being connected every working day.

ESKOM commenced with its electrification programme in 1990 under the banner of "electricity for all". The programme was an attempt to address the imbalances that existed at the time and ESKOM's goal was to connect 3 million rural households within a 10 year period.

This was the era when the democratic government came into power, changing the landscape of South Africa economically and otherwise. When the new Government came to power in 1994, the Reconstruction and Development Programme mandated Eskom to complete 1.75m rural electricity connections by the year 2000. This target was achieved at the end of 1999 with Eskom having completed 1 750 750 connections.

In 1992, the Eskom Distributors were formed and the Eastern Cape Region, together with Western Cape and Southern Cape became the Cape Distributor.

On 1 April 1995 TESCOR (the supplier of electricity in the then called Transkei) was assimilated into Eskom following the disbandment of the home-land policy.

In 1996, the Distributors reverted back to seven regions and Willie de Beer became the Regional Engineering Manager of the then Southern Region and Pool Mahadeo, the Regional Customer Service Manager.



Around October 1997, employees in ESKOM House, which was bursting at the seams, were moved to the newly built Sunilaws Office Park, Beacon Bay, where the Provincial Head Office is still currently housed.



NOTICE TO ALL TESCOF CUSTOMERS

Eskom has pleasure in announcing that as from 1 April 1995, all existing Tescof customers will be serviced by Eskom. We wish to extend a warm word of welcome to you all and assure you that Eskom will do everything in its power to provide you with good, reliable service in the future.

All existing Tescof offices will become Eskom offices and will also be manned by staff of Eskom, inclusive of Tescof staff. All addresses and telephone numbers remain unchanged for normal business visits or calls. The location of your new Sales and Customer Service Head-Office is situated in East London.

Should you experience any supply interruptions after hours, then you must please phone Eskom's faults desk at the following toll-free number: 0800 417 955. Please note that a call to this number is free and that it is essential that you report all your faults to this number.

Customers wishing to query any accounts may do so by contacting their nearest Eskom office (previous Tescof offices). Kindly direct all queries and complaints to your nearest Eskom office or contact Eskom's office at East London by phoning 0431-392111 or write to Box 667, East London 5200.

It is important to realise that all outstanding monies owed to Tescof must be paid in full and to understand that any non-payment of accounts will unfortunately lead to the supply of electricity being disconnected. Eskom has a policy in place whereby customers who do not pay their accounts will be disconnected. A reconnection fee and an increased deposit as well as the outstanding amount due will have to be paid in full before Eskom will reconnect the supply of electricity to the specific premises. Since disconnecting supplies of electricity is not a pleasant experience, we therefore appeal to everyone to rather pay their account on time to avoid any disappointment in this regard. Please note that reconnections will only take place during official working hours.

Your meter will not be read on a monthly basis in the case of small power users (residential, small rural and small businesses). Eskom will read the meters once every three months and estimate consumption for the following two months. This practice is standard throughout the country as it is not cost-effective to read meters on a monthly basis. You are welcome to make arrangements to phone in your readings to Eskom should you experience any problems with the estimation system. The following payment methods of monthly accounts are cash, by cheque or by debit order.

Kindly direct all new applications for supply of electricity to your nearest Eskom office and our staff will gladly assist you with information regarding your supply needs and they will also ensure that you are put on the correct tariff structure.

Eskom wishes to thank all the stakeholders for their excellent co-operation and we hope and trust that our future relationship will grow from strength to strength.

Best wishes

Willie de Beer

SALES AND CUSTOMER SERVICE MANAGER (EAST)

R200m boost for EC power

By Eddie Botha
Business Editor

EAST LONDON — The investment and development programme of the Eastern Cape electricity supply is to reach R200 million investment by Eskom this year.

The power utility giant will also have to invest in other black women through its other black empowerment programme. Announcing this at a briefing here yesterday, Eskom regional engineering manager Willie De Beer said several key projects had been approved for the Eastern Cape during 2002.

Among them was the establishment of a new water meter in the Albany district, refurbishment of several old water towers, the renewal and related work, the building of supply capacity in the local growth point of Pletstroom and power supply enhancement in the urban rich Swartkops River Valley.

"These and many other projects to be completed this year would ensure a more consistent and reliable electricity supply to customers and a network that is fit for the future," said De Beer.

He said Eskom also planned to bring electricity to the first time in 2002 under a contract with the region during the current financial year. However,



GOOD NEWS: Eskom regional engineering manager Willie De Beer announces an investment of R200 million in the electrification development of the Eastern Cape. Photo by Alan Eskom

1994 and last year Eskom spent R26m on the electrification of 750 schools. It has committed a further R11m this year for the same purpose.

