

Press Release
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Immediate release



Coal still has a place in our energy mix

In a world that's being battered by extreme weather occurrences due to climate change, it seems like heresy to claim that coal still has a place. The fact is that it does, but on condition we can clean up its act.



Source: <https://www.iaea.org/newscenter/news/repurposing-fossil-fuel-power-plant-sites-with-smrs-to-ease-clean-energy-transition>

South Africa's loadshedding crisis continues to underline the importance of a stable electricity supply to keep the economy moving. At least for now, the controversial term "baseload" in this country indicates electricity generation from coal and, to a lesser extent, some nuclear. Peak demand has always been met by our pumped-storage schemes that store and release water to generate electricity, as well as open-cycle gas turbines that run on diesel. Increasingly, renewable energy options are adding to capacity and displacing some of the coal-generated supply from ageing power stations, but commercial, industrial and manufacturing enterprises cannot function to capacity without a stable supply of reliable, baseload electricity.



"The point is that South Africa, and indeed the world, needs a mix of energy sources," says Gcobisa Melamane, clean coal research specialist at the South African National Energy Development Institute (SANEDI). "None of the sources and technologies we currently have can meet the needs of economies and societies on their own."

South Africa's Integrated Resource Plan, drawn up by the Department of Mineral Resources and Energy (DMRE) in 2019 and currently under review, recognises this fact by placing coal status quo at more than 80% of the energy mix. While that percentage is targeted to decrease by almost half (42%) by 2030, coal is expected to remain the dominant energy source for the foreseeable future. In addition, the coal mining and energy generation industries employ thousands of people, adding a socioeconomic impact to the process of transitioning from one type of energy sources to

another.

South Africa is not alone in its reliance on coal. Over the past year, several of the European countries that had previously sworn off coal had to fire up their coal power stations again to deal with the energy shortages that resulted from geopolitical circumstances in the northern hemisphere.

Melamane adds, however, that it's not business as usual in the coal space. Significant time, effort and resources are being dedicated to developing technologies that will limit the environmental impact of coal-fired electricity generation. "SANEDI is one of the organisations in the country researching technologies that can make the use of fossil fuels cleaner so that we can keep using it in a more responsible manner in South Africa. We still have abundant coal resources and it remains a cheaper source of energy. We need to use it while we have it, which makes cleaner technologies a necessary and worthwhile investment."

Against this backdrop, SANEDI launched its Cleaner Fossil Fuels & Related Technologies programme in 2021 to develop a roadmap for the country to improve the environmental footprint of its energy mix.

In terms of fossil fuels, the first phase of the project identified all the technologies that currently exist. In phase two, 18 focal technologies were selected for further study and to understand where and how they are being used globally. In Japan, China and the US, an array of cleaner coal technologies are already in demonstration and even commercial use. The third phase, which kicked off at the end of September this year, is investigating which of the focal technologies are easily adoptable from a grid perspective, taking into account cost of implementation, regulatory compliance and the skills required. The roadmap study is planned to be completed by the end of March 2024 and, once the relevant stakeholders have approved it, South Africa's roadmap to cleaner fossil fuels will be published.

"Our country is responsible for 2% of global greenhouse gas emissions but that means nothing to people here whose health is impacted by poor air quality," says Melamane. "Improving human health and living conditions is one of the main drivers of the research we do."

The focal technologies in SANEDI's cleaner fossil fuels roadmap include high-efficiency low-emissions (HELE) carbon capture and sequestration, underground coal gasification to produce syngas for power generation with lower levels of greenhouse gases, and equipment to reduce nitrogen and sulphur dioxides and particulate matter in flue-gas emissions. Most of these have been proven capable of reducing harmful emissions by up to 300kgCO₂/MWh in international studies. "SANEDI champions collaboration with local and international research organisations to ensure we learn from each other and don't waste limited resources on redoing work that has already completed elsewhere," says Melamane.

For as long as South Africa needs coal to help meet its energy demands, the work to limit its impact on the environment has to continue. We simply cannot afford to satisfy our need for electricity at the expense of the health of humans and the environment.

Ends.

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About SANEDI

The South African National Energy Development Institute (SANEDI), established by the Government, directs, monitors and conducts applied energy research to develop innovative, integrated solutions to catalyse growth and prosperity in the green economy. It drives scientific evidence-driven ventures that contribute to youth empowerment, gender equity, environmental sustainability and the 4th Industrial Revolution, within the National Development Plan (NDP), through consultative, sustainable energy projects. For more information, go to www.sanedi.org.za.

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