

Eskom's big plan to replace 5 power stations in South Africa



Eskom is set to shut down 23 gigawatts of electricity generated from five coal power stations by 2040, with the embattled SOE planning to ramp up renewable, gas, hydro and nuclear power to make up the lost capacity.

This was revealed in a briefing by Eskom on its Just Energy Transition (JET) plan before the Portfolio Committee on Electricity and Energy this week.

Eskom said its generating mix will transition from predominantly coal to a balanced blend with primary clean energy sources by 2040.

This will help the entity, which is one of the worst polluters and CO2 emitters in South Africa, reduce its overall emissions by 2030.

By 2040, Eskom plans to shut 23GW of capacity from coal-fired power stations, with the Camden, Hendrina, Grootvlei, Arnot and Komati power stations slated for ramping down by FY2030.

To counter this loss of capacity, the SOE plans to increase its current renewable energy framework of 3GW to 32 GW by 2040.

It also wants to increase its capacity generated from gas to 12GW by 2040 and to reach 10GW of nuclear power by the same date.

Despite anxiety around nuclear power, its emissions are negligible compared to coal, making it a much cleaner alternative.

Eskom also hopes to increase its hydropower from 3GW to 5GW in the same timeframe.

If all goes according to plan, there will be ample replacement energy sources as Eskom’s coal capacity drops from the current 39 GW to 18 GW by 2040.

Despite bringing a large amount of coal offline, Eskom’s total capacity would theoretically increase from the current 47GW to 77GW over the period, it said.

The group added that the rollout of renewable energy, including battery storage, will be accomplished through the repowering of older coal-fired power stations and new projects at several other locations.

The coal-fired power stations that will receive new JET-related projects on top of their existing operations are the Kusile, Kendal, Lethabo, Sere and Lephalale stations.

Eskom said that a dedicated Eskom Renewable Unit will be established to ensure the accelerated implementation of projects and it will also partner with the private sector.

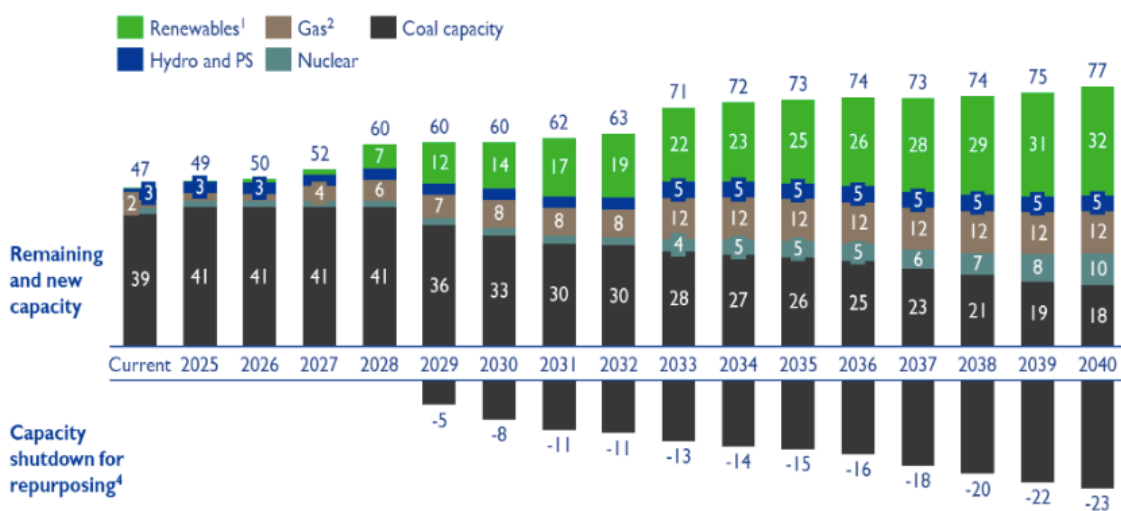
“While we have delayed the shutdown of our power stations, we have allocated funding over the next five years to enable the responsible use of coal,” said Eskom.

“Repowering projects of more than 5GW in capacity are in various stages of development across various sites.”

Eskom will roll out clean energy as it gradually ramps down coal plant

Cumulative GW (calendar years)

Indicative: Includes aspirational and unfunded projects as well as nuclear new build



Learning from mistakes

When it comes to the JET plan, the group said that it has learnt from the troubled repurposing of Komati.

Komati was the first testing ground of the JET project, with the coal-fired power station fully shut down in late 2022.

The site was set to get 150MW of solar, 70MW of wind, and 150MW of battery storage in place of the coal station.

However, by late 2024, not a single MW of that capacity entered construction. The problems of the station have led to coal sympathisers using it as a warning over the shift to new energy sources.

Moreover, the local community suffered severe socio-economic damage due to a lack of activity at the station.

Former Mpumalanga Premier Refilwe Mtshweni said that the people working at Komati had declined from about 1,700 to 174 by June 2023.

Eskom said that it had learnt from the failures at Komati, and several initiatives have been incorporated into other stations' repowering and repurposing initiatives.

Crucially, Eskom noted that Komati funding agreements were only reached after closing the station.

The SOE has thus commenced engagements with various Multilateral Development Banks for front-loading and upfront renewal and replacement funding at Camden, Grootvlei and Hendrina

It also noted that upfront preparatory work is essential in identifying impacts and supporting project design and implementation strategy.

Economic diversification is key for JET to succeed. Outside of the potential construction jobs at the stations, other initiatives are also in the works.

Eskom is thus looking into creating a horticulture centre at Grootvlei, establishing Ash beneficiation centres at the three stations for brick making and road filling, steel manufacturing and other initiatives.

"We have already begun, in close collaboration with the Provincial government, key stakeholder engagements with communities around Grootvlei, engaging on JET opportunities and the impact of station shutdown," said Eskom.

The group will do further consultations at the Hendrina, Camden and Arnot stations.