De Beer said since 1994 Eskom had invested R2,1 billion in the region's growing economy and created over 21 000 jobs. Eskom's power loss in 2001 was 2,33 per cent, an improvement on the 2,51 per cent of 2000.

"This year, it has put aside

R110m for various electrification projects that will bring electricity to the last 100 000 homes and businesses across the Eastern Cape," he said.

Eskom's Roberts Paarl said all Eskom's electrification plans are in line with the government's identified social assistance programme which will aid in generating a power supply exceeding the anticipated demand and

enhance the quality of life in communities throughout the province," said De Beer. He said in order to attract and encourage the region's investment, Eskom had budgeted work for 2002 worth R100 million. These projects included maintenance and upgrading of the existing network within the Eastern Cape.

De Beer said special focus had been placed on engineering

specifically enterprises owned by black women in the region and energy access throughout the Eastern Cape.

He said his business aim was to reduce the traditional role of black companies and encourage women entrepreneurs to find place in the province's economy.

"At the same time it is crucial that our engineering focused firms make special arrangements to encourage black women and women's engineering and technical disciplines to enter the industry."

De Beer said the province's commitment to uplift black women entrepreneurs through the development and support of their business ventures.

Eskom has provided its support since R157m to black entrepreneurs and suppliers in the province during 2002, an increase of 15% on the previous year.

De Beer said the province's commitment to support black women in business for 2002 was R4 million, the total spent on black women's empowerment programmes for the year.

He said Eskom would be happy to be back in 2003 to support the short to medium term.

De Beer said Eskom would be pleased to see the growth of African companies in the province and to see their success.



A decade of change

During the millennium years, Eskom had moved giant steps in improving services. In 2001, ESKOM adopted the strategic intent to be the pre-eminent African energy and related services business of global stature. At the Global Energy Awards ceremony held in New York in December 2001, ESKOM was presented with the award for Power Company of the Year.

The ESKOM Conversion Act was signed into law in 2002. This Act converted ESKOM from a public enterprise into a public company having a share capital. The Minister of Public Enterprises, Mr Jeff Radebe, announced the appointment of a Board of Directors for ESKOM. The utility's Board of Directors was appointed to preside over the affairs of ESKOM Holdings Limited, the name by which the utility would now be known. The Board of Directors replaced the previous two-tier governance structure of the Electricity Council and the Management Board. Mr Reuel Khoza was appointed as Chairman of the Board of Directors.

A new ESKOM corporate identity and logo, which was approved in 2001, was implemented in 2002.

Rural residents were never left out of the Eskom radar, as a rural Eastern Cape town of Cofimvaba district experienced electricity for the first time in 2001, after 2000 households were electrified, marking a huge milestone towards rural electrification.

In 2002, ESKOM invested R200m to boost the Eastern Cape's electricity supply. ESKOM also planned to bring electricity for the first time to 282 under-serviced schools in the region during that financial year. During the same year, the Eastern Cape also benefited from a R148m solar project.

In 2003, ESKOM, along with the Industrial Development Corporation (IDC), bought into the R16 Billion Coega smelter. The investment provided substantial benefits for the Eastern Cape, and South Africa as a whole. This was the same year where the company celebrated its 80th Anniversary.

In 2004, there was a major ESKOM refurbishment for the Southern Region. ESKOM installed a 10MVA 66/22kV transformer at the KWT substation, costing R3,9 Million, which was completed in 2005. The KWT municipality and farming community were set to benefit the most.

Subsequently, a 10MVA 66/22kV transformer was set to be installed at the First Falls substation near Mthatha, and was completed in 2005 at a cost of R8,5 million.

In the Louterwater and farming community, around the Langkloof and surrounding areas, a 10MVA 66/11kV transformer was installed at the Louterwater substation. The project cost R6.6 Million.

In 2004, the Fuel and Combustion Technologies Group of ESKOM received the South African Fossil Fuel Foundation Award for sustained contributions to research in coal combustion.

This decade saw ESKOM develop new funding models, which have since stimulated the market in terms of providing additional technologies for implementation to achieve energy saving targets.



Eskom Eastern Cape leadership

“The art of progress is to preserve order amid change, and to preserve change amid order” – Alfred North Whitehead.

Like any of the regions with aspirations for a better tomorrow, leadership and direction is paramount, the Eastern Cape Province was no different. There were many positive changes in the Border, and expectedly there were also challenges to be faced with stern leadership to overcome them.



