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Commission of inquiry could lead us out of power crisis

02 Oct 2014 | Anton Eberhard

Anton Eberhard: Commission of inquiry will help us understand origins of the power crisis, lessons to be learnt, and could offer policy proposals for reforming the sector

SA FACES its worse power crisis in 40 years. Eskom has now admitted in Parliament that, after five years of electricity shortages, we are likely to face another five. A decade of power constraints will cripple aspirations to grow our economy.

We need to understand how this crisis emerged and how we can fix it; we need a commission of inquiry to consider deep-rooted power sector reforms.

The realisation that Eskom cannot fix the power crisis anytime soon is dawning slowly on the government. Eskom was seen as integral to the developmental state, and its mega coal power stations — Medupi and Kusile — were meant to power the economy into the future. However, we now know that these new power units are years late, way over budget, and are constraining rather than facilitating economic development.

The 100-day countdown to the synchronisation of the first of six power units at Medupi has begun. But this is mere spin: it will take at least another six months before this unit produces reliable power.

What has not been made public, but has been admitted privately by senior Eskom managers, is that the second Medupi unit — originally due six months after the first — will be commissioned only two and a half years later. Kusile's first unit is due to come online only in 2016, then there is the long, difficult task of commissioning the remaining units. Full power may be available only in 2020.

Ironically, while Eskom battles to add new generation capacity, it has lost the equivalent of a whole power station through breakdowns in its existing power generation fleet. Over a decade, plant availability gradually declined from 90% to 85% but, over the past three years, it has fallen precipitously to 75%. Eskom plans to reverse this trend but scant details are available on how it will accomplish that. By its own admission, 32 of its 87 coal-fired generation units need major surgery and three are in a critical condition.

A third crisis is about to hit Eskom: soon it will not have enough coal to power its generation stations. Adjacent coal mines and long-term supply contracts are reaching their end dates and, within a few years, uncontracted coal for Eskom will reach a staggering 80-million tons a year.

No investments are being made in new coal mines to make up these deficits. There are two major obstacles. Eskom's shareholder ministry declared, with little reference to existing law, that new coal mines supplying Eskom should have majority black ownership. The government has also hinted that coal might be declared a strategic mineral, with price regulation and export restrictions. None of the major international coal mining companies, which supply more than 75% of Eskom's coal, will invest under these conditions. What these proposals ignore is that the economics of many coal mines (especially in the Waterberg) are maximised when supplying coal to export markets and Eskom.

Cost overruns, delayed revenue from Eskom's new power stations, and poor performance of its existing fleet have worsened Eskom's financial crisis. Eskom is not generating enough cash to service the debt it needs to raise to fund the completion of its new power stations. The government has indicated that it plans to inject further equity to strengthen Eskom's balance sheet and that it will sell "nonstrategic" state assets. But privatisation takes time and will be opposed by members of the ruling alliance.

Credit-rating agencies have warned that a downgrading of Eskom's debt to junk is likely unless the government can provide more details on its financial rescue package. That would result in a downward spiral of more expensive loans, more pressure on its balance sheet, and even bigger challenges in the funding of its capital expansion programme.

If Eskom is unable to power economic growth and development in the short to medium term, what are the alternatives?

The past three years have seen an extraordinary response from the private sector. R120bn has been invested in 64 renewable energy independent power projects (IPPs), totalling 3,922MW, through a world-class, transparent and competitive procurement programme run by the Department of Energy with support from the Treasury. Prices for wind energy fell 42% between the first and the third bid rounds — to 66c/kWh — much lower than electricity from Eskom's new power stations. Many of these plants are already supplying the grid.

The renewable energy programme could be expanded but needs to be complemented by gas turbines that fill the supply troughs when the wind does not blow or the sun does not shine. In addition, many industries produce waste heat that can be converted through cogeneration plants to electricity. The department's IPP unit is also planning a competitive procurement for a new private coal-fired plant that will be cheaper, and will be built more quickly, than Eskom's Medupi and Kusile. Energy efficiency investments could also help mitigate supply shortages.

There are long-term plans for the development of gas resources and imports of hydroelectricity, but these will take time, as will nuclear power, which is a dangerous and costly distraction that will contribute nothing to resolving our immediate power crisis.

While alternative power sources provide promise, the institutional framework for securing and expanding their contribution to SA's energy mix is both fragile and restrictive. The IPP unit is an ad hoc arrangement that arose in response to Eskom's failure to procure and contract IPPs. It has too few staff, inadequate governance structures and relies on the expertise of a large (albeit excellent) team of local and international consultants.

Greater policy and regulatory certainty is necessary to free up private sector initiatives and investment. IPPs should have nondiscriminatory access to the grid and be able to wheel out power to qualifying customers. And electricity planning, procurement and contracting functions need to be embedded in a capable organisation that is independent of Eskom's power generation so that IPPs can compete on an equal footing.

The creation of an independent system and market operator is one option. Another, more elegant, solution would be to spin off Eskom generators into separate companies and for Eskom to retain the grid, system operation and market functions. Eskom is now probably too big to manage effectively; it has 47,000 employees and annual revenues of R140bn. Separating out the potentially competitive generation units from the grid monopoly makes sense and has been accomplished in dozens of countries.

A commission of inquiry will help us understand the origins of the power crisis, the lessons that should be learnt, and could offer policy proposals for reforming the sector. There is a historical precedent for this. When Eskom last embarked on an ambitious programme to build new power stations, it led to a crisis in funding, cost and time overruns, and high tariffs. The recommendations of the 1983 De Villiers commission led to profound changes in Eskom's organisational culture and efficiency.

A new commission of inquiry will help us understand what has gone wrong. It can build on the restructuring proposals in the 1998 energy policy white paper, which were never implemented, and will provide the basis for opening the sector to investors and operators that can help restore electricity supply security and economic growth.

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