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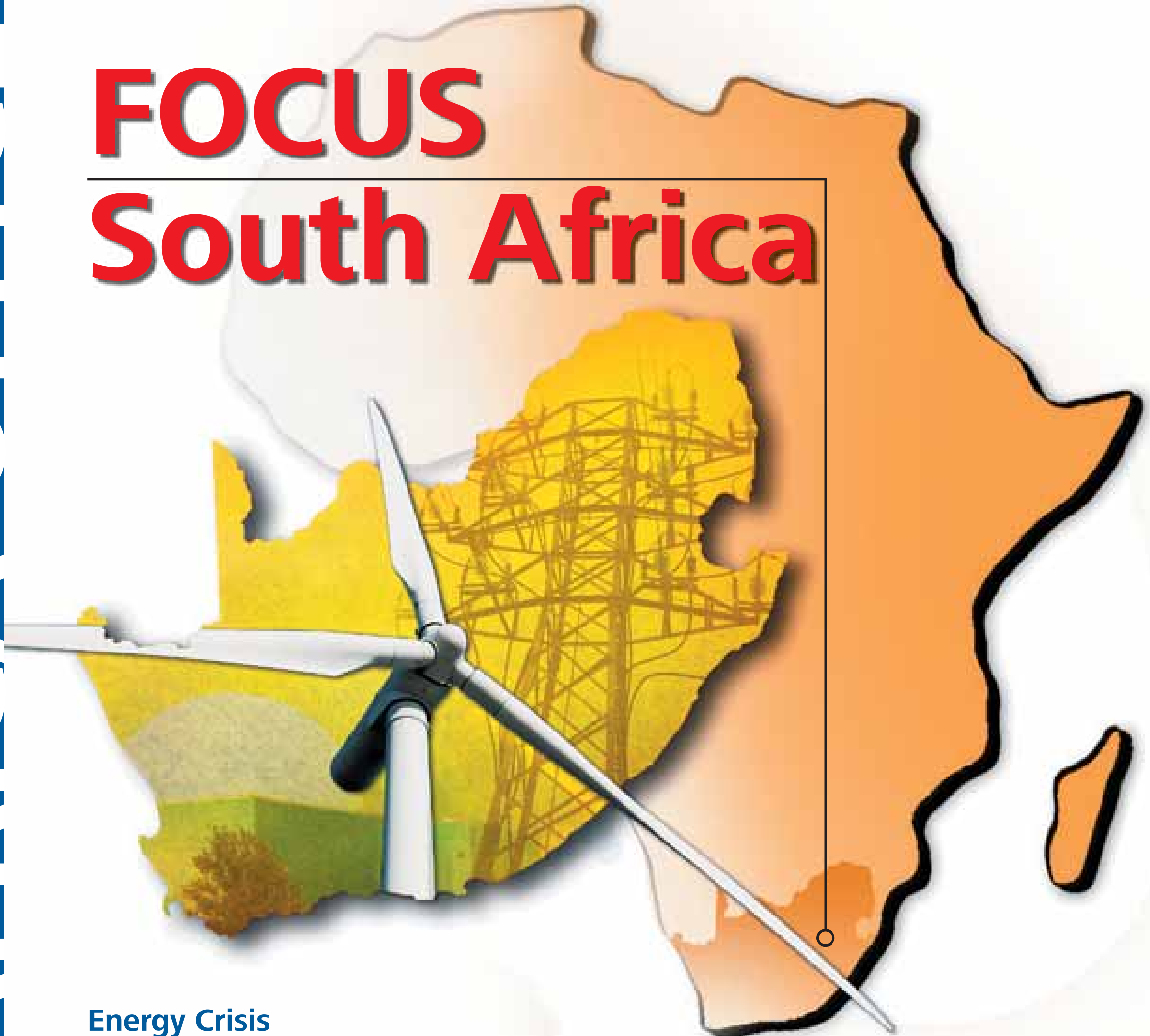


Energy Crisis

South Africa under-powered?

