

Moving beyond blame: what is required to shore up Eskom

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What is not widely appreciated after the devastating power failures over the past weeks is that even if government and Eskom had planned well, and had maintained an internationally accepted capacity reserve margin of 15 to 20 per cent, South Africa would still have experienced blackouts.

Yes, it is true that the Energy Policy White Paper, which was published in 1998, predicted power shortages by 2007 and recommended that an investment decision on new generation capacity was needed by the end 1999, at the latest. Yes, it is true that government prohibited Eskom from building new generators between 2001 and 2004 while designing a competitive electricity market that aimed to attract private sector participation. Yes, it is also true that the planned power exchange was never implemented and that there was no way for interested private power companies to secure power purchase agreements that reflected the cost of new power investments.

Yes, all these factors have contributed to the current power crisis. We do not have sufficient generation capacity to cover the required operating reserve to maintain system stability plus planned maintenance downtimes plus an additional allowance for historical levels of unpredictable, unplanned plant failures and trips. But these planning and investment failures do not fully explain the power cuts of the past weeks when about a quarter of Eskom's existing plant was down and the national grid almost collapsed.

The damage has been incalculable. Over the past ten days I've been traveling in the US and UK. Headlines, in the Wall Street Journal and other major news services, of gold, diamond and platinum mines being shut because of power cuts, have imprinted indelible images in the minds of investors: Kimberly, the Rand, all that gave birth to our industrial economy; and now we cannot even keep these mines powered!

So what is the full explanation for the blackouts? The inescapable answer is that, in addition to policy, planning and investment failures, Eskom is now incapable of keeping sufficient numbers of its existing generating units running. Eskom has an installed capacity of about 40,000MW. The utility keeps about 1800MW as an operating reserve to maintain system stability. It makes provision for an additional 2000MW in unplanned outages. In summer, when demand is low, it might shut down up to 10 per cent of generators for planned and necessary maintenance. It's Koeberg nuclear units also need to be refueled every 18 months. Yet, in addition to these planned outages, Eskom lost a few more thousand megawatts of capacity through crippling and unexpected plant failures.

Eskom, when pressed, provides explanations for these breakdowns: wet and poor quality coal, boiler tube ruptures, network trips, etc. But these are proximate causes. They do not

explain ultimate causes. No utility should lose a quarter of its generation capacity. Why is this happening? We could speculate. Eskom's generation plant is old: some units were built 40 years ago. And it has been running these old units flat-out to make up for its low reserve margin. Perhaps it has also been forced to scrimp on maintenance. There isn't enough time and space in summer to do all that is necessary. Perhaps Eskom is also feeling the skills crunch? We can only speculate.

What is now needed are facts and analysis that lead to evidence-based conclusions and sound recommendations for remedial actions. We need an independent commission of enquiry by respected local and international experts. South African consumers are angry, and rightfully so. They are reliant on a monopoly electricity provider and have no alternative choices. There is much speculation as to the reasons for the current power shortages. Some of it is ill-informed. An independent enquiry would at least create some common understanding of how we so quickly migrated from a period of cheap and reliable electricity to an uncertain future of power scarcity and rolling load-sheds.

I would propose that the commission of enquiry look not only at policy, planning and investment failures, and the inability to keep existing plant operating satisfactorily, but also at our future investment programme. Some of the planning confusion persists. The Department of Minerals and Energy (DME), the National Energy Regulator and Eskom still have different power plans. There are no rational, transparent or published criteria for allocating new-build opportunities between Eskom and the private sector. The Single-Buyer Model, whereby Eskom might purchase power from private producers, has still not been fully designed or implemented.

We need to know also why the DME has still not reached financial closure on the contract for peaking power from independent power producers, more than four years after it was authorized to do so by Cabinet. We need to know why Eskom has still not agreed to power purchase agreements with some of the more attractive cross-border options, such as the Mmamabula plant in Botswana, and why its own plans to build new coal-fired stations have slipped beyond original target dates. These delays have not only resulted in huge escalations in costs, they exacerbate and extend the period before we can restore supply security. When Eskom says we shall experience power shortages until at least 2012 or 2013, they mean it!

There are many additional issues around fast-tracking the contracting of industrial cogeneration plant, energy efficiency initiatives and feed-in tariffs for renewable energy. And while the focus is currently on generation capacity, we should not forget that security of supply is also threatened by the failure to restructure the distribution industry. The continued uncertainty in this sector has led to serious underinvestment. Networks are not being adequately maintained or strengthened. Skilled and experienced staff are retiring and new, qualified engineers are not being recruited in sufficient numbers. We shall probably, in time, make sufficient investments in new generation capacity. It is still far from clear that we are making any progress in dealing with underinvestment in human and physical capital in the electricity distribution sector.

Finally, we need to be sure that the proposed power rationing programme will be well designed and executed and that it will be market-based: i.e. that quotas can be traded and that the most efficient investments in power savings will be made, thus minimizing economic damage and reserving space for growth in new investments.

If we respond adequately to the above challenges, we might even be able to induce a positive restructuring of our overly energy-intensive economy. After all, movement to more efficient energy consumption patterns will ultimately lower input costs and could increase the competitiveness of our economy as well as improving our environmental performance through reducing greenhouse gas emissions. Sometimes crises create opportunities. Reliable and respected analysis and well designed and executed remedial actions might yet generate a positive outcome.

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