



SOUTHERN AFRICAN FAITH COMMUNITIES' ENVIRONMENT INSTITUTE

The role of Nuclear in South Africa's energy mix

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Main issues

- Safety and Transparency
- Radioactive Waste Management
- Financial Feasibility and High Capital Costs
- Implication on Electricity pricing
- Public Perception and Participation
- Koeberg Lifetime Extension
- Job Creation and Skills Development
- Alignment with Climate Goals and the Draft IRP 2023

SAFCEI's appeal against Koeberg lifetime extension

The biggest issues with the Koeberg LTO are governance, secrecy and defence in depth.

- The core of SAFCEI's appeal is based upon the **International Atomic Energy Agency's (IAEA) safety inspections of Koeberg**. Ever since 2022, the IAEA has strongly recommended that Koeberg's containment monitoring system be restored to full functionality. In fact, Eskom has admitted to SAFCEI in writing that "**full restoration of the containment monitoring instruments (is) ideal.**"
- There is a critical **safety** component, the containment monitoring system, that Eskom, The National Nuclear Regulator the (NNR) and the IAEA all admit needs to be repaired but hasn't been. And this system could have been repaired years ago.



[Appeal letter to the DMRE](#)

SAFCEI's appeal against Koeberg lifetime extension

- The National Nuclear Regulator (NNR) has exacerbated the situation by stating that the containment monitoring system, which monitors the health of the containment structure, **Koeberg's last line of defence in the case of nuclear meltdown**, should be fixed during Koeberg outages 129 and 229. While no firm date has been set for these outages, they are likely only to be in 2029 and 2030.
- On **6 September 2024**, the IAEA stated that Eskom needs to ensure that "the containment monitoring system is fully refurbished and remains fully functional during the LTO period."
- Lack of transparency by Koeberg, Eskom, and National Nuclear Regulator. Not a meaningful public participation process. People are not aware or have not been able to engage- lack of accessible information.

[Appeal letter to the DMRE](#)

Radioactive Waste Management

Nuclear **power generates long-lived radioactive waste**, which South Africa currently stores at Koeberg.

Expanding nuclear capacity would require enhanced waste management infrastructure, increasing long-term environmental and financial responsibilities.



Financial Feasibility and High Capital Costs

- Nuclear power projects demand substantial upfront investments and have long development timelines. These factors raise concerns about the economic feasibility of expanding nuclear capacity, particularly given South Africa's fiscal constraints and the need for cost-effective energy solutions. Critics argue that the draft IRP 2023 does not commit to a least-cost pathway, opting instead for expensive technologies that could perpetuate energy poverty.

cer.org.za



Implication on Electricity Pricing

- Nuclear energy projects require significant capital investment, which can lead to higher electricity tariffs for consumers. The high costs of financing, construction, and long project timelines mean that nuclear energy may not provide immediate relief to South Africa's electricity crisis. Given Eskom's existing financial struggles and the ongoing issue of load shedding, concerns have been raised that nuclear expansion could further burden consumers with rising electricity costs. In contrast, renewable energy sources such as wind and solar have seen significant cost reductions and shorter deployment times, making them a more affordable option in the short to medium term.

www.greenpeace.org



Public Perception and Participation

- Public scepticism toward nuclear energy persists, influenced by past controversial deals and concerns over safety and environmental impacts. The government's recent decision to delay the procurement process for a new nuclear power station to allow for more consultation underscores the importance of public participation in energy planning.

[reuters.com](https://www.reuters.com)



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Job Creation and Skills Development

- Immediate job creation potential is limited compared to renewable energy projects. This disparity poses challenges for supporting workers transitioning from carbon-intensive industries, such as coal, and may not align with the objectives of a Just Energy Transition (JET).

iol.co.za



Alignment with Climate Goals and the Draft IRP 2023

- The draft IRP 2023 has faced criticism for lacking a strong commitment to reducing greenhouse gas emissions. The plan's support for substantial fossil fuel-based generation and the inclusion of new coal capacity raise questions about its alignment with South Africa's decarbonization objectives and international climate commitments.

[cer.org.za](https://www.cer.org.za)

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Economically, the same.***

The benefits of nuclear power are too few, and the consequences of serious mishap too great, to make it a reliable component of the energy supply the world needs in the decades to come.

National Catholic Reporter, March 2011

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Conclusion

- In conclusion, addressing the crucial safety concerns at Koeberg as well as socio-economic challenges is crucial. Careful consideration of economic viability, job creation, public engagement, and alignment with climate goals is essential to ensure that energy planning and development supports a sustainable and just energy transition.