South Africa currently faces a grave energy crisis. For months now the country has been troubled by power failures, which have subsequently become subject to a schedule. The capacities of the national power supplier Eskom have been overloaded, and its reserves exhausted. Furthermore, investment has been delayed for many decades, and with it the consequent modernization of the entire sector. Now, entire areas of the country are regularly disconnected from the power grid, in order to avoid a total power failure. The country's mines now have to run on five per cent less power. Eskom has requested that the population and economic sector save a tenth of the past current consumption. For this purpose the South African government announced a new tax on power and fuel in February. In April however, Eskom introduced an additional surprise with an increase of the electricity tariffs by 67 per cent, much to the outrage of opposition, consumer federations and trade unions. World-wide, South Africa has the most affordable power, but it would seem that the demands of the population have ultimately brought it to its limit. The government is in a serious dilemma.

„The era of cheap and abundant electricity has come to an end."

Thabo Mbeki, State of the Nation Address 2008

FRIEDRICH EBERT STIFTUNG

In its Christmas message last December, the South African power supplier Eskom announced: „For the next five years South Africans must acquaint themselves with the fact that power failures will take place on a regular basis." During the festive season, Eskom regularly had to remove entire areas from the power grid. Its capacities were exhausted and the reserves depleted, which ultimately led to an overloading of the distribution network. Private households, enterprises, mines and traffic systems in almost every area of South Africa went without light (and, by extension, power) for several hours. Electrical garage doors no longer opened, refrigerators failed, machines stood still, electric stoves and ovens no longer delivered any warm meals – and chaos ruled on the roads. Surprisingly, even large cities such as Johannesburg, Durban and Cape Town were affected by what has become known as "load shedding".

Experts had long ago foreseen an energy crisis for the developing country, and now it has taken place. After more than ten years of continuous economic growth and the extension of electricity distribution to more regions since the end of apartheid, Eskom is no longer able to meet the country's power demands. The country has insufficient power stations and an under-developed electrical system. The high rise in the demand for power inevitably led to an obstruction of production, which subsequently caused the entire system to become susceptible to disturbances. Only by immediately curbing the demand, could further and unexpected losses be prevented.