Mr Frank Pearce

Undoubtedly, ESCOM has always groomed terrific leaders in innovation and technology in South Africa. Within the Eastern Cape the roots of astute leadership were found in men such as Mr Foden, who was both the East London municipal manager and the first Eskom manager simultaneously in the Eastern Cape. Both the municipality and Eskom actually shared the same building and legend has it that he would at times write a letter on behalf of the Municipality whilst in his Municipal office and would then go to his Eskom office and reply to that same letter on behalf of Eskom. Indeed Mr Foden was very resourceful. He was then succeeded by Mr Frank Pearce. Mr Pearce has been hailed for three qualities. He was renowned as a master of the English language, he had an outstanding memory, displayed in his knowledge of the families of all staff members that he had personally been in contact with. Additionally, he was a true gentleman, once he had met you, he would always make time to chat to you be it at work or in town. Mr Eugene Otten, assumed his leadership role in the region and was considered to be a fine engineer. Displaying passion for High Voltage and Extra High Voltage (HV and EHV) enticing him to being the HV and EHV designer. Some of the experienced engineers, still in the business today, considered him to be a mentor because of his availability for training and mentoring. It was also Mr Otten that signed off the purchase of the Beacon Bay property, which is now the Eastern Cape Operating Unit's Head Office, commonly known as Sunilaws Office Park.



Mr Eugene Otten

Mr Ken Garman took over the leadership from being Mr Otten's right hand man, his engineering manager. Considered to be a consultative manager, he was known for seeking staffs opinions especially those directly involved with the development of business strategies that would bring change, whether these changes were on an operational or structural level. Mr Garman would lead with an intuition which was rooted in his confidence of his staff when it came to new adoptions of the business.



Mr Ken Garman

Mr Garman was then succeeded by Mr Kingwell. Mr Kingwell was a more fun and socially engaging leader. In fact, he introduced the opening of the bar on the last Friday of the month. This however was short lived, as the practice was used on a more regular basis.

After re-structuring the Region became part of the Cape Distributor and Mr Willie de Beer was the local senior manager appointed for Customer Services and Mr Dave Waldron was appointed as the Engineering manager (operating from Cape Town). Mr Willie de Beer and Mr BV Msengana (After another restructuring the Southern Region had two local senior managers). BV Msengana was succeeded by Mr Pool Mahadeo after some time. Mr Mahadeo's direct approach to our customers was appreciated by most, for instance, when customer demands proved to be excessive, on a few occasions he informed them directly that their requests would not be entertained as the service they were being provided was within acceptable levels and the matter was not open for any further debate. His no-nonsense approach was contrary to some of his predecessors that would try and

entertain their requests thereby favouring them and subsequently disadvantaging those that required attention but were not complaining by using the limited resources to address the favoured's request to the detriment of those that deserved Eskom's attention.

Mr Peter Craig was the first Southern Region General Manager, he had a number of senior managers working under him. He initiated the annual GM visits, whereby, he would visit the regions key areas in the field and address both employees and stakeholders. Some Eskom employees around the business today remember him for sternness; meanwhile others remember him for his sense of humour. For instance, if he had to reprimand someone he would do it right there and then, whether it's in the corridor or behind closed doors. He would also host employees at his personal home and it is here that some Eskom employees highlight his overwhelming sense of humour. After Mr Peter Craig's era, Mr Thys Möller followed and he still stands as the current General Manager.

Mr Thys Möller who has just under 2500 employees under his helm, started as a Pupil Technician in Eskom in 1998, has served Eskom in various capacities over the last 26 years ranging from a Supervisor in the Electrical Maintenance Workshop at Matla Power station, Engineer and Senior Engineer in the Planning and Design offices and in October 2000 he was appointed as the Regional Engineering Manager for the Northern Region in Limpopo where he stayed for 3 years. Due to Eskom Distribution's Transformation in preparation for the EDI he was transferred to East London as Regional Engineering Manager for Southern Region. He occupied this position for 4.5 years before being appointed as Regional General Manager for Southern Region in July 2008 and appointed in 2011 as the General Manager for the Eastern Cape Operating Unit. His tenure has been characterised by increased infrastructure, and he has improved Eskom's trust in the province to deliver on its mandate which is evident by strong stakeholder relations." As a result of good working relations established with Eskom, we reported in our address to this house last year that household connections in 2009 stood at 38% and this has increased to 72% in 2012" Eastern Cape Premier Noxolo Kiviet said, during her state of the Province Address in Bhisho on 22 February 2013.



Mr Peter Craig



Mr Thys Möller

Eskom today

ESKOM is in a transformational phase guided by a goal of being a top 5 performing utility in the world; a low cost good investment; a trusted company globally; a greener energy company; and best company to work for.

