

Experts say new energy plan is ‘wishful thinking’ and lacks ambition

Road map is said to undermine aspirations to grow economy and achieve energy security

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The draft Integrated Resources Plan (IRP) 2023, meant to replace the 2019 version, has been criticised widely for lack of detail and failure to provide viable and affordable solutions to SA's energy crisis.

Experts say that the plan, a road map for energy planning and private and public procurement of new generation capacity, undermines SA's aspirations to grow the

economy and achieve energy security by speeding up investment in new renewable energy.

Anton Eberhard of the Power Futures Lab at the University of Cape Town called the IRP 2023 “an admission of failure” by the government in its efforts to eliminate load-shedding.

The plan, he said, admits SA will face electricity supply gaps for at least the next four years.

According to the IRP 2023, published by the department of mineral resources & energy for public comment last week, SA will continue to suffer electricity supply shortages at least until 2027 without “significant” improvement in performance of Eskom’s coal-fired plants.

Eberhard said the document contains “wishful thinking on improvements in Eskom power station performance, delays in coal decommissioning”, delivering new generation capacity, using “clean” coal technology, nuclear energy, and gas.

In the different scenarios developed for the period up to 2030 and from 2030 to 2050, the IRP 2023 considers the repercussions if Eskom plant performance keeps deteriorating as it has since 2010, with the energy availability factor (EAF) — actual generation performance as a percentage of total installed capacity — falling to 51% by 2030. The plan includes a scenario where EAF improves to 69% by 2030, assuming Eskom successfully implements its generation recovery plan.

Energy analyst Chris Yelland, MD of EE Business Intelligence, pointed out questionable assumptions in the draft plan on the expected rollout of gas-to-power generation capacity, while ignoring lack of gas supply, infrastructure for gas imports and pipelines.

The IRP 2023 suggested generation capacity rollout up to 2030 includes 4,200MW of gas power from the emergency power procurement round. This is the 1,200MW power procured from Karpowership for which the company has now lost the grid connection capacity that was reserved by Eskom for these projects after the budget quotes it had from Eskom expired at the end of 2023.

The rollout also includes power to come from other state-backed independent power procurement rounds for gas-to-power projects.

It is easy to build a gas-fired power station, said Yelland, but the problem is securing gas supply. “Where will the gas come from? Projects to develop local offshore gas supply will not be ready by 2030,” he said.

“It seems we are planning for failure,” Yelland summarised his reaction to the draft IRP 2023.

“Instead of ramping up deployment of new private sector [wind and solar energy, and battery storage], which is entirely possible, the draft IRP 2023’s response to the [electricity supply shortfall] ... is to glibly suggest delaying decommissioning [of old coal-fired power stations] while increasing the [performance of Eskom’s] fleet of the old coal-fired plant, and to deploy new high capacity factor gas-to-power.

“[This is suggested with] no analysis of the realities of [the recent deterioration in performance] of old coal-fired plants, or the costs of high-capacity factor gas-to-power, compared to the alternatives,” he said.

The plan lacks detail to the point where it is “difficult to grasp what the document is putting forward”, said Gaylor Montmasson-Clair, senior economist at the Trade & Industrial Policy Strategies think-tank and lead facilitator for developing a renewable energy master plan.

“To have a meaningful discussion a lot more information needs to be provided particularly for the assumptions, around technology rollout and externality costs [such as carbon pricing], the overall cost trajectory, the compatibility [of the scenarios] with the grid, as well as compliance with SA’s climate change goals and emissions standards.

“We expect a lot more from the IRP process, and we need a lot more to be able to have clarity on the way forward,” he said.

Among aspects he found “puzzling” were the IRP 2023’s low ambition in terms of adding new capacity to the grid by 2030 and its failure to consider the ambition in the renewable energy master plan for industrialisation by establishing a renewable energy value chain.

The plan proposes adding new generation capacity of about 29GW to the grid by 2030, but that is low compared with other studies, including from Eskom, which found SA needs to add 50GMW to 60GW of renewable energy combined with energy storage by 2030 to ensure energy security, said Montmasson-Clair.

“How do you end up with a plan that only makes provision for about half of that? It is hard to understand the number and why it is so low.”

The plan for the period up to 2030 has “gap” years when it foresees no addition of solar or wind generation capacity. It provides for a combined rollout of about 8GW of wind and solar power from 2024 to 2030.

"[SA] has an ambition in terms of the renewable energy master plan to build industrial development and that ambition is based on a continuous rollout of renewable energy of at least 3GW per year," he said.

Eberhard said slow rollout of renewable energy over the next seven years is "one of the disastrous consequences of this IRP".

A key issue not addressed is the affordability and tariff implications of the different scenarios presented, said Happy Khambule, environment & energy manager for Business Unity SA.

As more high-income households "defect" from the grid and switch to rooftop solar and other solutions to make them independent of Eskom, the cross-subsidisation provided by these electricity users for subsidised, low-income users is falling away. This increases the cross-subsidisation burden on large, intensive energy users.

Unaffordable

"If the IRP does not address this we will be stuck in a situation where large, industrial energy users will either remove themselves from the grid or they will say it is becoming unaffordable to do business in SA," Khambule said.

Environmental and social justice groups echoed the call for more detail to be provided by the department on the assumptions and cost implications of the scenarios presented in the plan.

Liz McDaid, strategic lead at the Green Connection, said the document makes proposals "without providing sufficient evidence to back them up".


"There are no detailed costings provided, and it is very difficult to understand the justification for more fossil fuels [to be added to the future energy mix]."


Francesca de Gasparis, the executive director of the Southern African Faith Communities' Environment Institute, said the IRP 2023 "spoke to the lack of the integrated energy plan" that should form part of energy legislation. "We don't see the rationale for some of the proposed energy systems ... we wonder why nuclear keeps on being proposed as part of the energy mix when it has already been costed out in [energy planning] models."

In its post-2030 scenarios, the IRP 2023 considers 14.5GW of new nuclear power and 5GW of new coal capacity using "clean coal technologies".

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