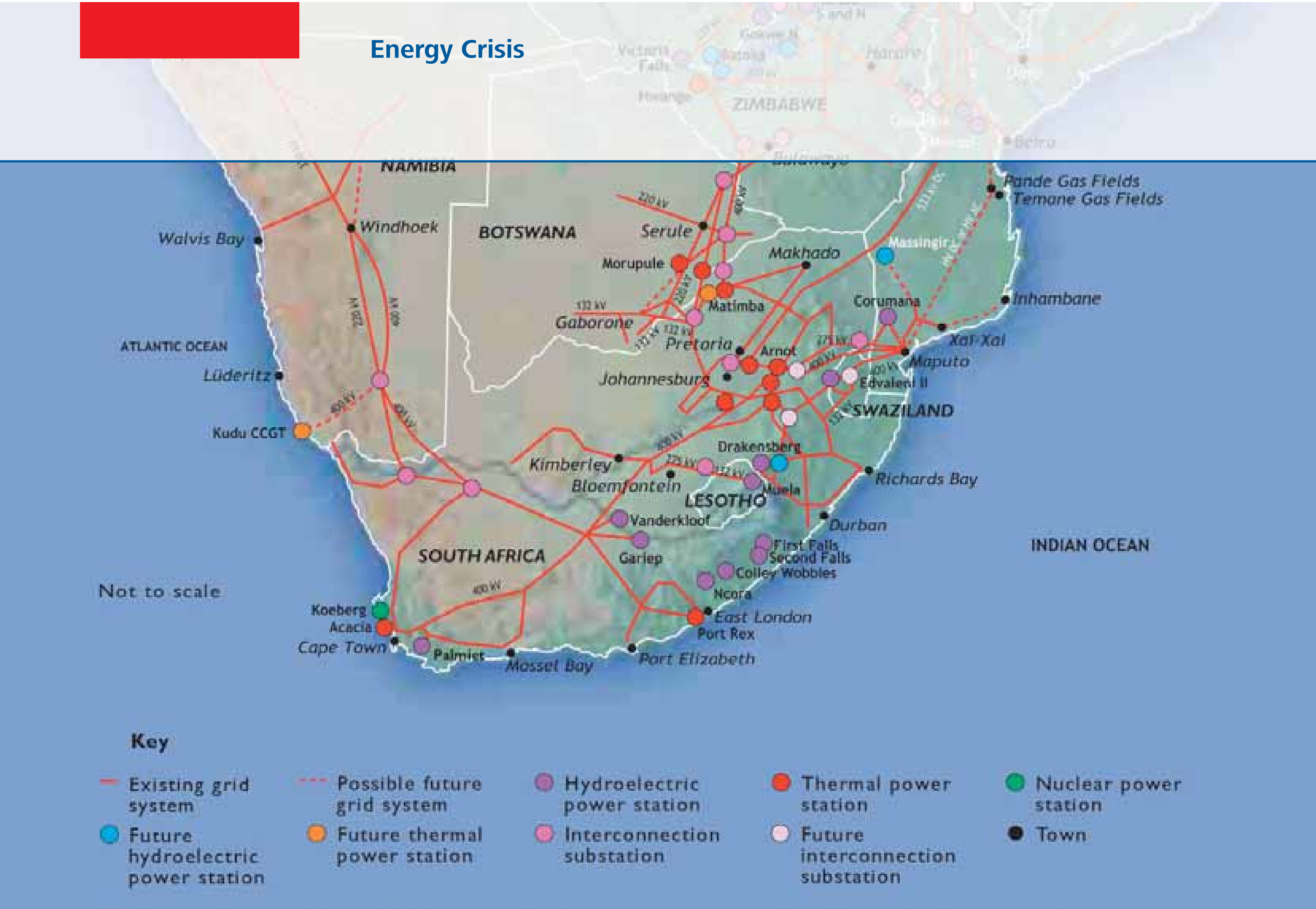
Eskom finally pulled the emergency brake: After the entire country found itself surprised by power failures lasting between two and six hours, it requested the population and the economic sector to manage with only 90 per cent of the past current consumption. "We urgently ask the population to save power. Electronic devices such as air conditioning systems and water pumps for swimming pools should be used as briefly as possible, in order to decrease the demand and prevent power failures," asked the enterprise on its web site. In this manner the entire network will be relieved and a stable supply of current will be restored. In addition, South African mines had to survive on 10 percent less power since February. The mining industry contributes 7-8 percent to the country's *Gross Domestic Product* (GDP), directly employing about 500,000 people, while indirectly securing the existence of approximately five million people. In March the mining industry was finally threatened with drastic losses and the dissolution of approximately 7,000 jobs in the gold industry alone, forcing Eskom to increase the supply to 95 percent.

The president switches himself on

That the crisis is profound and requires long-term solutions was highlighted by South African president Thabo Mbeki, in his State of the Nation Address in February. "The era of cheap and abundant electricity has come to an end," warned Mbeki. Starting from April the cost of non-renewable energy will be raised by two cent (ZAR) per kilowatt while petrol and diesel will cost 11 cents more per liter. Minister of Finance Trevor Manuel justified the measure during the presentation of the national budget: "We know that the introduction of a new tax is never a popular move. However, this is an instance where we hope that people will succeed in avoiding the tax. Households and businesses who reduce their consumption by 10 percent or more will find that this levy does not affect their monthly costs." In addition Manuel promised to support the national power supplier Eskom with an additional R60 billion (approximately 4.9 billion Euro) in the coming five years. Due to the energy crisis the country's *Gross Domestic Product* has been threatened with damage to the extent of three percent.