Unlike the previous decades, where some could have insisted that ESKOM was a self-regulated franchise with limited allegiances to government or any other regulatory institution, the more recent years has seen ESKOM being much more of a 'reachable' face. For instance, ESKOM has franchised operating units in all nine provinces and is faced with a new mandate that seeks to shift the focus and widen the presence and visibility of the business to other entities; there has been an emergence of a new demand to interact widely with provincial stakeholders on a socio-economic level. Eastern Cape is no different.

As ESKOM's efforts have grown from strength to strength in the engineering front in the Eastern Cape Province, the efforts in Corporate Social Responsibility have also been met with equal vigour. Several millions of South African Rands have been ploughed into the province. With projects ranging from sponsoring education, particularly the Further Education and Training (FET) sector with state-of-the-art equipment to East Midland FET close to Port Elizabeth. Additionally, several high schools in the Grahamstown area were donated with several mobile computer laboratories through the Eskom Foundation.



There has also been an engagement with the provincial government that has enabled ESKOM to forge links with the Province in order to speed up service delivery. In 2012, Eskom signed a memorandum of understanding (MoU) with the Eastern Cape provincial government and the Eastern Cape House of Traditional Leaders to ensure the commitment from all parties. The MoU has standardised communal land acquisition process for electricity development infrastructure. Additionally, if one looked very closely at the audience that this province hosts; it becomes clear that procedures that ensure the acquisition of land are significant for reaching the poorest of the poor.



The demand of electricity in the province has increased to 1674 MW of 36970 MW national demand totalling 3.5% of national demand, as per the 2012 figures. With 4x Hydro Stations with 61.4 MW rated capacity managed by the operating unit together with 42 286km of a total 395 000km of lines and 173 distribution substations have been established in the Operating Unit. More so, ESKOM's current customers base as at 2012 is 651 143 customers in the Eastern Cape alone with 98% of those being residential customers, while 0.01 is municipalities and 1.99% belonging to industrial, mining, commercial and agricultural customers.

It takes some appreciating of the roots of the energy sector in the province that makes our 'todays' all the more worthwhile. It takes little more of looking back to let us know where we are as an organisation and where we are heading within this province.

At the end of March 2011, Eskom had connected 4 million rural customers as part of the Integrated National Electrification Programme (INEP). This has brought the overall level of rural electrification in South Africa from 36% in 1994 to 83% rural household connections currently. Rural Electrification has increased from 12% in 1994 to almost 60% at the moment.



This milestone was celebrated in the Eastern Cape on 12 June 2012, through a launch of three big electrification projects within Mquma Local Municipality. These three were, Butterworth Phase 5 (4173 new household connections), Centane Phase 4 (2659 new household connections) and Ngqamakhwe Phase 5 (2093 new household connections). These connections were made possible through the newly constructed 20 MVA Godidi substation, worth a total value of R40million. This substation allows for a total of 8000 new household connections in the greater Centane area.



The Eros-Vuyani project, the anchor of power and stability

Increased demand for reliable electricity supply in the Eastern Cape Province necessitated that Eskom Transmission, Power Delivery Project department improves the reliability and capacity of the transmission network into the area.

Based on the East London Transmission network analysis, the East London area load has increased beyond 500MW, which qualifies for the application of the N-1 planning criteria.

In addition to the above, Distribution is experiencing low 132kV voltages levels at a number of substations in the East London & Mthatha area. Hence there was a need to reinforce the network in the Mthatha area to cater for network reliability under N-1 contingencies and to maintain a good supply to Distribution customers.

As a result the Greater East London Strengthening scheme was initiated. Where this scheme would provide the very first 400kV Transmission infrastructure into Mthatha area, which is the former Transkei. This scheme started mid-2011 and includes the construction of Eros-Vuyani 400kV line (KZN-Mthatha), Vuyani substation (Mthatha) and Vuyani-Neptune 400kV line (Mthatha-East London) respectively.

Much more can be expected of the Province; several projects are currently underway, in fact, the Eastern Cape Operating Unit announced last year that R11 billion is set to be ploughed into the Province for purposes of Strengthening and Refurbishing. Indeed the Mpuma Koloni is looking over the horizon and the prospects are undeniably bright.



2010 FIFA Soccer World Cup



This was also a decade that saw South Africa host the 2010 FIFA World Cup, which had the rest of the world looking at our country and with anticipation of whether Eskom had the capacity or not to host an event of this magnitude. Eskom's concise objectives for the FIFA 2010 World Cup were to build public confidence in Eskom and the electricity system, value chain from generation, transmission and distribution of electricity to the customer's point of supply. Additionally, Eskom's primary mandate was to ensure a reliable electricity delivery, preparedness and treatment of risks to enable a successful event. This was after looming concerns of whether or not Eskom would rise to the occasion.

