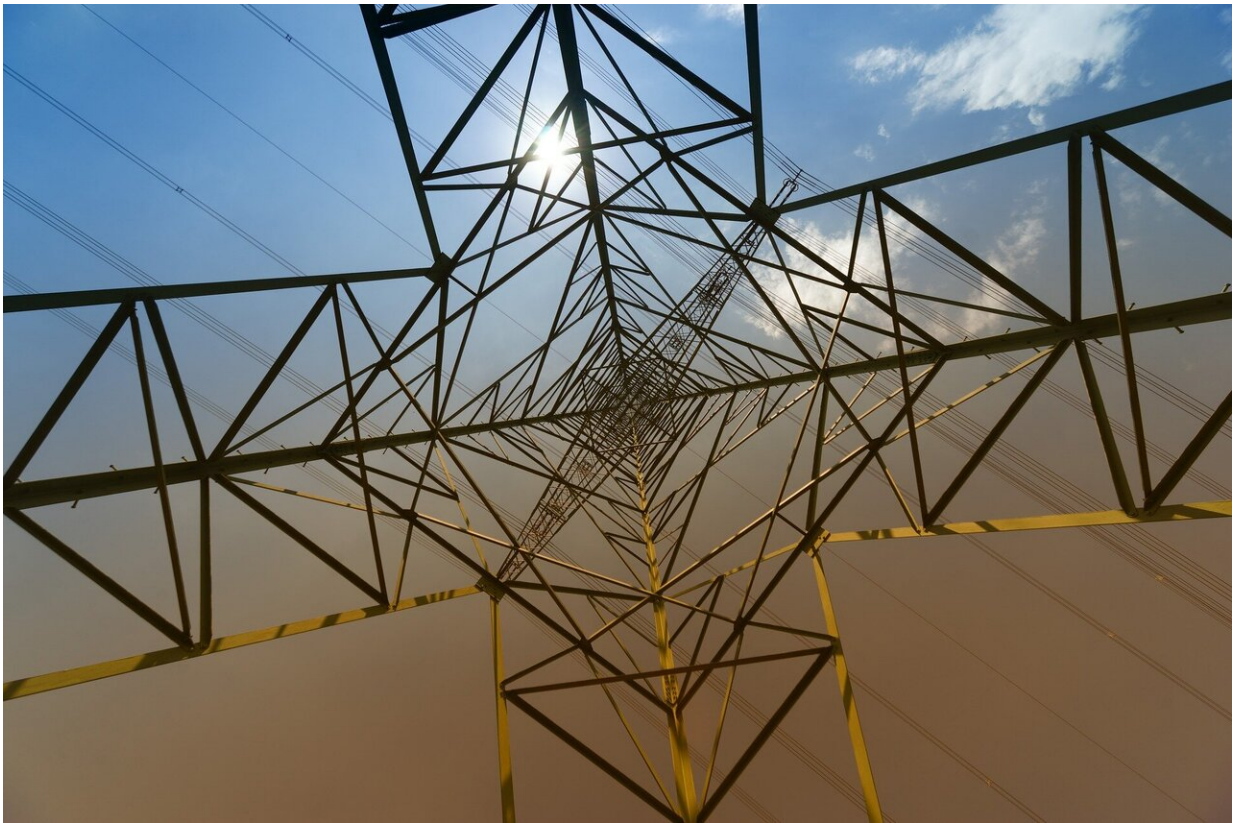


South Africa's energy crisis 'harming research integrity'

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Researchers in South Africa are feeling the effects of the country's continuing power cuts and fear for the impact the electricity crisis is having on their research output.

The crisis is due to aging infrastructure, poor management by state owned [power](#) utility—Eskom, poor investment in the power sector and limited [energy](#) sources

Eskom Holdings SOC Ltd, South Africa's main energy provider, has been implementing what is termed load shedding, by imposing power cuts for a number of hours each day in a planned and coordinated way throughout the country.

"Load shedding is done to protect the national electricity network by balancing supply and demand," says Eskom in a tweet on 27 February. "If this is not done, the national grid will shut down entirely and the entire country will be blacked out for days to weeks."

Nonhlanhla Vilakazi, senior lecturer at the University of Johannesburg's zoology department, tells us that the frequent power cuts are impacting research in South Africa. "Load shedding has affected a lot of scientists and impacted their research outputs," she says.

Cola Mthembu, a doctoral candidate at the department of microbiology at the University of South Africa, is one example. She says "The frequency of the cuts causes disruption to sample integrity in laboratories".

"Turnaround times of research and tests are vastly delayed," Mthembu tells us. "Financially, laboratories spend huge amounts on reagents and equipment, and the backup systems to keep up with load shedding aren't cheap for laboratories that are already spending much to process samples."

Mthembu says that researchers have to closely monitor the scheduled load shedding times and try to work around it.

"Otherwise, it's a matter of having backup power for essential samples or using various freezing methods that will assure sample integrity when the power eventually comes back," she adds.

Having to adjust to the different load shedding schedules has been a nightmare for Mthokozisi Moyo, a doctoral candidate at the department of animal, plant and [environmental science](#) at the University of the Witwatersrand in South Africa.

Moyo tells us that he has been forced to go back to the "old school" way of doing things, in the digital age. "I have been writing things down on paper and...then typing when I have access to power," he explains.

Gwede Mantashe, South Africa's minister of [mineral resources](#) and energy, said at the Mining Indaba conference held earlier this month (6-9 February) that there was a long-term energy security plan to resolve the load shedding issue.

South African President Cyril Ramaphosa announced a state of disaster because of the [energy crisis](#) during his State of the Nation address on 9 February.

However, in a reply to a constitutional challenge filed against him by the opposition party, Ramaphosa later said the responsibility of providing electricity did not lie with him but only with local authorities.

Lungile Mashele, an independent energy expert based in South Africa, tells us that load shedding has resulted in the loss of valuable samples and data, which could affect her research outputs for years to come. She says it is a struggle to find alternative sources of energy as mini sub-stations—electrical connection system designed in smaller sizes—are expensive and not easily accessible to most South Africans.

Mashele tells us that science has a crucial role in the development of alternative energy sources to augment the current low capacity.

"Scientists must be at the forefront of tackling the power issue. We need to come up with ways to advance science without electricity," she says.

Vilakazi adds, "As researchers, we have been preaching about saving planet Earth. I think it is time to act and not rely on the government. I believe scientists must be at the forefront of tackling this power issue."

"We need to come up with ways to advance science without electricity, find new solutions and work on building and manufacturing equipment that does not rely solely on electricity."

Provided by SciDev.Net

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