

The empty promises of nuclear energy in South Africa

By Power Shift Africa

Across Africa, nuclear and 'green' hydrogen energy projects are being sold as solutions to energy poverty and climate change, but behind these projects lies a repetition of old patterns of exclusion, extraction and exploitation.

The Koeberg Nuclear Power Station in South Africa is one such example. Although not MDB-financed, Koeberg offers an important lesson: nuclear energy should not be treated by MDBs as a viable pathway for climate or development finance, whether through extending the lifespan of ageing reactors or considering new nuclear projects. As the World Bank re-opens the door to nuclear power, Koeberg is a stark reminder of the safety, cost, and justice risks MDBs would take on. MDBs should instead prioritise investments that align with just transition principles and deliver genuine benefits for communities, particularly women, youth, and the most vulnerable.

Africa's only operational nuclear plant, Koeberg, sits on the windswept Atlantic coastline, 35km north of Cape Town. In mid-2024, South Africa's National Nuclear Regulator approved a 20-year extension for Unit 1 of this station, estimated to cost more than R21bn (approximately \$1.12m).¹ The extension was approved despite objections from residents, civil society groups and international experts. The project is criticised for limited public participation and incomplete independent safety guarantees. Experts raise alarms about the safety of the plant and its faulty monitoring systems. Additionally, there is no sustainable waste disposal plan.

Safety, secrecy and sidelining the public

Despite its location in a densely populated area, Koeberg continues to operate with ageing infrastructure, which raises safety concerns. Residents fear nuclear incidents because components aren't replaced regularly, buildings show signs of ageing, and there are shortages of technical staff. Emergency evacuation plans remain outdated and unworkable, especially in low-income neighbourhoods like Atlantis and Joe Slovo Park, which fall within Koeberg's 16km exclusion zone.

Residents say they have little to no access to nuclear safety information, let alone in languages they understand. Local women's groups and civic organisations from Atlantis, Melkbosstrand and surrounding communities report being systematically excluded from meaningful public consultations and denied access to key documents concerning Koeberg's life extension.

An Atlantis community organiser formulates it as follows: "If something goes wrong, we'll be the first to suffer, but we're always the last to be consulted."

Women and youth are disproportionately affected by health and safety concerns. Women often bear the burden of caring for children and the sick during emergencies, and face heightened reproductive health risks from radiation exposure. Youth are more vulnerable to long-term health and livelihood disruptions.

¹ The estimated cost dates back to 2010 (when the Rand was R7.50 to US\$1). Eskom has obscured the actual cost, but realistic estimates are closer to R60bn, which aligns with the pattern of being approximately three times over budget in other large-scale projects run by Eskom, such as Medupi.



Koeberg nuclear power plant, Cape Town, South Africa.
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The nuclear waste dilemma

Safety concerns extend to the treatment of radioactive waste from the station. Koeberg generates high-level radioactive waste, which is currently stored on-site. South Africa still lacks a national long-term disposal plan for this dangerous material, posing a serious and unresolved risk for both present and future generations.

Some of Koeberg's lower-level radioactive waste is trucked to the Vaalputs disposal site in the remote Northern Cape, a facility long opposed by Nama and San communities who say they were not adequately consulted or compensated. Leaders in Namaqualand and Springbok continue to resist the site's expansion, raising broader questions about consent, equity and environmental justice. It also appears inevitable that the high-level waste from Koeberg will be disposed of, or indefinitely stored, at Vaalputs, where communities do not have an option to refuse the dumping of waste in their community.

Nuclear is an ill-suited solution

Koeberg reflects a troubling pattern about nuclear energy in South Africa — one where massive public funds are diverted to benefit private interests under the pretext of national progress. The life-extension project follows a legacy of corruption in the sector, most notably the attempted R1tn nuclear deal with Russian state corporation Rosatom, which was struck down in court after public outcry.²

Despite the urgent need to invest in energy access, local infrastructure and community-owned renewables, the state continues to prioritise expensive, centralised projects that enrich foreign contractors and politically connected elites, while excluding the very communities most affected by these decisions.

²West Coast Environmental Protection Association & Another v Minister of Mineral Resources & Others, ZAWCHC 50 (2017). South African Legal Information Institute. <https://www.saflii.org/za/cases/ZAWCHC/2017/50.pdf>



Koeberg nuclear power plant, Cape Town, South Africa
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