

Media Release

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Eskom should curtail Kusile construction, decommission older coal-fired power stations to save costs – new study

New research, released by Meridian Economics earlier today, shows that Eskom should decommission its older coal-fired power stations and consider curtailing the Kusile construction programme in order to save costs. These interventions can be achieved without affecting security of supply.

The Meridian study, entitled “Eskom’s financial crisis and the viability of coal-fired power in South Africa: Implications for Kusile and the older coal-fired power stations” (www.meridianeconomics.co.za/documents/) also shows that South Africa does not need a nuclear, coal or gas power procurement or construction programme. Instead, the country should accelerate its transition to cleaner, cheaper, and more sustainable renewable energy when further capacity is required.

Dr Grové Steyn, Managing Director of Meridian Economics, says: “Stagnant demand and Eskom’s large power station construction programme has resulted in a growing surplus of expensive generation capacity. At the same time, the operating costs of Eskom’s coal-fired power stations have consistently increased. This has forced Eskom to implement the highest tariff increases in recorded history, and has led to a growing solvency and - at the time of writing - a liquidity crisis.”¹

The Meridian investigation focussed on the following two questions:

1. Should Eskom cancel part of its power station construction programme to reduce costs? (This part of the study focussed on units 5 and 6 of Kusile power station).
2. Should Eskom bring forward the decommissioning of some of its older coal-fired power stations to reduce costs? (The investigation focused on Arnot, Camden, Grootvlei, Hendrina, and Komati power stations).

¹ See <https://www.fin24.com/Economy/Eskom/exclusive-eskoms-cash-dries-up-20171113-2> and <https://www.businesslive.co.za/bd/national/2017-11-13-eskom-runs-out-of-cash-as-loan-facilities-dry-up/>.

The study was arranged into two components. The first was contracted to the CSIR Energy Centre and comprised of modelling reference scenarios for the least cost operation and future development of the entire South African power system. This least-cost system model was then used to calculate the cost in c/kWh to replace the power using other resources, for each of the stations investigated, should it be removed from the system.

The second part of the research was conducted by Meridian Economics and investigated the incremental cost (c/kWh) associated with running a particular station for its remaining life, which - in the case of Kusile units 5 and 6 - includes the avoidable capital cost of completing the units. Our method allows us to assess whether the costs associated with running a station for its remaining life exceeds the value of that station to the electricity system. The comparison hinges on the alternative cost of meeting demand if a station is decommissioned early, or if new plant construction is cancelled.

Steyn says: "If the system can meet demand over the same period by using alternative resources such as other existing coal stations, wind and solar – but at a lower cost than the cost of electricity from a particular coal-fired power station – it makes economic sense to decommission that station early, or not to complete it."

The system analysis undertaken by the CSIR Energy Centre found:

- New coal and nuclear plants are simply no longer competitive against the falling costs of renewables and associated technologies.
- For the foreseeable future no gas fired power stations are required (peaking gas turbines can run on liquid fuel).

This means that South Africa does not need a nuclear, coal or gas power procurement or construction programme.

The Meridian investigations into the individual power stations found:

- Considered one at a time, it makes financial sense for Eskom to decommission the older stations early, since the system can meet demand at a lower cost by utilising alternative resources, rather than by running each of the stations. For the most plausible moderate demand growth scenario this conclusion holds even if three stations are decommissioned early (Grootvlei, Hendrina, and Komati – GrHeKo), which could save as much as R12.6bn in present value terms.
- Decommissioning GrHeKo *and* avoiding the completion of Kusile units 5 and 6 could give rise to a net financial saving in the region of R15bn - R17bn without affecting security of supply. These estimates do not reflect the additional large savings in the impact on human health, local environment and climate change that will result.

Despite Eskom's dire financial circumstances, it nonetheless has not yet committed to decommission any of its older plants, even as they approach the end of their lives and

the costs of running the older stations increase. With Eskom's on-going governance crisis, it appears that Government and Eskom are partially paralysed, and could struggle to take the right decisions in the public interest. It is therefore critical that the National Energy Regulator (NERSA) ensures that these issues are investigated and addressed, and that Eskom is only allowed to recover efficient costs in its tariffs.

Steyn says: "Ensuring a just transition for existing employees at coal-fired power stations is of paramount importance. Workers and communities should not bear the brunt of Eskom's financial crisis and the impact of the energy transition. Part of the savings realised could be used to cushion the impacts on workers and communities, and provide support for re-training, skills development, relocation, and more."

Additional crisis measures to restore Eskom's solvency

An even greater curtailment of Eskom's construction programme might be necessary to restore solvency.

Steyn says: "If Eskom's financial crisis continues to worsen, as we suspect it might, more drastic steps must be considered in light of the systemic risk to the state and the entire economy. If the options of substantial tariff increases and further government bailouts are exhausted, Eskom will have to urgently find other ways to maintain its solvency and avoid a liquidity crisis. In the case of such a national crisis, the only option will be to reduce the haemorrhaging of cash. The question will be: how can this be achieved without letting the lights go out?"

"The level of surplus capacity that Eskom now anticipates for the foreseeable future is at least equal to what an entire Medupi or Kusile power station provides, or more. The unavoidable conclusion is that Eskom is still spending vast amounts of capital on a power station construction programme that South Africa does not need and Eskom cannot afford.²"

"Drastically curtailing Eskom's power station capital programme (beyond Kusile 5 and 6) might be the only way to restore its solvency. This will come at a high cost in terms of the penalties to be paid to construction companies sometime in the future, and in terms of the impact on personnel working on the construction projects. But, in the increasingly likely scenario of such a national crisis, this strategy could contribute to rapidly improving Eskom's cash flow situation and lender confidence in Eskom and the state."

² To put this into context, we estimate that Medupi and Kusile will still require at least R80bn capital expenditure (excluding interest) as of March 2017.

In this scenario South Africa might well face a stark choice: abandon a large part of the Kusile (and possibly part of the Medupi) project, or allow Eskom and possibly the state to default on its financial obligations and pay an enormous economic and social price.

“In either case it now appears critical that Eskom puts in place a process to plan for the urgent decommissioning of its older power stations and prepares for the possibility that its capital programme will have to be curtailed. Furthermore, it will be unrealistic to expect Eskom to drive these decisions on their own accord. It will be necessary for responsible politicians, key government departments, the NERSA, consumers and other stakeholders to act in order to protect the integrity of South Africa’s power system and the national finances,” Steyn concludes.

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