The Limits to Growth

Never before in the history of South Africa has the economy grown in such a rapid and uninterrupted manner as it has since the end of apartheid. The developing country registered an average growth of the *Gross Domestic Product* of four percent since 1996, effectively more than one third of the total African achievement. At that stage it was already clear that the South African energy policy required urgent reform. For this reason the government published the first White Paper on this issue in 1997. It reminded the public that the entire energy sector worked in an in-transparent and inefficient manner, and that investment was conducted in secret, and usually not in areas where it was needed or used. With Eskom in possession of the monopoly, the energy market was protected against competition.



The map indicates the South African power network and interconnections with neighbouring countries

This privileged position deterred investors and low electricity tariffs continued. The White Paper demanded an expansive diversification, more competition and investment-friendlier conditions. Failing this, the Paper warned that the lights would literally "go out" at some stage. Government and Eskom were therefore aware of the impending and threatening energy crisis, but while politically a conversion of the recommendations was delayed, the monopolist made headlines with allegations of inactivity and miss-management. Even the *National Energy Regulator* (Nersa), which was established eight years later remained inactive for an extensive period of time.

South Africa has relied on its abundant coal resources. Approximately 95 percent of the electric current is produced from coal, with a further 23 percent produced from liquid fuels. Under present conditions South Africa could survive for more than 200 years on its coal resources. With oil however, this is not the case. From its own production the country is only able to sustain about ten percent of its own need, and resources are diminishing at an increasing rate. The remainder has to be imported, particularly from neighboring African countries such as Nigeria and Angola. In addition South Africa has a nuclear power station outside Cape Town and draws a further portion of its energy from Mozambique, where it was involved in the building of the Cahora Bassa Dam.

New Expenses

The "blackouts" are not due to the lack of reserves. The problem is that, capacities for production and distribution of power are missing. In December the crisis became acute and consequently demanded even higher prices. In April Eskom requested a further increase of electricity tariffs by 53 percent for 2008/2009. The energy regulator Nersa had already agreed on an increase of 14,2 percent, but was once again encouraged to dig into the pockets of the consumers. The price increase was justified by increasing administrative expenses and raw energy prices. According to the regulator, this was done in order to avoid a price increase of 100 percent in 2009/2010, directly in the sensitive period of the soccer world cup.

At the same time the state-controlled company submitted a comprehensive business report. Nersa then published the report on its web site omitting certain aspects of the authority's business history, much to the anger of the population, the trade unions and the opposition. They requested Eskom to publish the entire report. According to the main opposition party, the *Democratic Alliance* (DA): "There are no substantial grounds for Eskom to keep information regarding the tariff hike a secret as Eskom is a public enterprise owned by the state and financed by public money. The adjustment authority refused, however, claiming that: "it's just a couple of paragraphs containing commercially sensitive information," according to Nersa spokesperson, Charles Hlebela. The public has the opportunity up to April 29 to express their concerns and views regarding the price increases and the official report. A public hearing is scheduled for May 23 with a final judgment regarding the regulating authority to be delivered on June 6.

The attitude of the government

The South African government is on the side of the energy regulator. According to the Department of Public Enterprise: "The government supports the increases in the electricity tariffs in view of the increasing prices of fossil fuels, particularly coal and diesel as well as the need for the urgent implementation of an inquiry-based management program. (...) The new measures form part of the crisis reaction plan and aim to reduce the current consumption and ultimately the pressure on the network." Minerals and Energy Affairs Minister, Buyelwa Sonjica, defended the company's decision, stating that: "If Eskom were to increase the prices, South Africa would still have the lowest electricity tariffs in the world." She did not deny that the increases would result in similar increases in the prices of fuel and food. Similarly she appeared to bear in mind the fact that the governor of the reserve bank, Tito Mboweni has had to deal with an unscheduled inflation of nine percent, and that the population took to the streets in protest against the drastic increases in food prices last week.

According to Sonjica, the government is considering "to cushion he poorest people." Particularly vulnerable households are to be subsidized and the prices of gas and fuel are to be regulated. Furthermore R1 million is set to be made available for solar-powered cookers. "One way or another, you and I would have to pay," indicated the less than optimistic minister. She also urged the population to save power: "Naturally the government understands that the public is annoyed. Therefore, the best way is to curb consumption now." Eskom has also promised that: "As soon as the prices are on an economically acceptable level, they will increase only slightly, adapted according to the inflation rate."

