## Imaginative planning strategies will help Eskom

'The evolution of SA's electricity supply problem, and its resurgence, has been attributed to a lack of adequate planning, resourcing and scheduled maintenance. There appears to be an absence of in-depth knowledge about the energy sector, as well as an absence of any innovative solutions to the crisis,' says the University of Johannesburg's vice-chancellor, Professor Tshilidzi Marwala. Using the Medupi and Kusile power stations as an example, he says their designs were done mainly by international engineers, who had to co-opt local engineers to rubber-stamp their designs for compliance. 'We did not have sufficient engineers, engineering technologists, project managers and financial specialists with the expertise to negotiate this deal, or to be deployed to manage the projects efficiently and effectively. Consequently, the construction of these two power stations – which was expected to cost about R150bn – escalated to R450bn. The technical problem became a financial problem that was allegedly plagued with vested interests.' In his analysis on the City Press site, Marwala argues a number of factors have contributed to Eskom's demise: SA has a 'less than adequate' energy mix strategy; Eskom is unable to collect its revenue; there is no political will to make the necessary tough decisions to eliminate load shedding; there has been no attempt to tackle Eskom's bloated workforce; and there is a lack of technical skills.

'Given that Eskom has been riddled with state capture shenanigans, it is difficult to sift fact from fiction. What is undoubtedly true is that our energy infrastructure is old and, in the main, poorly maintained.' Marwala lists four strategies to 'find our way out of the dark':

\* Eskom needs to be rationed so that the mix of technical and non-technical employees is properly balanced – from board level to the lowest levels.

\* The proposed restructuring of Eskom into three components – generation, transmission and distribution – has to be better planned because it will ultimately make electricity supply more complex.

\* Tough decisions need to be made without political interference. Marwala believes Eskom needs a strategic partner 'on clearly defined terms' to turn around its misfortunes and help it regain its solvency and better standing.

\* Eskom's maintenance strategies must be re-examined. Run-to-failure is where assets are deliberately used until the point of failure, leading to unplanned blackouts. Scheduled maintenance is where assets are replaced once they reach the end of their life cycle, and still-working assets are replaced to prevent unexpected load shedding. However, for predictive maintenance, big data analytics, artificial intelligence and blockchain are used to manage electricity systems and finances. Marwala believes this is the route we need to follow.