equilibrium

Economies
at a glance | October 2025

Powering the future
Inside South Africa's 2025 energy blueprint

The power plot: What is the IRP 2025?

The Integrated Resource Plan (IRP) 2025 is South Africa's national electricity planning document. It was released in October 2025 by the Department of Mineral Resources and Energy. It serves as a roadmap for adding new generation capacity through 2039, focusing on reliability, affordability, sustainability and a shift from coal-dominated power to a more diversified mix of renewables, gas, nuclear and storage.

The IRP's shifting timelines

1 – 2010 – The first IRP (2010–2030)

South Africa's inaugural electricity blueprint, published in 2011, projected rapid demand growth and called for 52GW of new capacity by 2030. It leaned heavily on coal and nuclear, with renewables still on the periphery.

2 – 2013 – IRP update draft

A technical update sought to reflect slower economic growth and lower demand. It scaled back the nuclear build and emphasised renewables, but it was never formally adopted, leaving policy in limbo.

3 – 2016 – Policy-adjusted IRP draft

Released for consultation amid rising load-shedding, this draft was criticised for its continued coal and nuclear bias. It acknowledged cost declines in renewables but it was not finalised before administration changes.

4 – 2018 – Draft IRP 2018

A more pragmatic revision under Minister Jeff Radebe, this draft embraced least-cost modelling, reduced nuclear plans and increased renewables and gas. It aimed to balance affordability, reliability and emissions goals. However, the plan was criticised for its demand forecasts, costing and risk analysis.

5 – 2019 – IRP 2019

Cabinet approved this version as official policy. It charted the energy mix to 2030, targeting c.59GW installed capacity, with more wind, solar and gas and gradual coal decommissioning. Implementation delays soon followed. The plan was criticised for being shaped by political compromises and quickly rendered as outdated.

6 – 2023 – IRP draft 2023

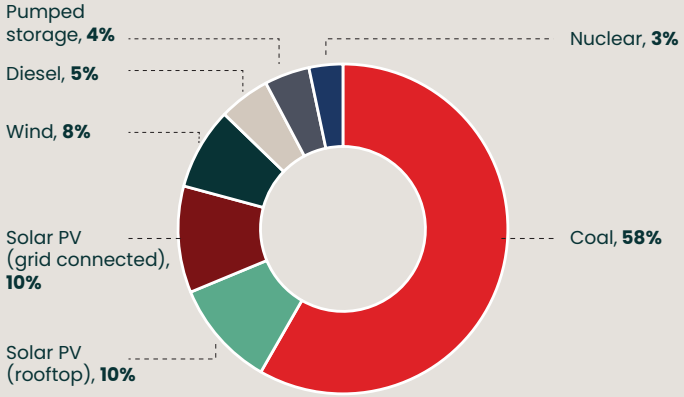
A two-phase approach was proposed: short-term interventions to tackle the power crisis and a long-term pathway to 2050. Critics flagged weak timelines, outdated data and limited reform ambition.

7 – 2025 – IRP 2025

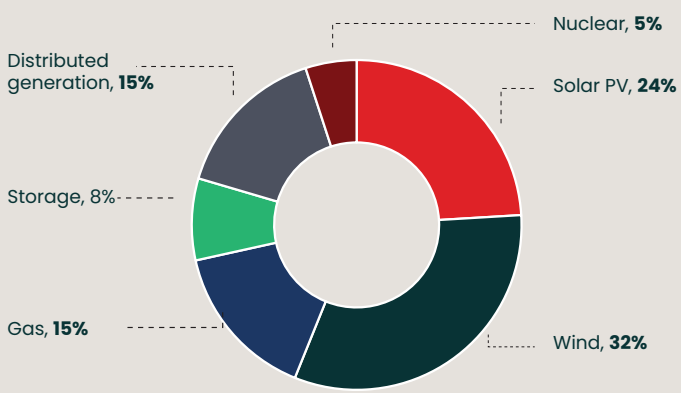
Gazetted in October 2025 as official policy, this version extended planning to 2039, targeting 105GW of new diversified capacity (75GW renewables, 16GW gas, 5–10GW nuclear) costing R2.2 trillion. It plans to accelerate clean energy while retaining coal and supporting a nuclear revival. Critics noted ambitious gas timelines, policy deviations from least-cost modelling and absent pricing clarity as red flags.