Violent Criticism

Numerous consumer federations however, have demanded that the new calculations and increases are either settled on in a time-delayed manner, or boycotted entirely. Furthermore, Eskom has registered an increasing amount of illegal electrical connections, and cases of cable theft. Last year, 449 cases of cable theft were reported, with 144 km of cable stolen in total. Cumulatively the damage amounts to approximately R16 mil-

Buyelwa Sonjica, Minister for Minerals and Energy lion (approximately 1.3 billion euro). "The problem of illegal connections has increased in some areas," according to Eskom spokesperson, Tony Scott, "especially in Johannesburg, the Vaal Triangle, the West Rand, Bloemfontein, Kimberley and Welkom." Besides the fact that Eskom is then denied income, these incidents often result in accidents with often deadly consequences. Ultimately then, Eskom must pass the costs for this onto the consumer. It is also for this reason that the network is unstable and overloaded, leading to increasing prices, according to spokesperson Scott.

The government in the face of large challenges

The country's largest trade union federation, the *Congress of South African Trade Unions* (COSATU) has reservations that the South African tariffs are low when compared internationally, in light of the fact that millions of individuals in South Africa survive on irregular work and insufficient income. An examination and comparison of the costs to the population and to large companies, demonstrates an unequal distribution of weight. The production of power costs Eskom 16 cents per kilowatt. Industry is charged exactly 16 cents, while the public pays 44 cents. Regardless of this, large companies are charged lower rates.

In his last year in office, President Mbeki must implement more free-market economy in the energy sector on the one hand, in order to cover the costs brought about by rising consumption, and to attract investors. On the other hand, more than half the population still remains unemployed and lives in poverty and will not be able to cope with further price increases. Therefore it is important that the free market penetration of the sector be facilitated socially. Whether the government will make use of the domestic budget for it, remains uncertain.

In his State of the Nation Address Mbeki promised the search for alternative energy sources, new partnerships and increased energy efficiency. In January the government published a crisis plan, highlighting the intended acceleration of new power production projects and the development of the supply network. Eskom intends reducing the general demand by 3000 megawatts by 2012 and by 5000 megawatts by 2025. The electricity tariffs are to be adjusted according to the level of the free market and energy efficiency will also be worked on. In 2013 the first of a new generation of power stations will be introduced. In addition two new coal-powered power stations and a nuclear power station are planned. Furthermore, three power stations which were closed in the 90's are to be modernized and incorporated into the network again.

A new nuclear power station is to be built with the cooperation of the French enterprise, Areva and the American company, Westinghouse Electric, which is set to supply power by at least 2016. This will be followed by the development of additional nuclear power stations by 2025. Together with currently the only nuclear power station which is located at Koeberg in Cape Town, the first Pebble Bed Modular Reactor (PBMR) is scheduled for development, representing the most capital-intensive technological project with an estimated value of R17 billion (about 1.3 billion euro), since end of the apartheid, and from which ten additional reactors could follow.

The plans for the development of new coal and nuclear powered stations remain highly disputed. Some experts are of the opinion that solar energy, as well as hydro-powered energy would supply the country with more favorable and stable power. "An area with the size of 70 x 70km in the Northern Cape province could sufficiently meet the South African power requirements," according to expert Shaheed Mohammed, "ultimately South Africa has enough coasts, deserts and wind." Raoul Goosen of the *Energy Development Corporation* is of the opinion that approximately 5 percent of the South African demand could be covered by wind power, hydro power, solar energy as well as biomass energy. According to Goosen, the use of water remains under-developed in the region. In the White Paper on renewable energy, which the government had already published at the end of November 2003, the intention was stated, to generate 10 000 Giga watts of power per year from renewable energy, as from 2010. This project has yet to be developed. Furthermore, the government has yet to contribute its share of the Kyoto-Protocol as well as to the protection of the climate. Whether the political will is strong enough for this remains uncertain. ■

Editorial

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