

Briefing Note : Disrupting electricity – new measures on embedded generation

Neva Makgetla

On 10 June 2021, President Cyril Ramaphosa announced that the government would urgently escalate the National Energy Regulator of South Africa (NERSA) licensing threshold for embedded generation projects from 1MW to 100MW. This move will vastly disrupt the electricity supply system, but it was unavoidable because the older system was no longer fit for purpose. As with most disruptions, it promises enormous benefits, but also entails some risks. The challenge for companies, worker representatives and policymakers will be to maximise the rewards while managing the inevitable costs and risks attendant on any major change.

Ultimately, the decision to facilitate smaller private generation at a commercial scale reflected the sea change in electricity technology over the past 20 years. The kinds of massive coal plants that Eskom historically relied on can no longer compete on cost with smaller, more agile and cost-efficient renewable and gas production. Once smaller power stations become competitive, however, the logic of a monopoly on generation goes away. The state protected Eskom to achieve the economies of scale required for efficient coal generation. That argument no longer holds. As a result, there is no need to maintain Eskom's monopoly on the supply side. Instead of a key pillar for South African economic growth, Eskom has increasingly become synonymous with high costs and loadshedding.

Today, Eskom operates nine of the 90 largest coal-fuelled power plants in the world. That poses an immense threat for the economy both because of rising costs and faults, and because of the climate emergency. From 2008 to 2016, Eskom's revenues climbed from 1,9% to 3,7% of the gross domestic product (GDP). This year, the anticipated double-digit increase in electricity tariffs, combined with the pandemic depression, means they will likely exceed 4%, the highest share since the transition to democracy. Meanwhile, loadshedding surged to its highest recorded levels in 2019 and 2020. According to CSIR research, in 2019, announced loadshedding aimed to reduce demand by 1 350GW; in 2020, the figure came to 1 800GW. As of mid-2020, Eskom anticipated that loadshedding would continue through 2023 as it struggled to maintain and repair its coal plants.

Meanwhile, continued reliance on coal poses a growing risk for all of South Africa's major export industries. Trade sanctions for carbon-intensive products are becoming increasingly likely. South Africa's most electricity-intensive exports come from Sasol and the chrome, aluminium and manganese refineries, which together account for around 6% of exports. But virtually all of mining could come into the crosshairs because they are also major electricity users, and even the auto value chain could face challenges.

The new measure means that producers can ramp up production relatively rapidly, filling the gap left by Eskom's troubled power plants. Moreover, the new sources should be cheaper and cleaner as well. If the regulators implement the new system as anticipated, new capacity should start

coming on-line in the next few months. That will provide a critical boost for South Africa's economic recovery, especially if the vaccine roll out also speeds up through the end of the year.

The new rules represent a true disruption in the electricity market, however. Eskom loses its monopoly on generation, although it will remain a dominant player for the foreseeable future. The grid will remain a monopoly, however, although it is not clear how much of an interest Eskom will retain in it. Critically, grid management will become more complex, as it must balance a host of smaller players and ramp up storage capacity to reduce the unpredictability of wind and solar power. Finally, estimates for demand for electricity will change dramatically as prices should decline while the mines and refineries shift to cleaner energy in order to safeguard their exports in the longer run.

In this context, Eskom has the potential to end up as a smaller but far more competitive force in generation, as well as making rents from the national grid. In contrast, if it remained dependent on coal, it seemed doomed to irrelevance in 15 to 20 years.

For policymakers, the growth that will follow from cheaper, more reliable and cleaner electricity makes everything easier. That said, the profound disruption of the electricity market requires careful management in five areas.

- First, the permits for embedded electricity have to be fast and easy, as promised.
- Second, the national grid must have the resources to upgrade to meet the new demands on it.
- Third, to take full advantage of the new measures, the metros in Gauteng will have to improve their local grids, especially to serve industrial and commercial sites. These regions constitute the industrial core of the country, but they have let their electricity supplies deteriorate to the point where they harm the entire economy.
- Fourth, as Eskom has to compete more on the generation side, it will be harder to ask it to be the supplier of last resort for poor and rural communities. Currently it directly supplies half of all households, and carries substantial debt because many cannot afford to pay for the services.
- Finally, as Eskom loses market share over the coming years, government is responsible for minimising the burdens on the vulnerable groups affected – workers, small suppliers and communities, mostly in Mpumalanga, that depend on coal-fired plants and coal mines.