The big switch: Powering South Africa's next chapter

Current energy mix
(Installed electricity generation capacity - 2025)



Proposed energy mix
(Proposed electricity generation capacity - 2039)



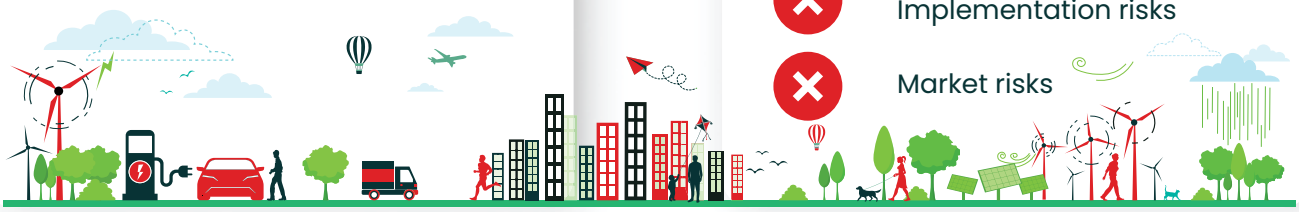
Watts and all: Assessing the latest IRP

Watt's hot

- Catalyst for economic growth and job creation
- Renewables-led green transition
- Diversified energy security
- Investor confidence and regulatory reform
- Social and regional inclusion

Watt's not

- Ambitious timelines
- Infrastructure gaps
- Policy deviations from least-cost path
- Decarbonisation risks
- No clear affordability roadmap
- Implementation risks
- Market risks



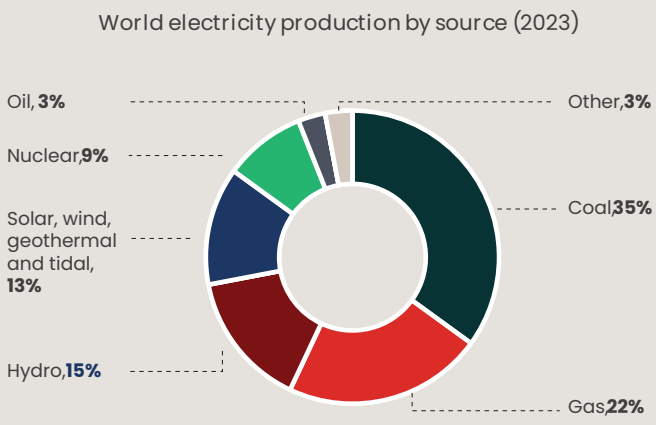
South Africa's nuclear gamble

Globally, nuclear energy is increasingly viewed as a low-carbon, reliable and long-term solution to meet growing electricity demand and climate goals. It provides stable baseload power, often operating for decades with high capacity factors, and contributes significantly to reducing greenhouse gas emissions. A number of countries, including the US, UK, France and China, are expanding or modernising their nuclear fleets to secure energy independence and support sustainable development objectives.

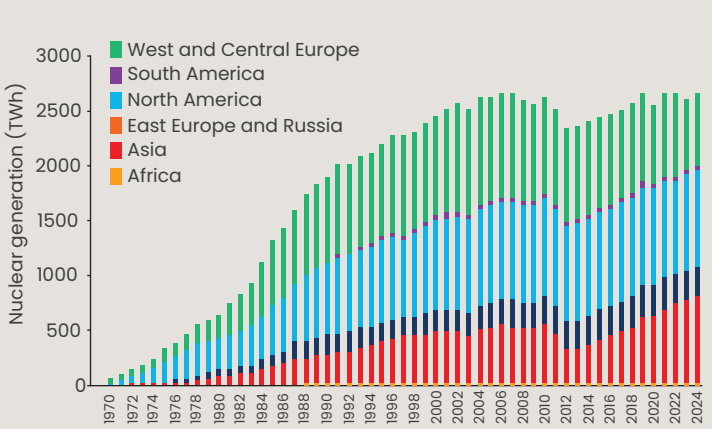
Meanwhile, nuclear adoption remains contentious and politically sensitive in South Africa. Concerned stakeholders highlight that nuclear, while dependable, entails economic, governance and timing risks. Projects are high-cost and slow to deliver, often spanning more than ten years and straining government finances. Procurement opacity from earlier deals, plus unresolved issues around waste, decommissioning and safety, add to the risks. Some argue the same investment could be directed toward renewables, storage and grid upgrades, offering faster and more cost-effective solutions.

Global nuclear trends

World electricity production by source (2023)



Asia is ramping up nuclear electricity production



Sources: Department of Mineral Resources and Energy, World Nuclear Association, International Energy Agency and Momentum Invites