Though the World Cup was to be held within the Nelson Mandela Bay (NMB) Area of Supply, it was important for Eskom to identify and mitigate any challenges in any link in the electricity delivery chain that could disrupt electricity.

This meant that Eskom had to partner with key stakeholders and foster collaborative efforts focussing on electricity delivery, under the guidance of Thys Möller, General Manager. Simpiwe Hashe, Network Planning Manager, was mandated to spearhead the Eskom 2010 World Cup project for the Eastern Cape Province for the duration of the games.



The relationship between NMBM and Eskom inclusive of key stakeholders was strengthened at the time which led to the establishment of the Regional Task Teams in May 2008. The structure focused on the integration of efforts across the Electricity Supply Industry, the reliability and integrity assessment of Plant, strategic planning of outages and planned maintenance, emergency response plans integration and testing, risk analysis and mitigation strategies as well as the formation of Regional Awareness Situational Centre for co-ordination and optimisation of efforts aimed at daily monitoring of supply points for visitors' accommodation, tourism and transport, training venues, fan parks, FIFA hotels, media centres, base Camps and most importantly the NMB Stadium and broadcasting area.



Internally, Eskom established a Regional Co-ordinating Committee in February 2009. This committee's mandate was to unite, motivate and focus Eskom staff as the Guardians to ensure reliable electrical supplies for the event, under the banner of the Eskom United Campaign. It was tasked to establish a heightened sense of situational awareness for the events in order to know, analyse, share the status of, and progress on any electricity matters that have the potential to be a reputational risk for Eskom. Dedicated Eskom (core and critical, line and support staff) together with enabling/supportive were identified and appointed enabled by Human Resource policies and guidelines to ensure delivery for the event. Security was heightened and focussed security measures at key installations to mitigate security threats were implemented. Information management was heightened to ensure real time availability and reliability of key and critical information systems.

As part of the emergency response plan, the 2010-specific emergency response structures times and protocols were established. A Joint Operations Centres (JOCs) was established to all Field Services Areas (FSAs) Members of Eskom's disaster/emergency management structures had undergone training. This was inclusive of Emergency Response Command Centre (ERCC) and Regional Joint Command Centre (RJCC) members. Simulation exercises (were undertaken to test the Region's Emergency Response Plans.

The timing and appropriateness of media messages and internal/external communication protocols were established. Eskom's integration with the municipality electrical systems and personnel as well as reliance on the external services (Fire, police, etc.) was continuously monitored. Availability of spares was monitored as well as impact on telecommunication systems was analysed.

Eskom hosted an incident free world cup country wide and in the Eastern Cape Province in particular. As a matter of fact Eskom did rise to the occasion and ensured "That a customer or a member of the public enjoyed a piece of action and this was possible because Eskom employees across the region worked long hours to prepare our networks, update our contingency plans, employed strong stakeholder engagement. With not a single glitch in the system, Eskom was a key player in the overall outcome of the event." said Thys Möller, GM, Eskom Eastern Cape.

The successful hosting of the FIFA 2010 WC by South Africa was rewarded with yet another competition with its own opportunities and challenges, this time around Confederations of African Football (CAF). A huge number of Africans put on their face paint, pulled out their flags and national team soccer jerseys and jumped into a trance of song and dance as they came to South Africa for the 2013 African Cup of Nation (AFCON).

Having established processes and a system that proved effective with the FIFA 2010 WC, with the 2013 AFCON it was only a matter of ensuring that similar strategies be put in place. Under the leadership of January Mtshweni, Network Optimisation Manager for the formation of the Eastern Cape Provincial Nerve Centre (PNC) previously called RSAC, was vital and secured. All other hosting provinces had similar tasks for their Eskom operating units. The main purpose of the PNC was to provide an integrated situational view and monitor any supply interruptions that may impact customers, stakeholders and Eskom reputation to facilitate tactical response. While Bafana Bafana did not repeat the feats of the 1996 generation when they stood on the podium as champions of African football, South Africa along with Eskom championed the event superbly once again.



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Morgan, AJ. (2000). The Symphony of Power – The Eskom Story. Chris van Rensburg Publications (Pty) Limited. JHB.

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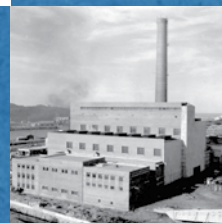
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