

Defending the role of coal

South Africa's current draft Integrated Resource Plan (IRP) is too ambitious and attempts to meet the targets will have serious consequences.



Ndavhe Mareda, CEO, Black Royalty Minerals

"A rapid and aggressive transition away from coal will put the entire economy at risk. We need to strike the right balance," says Ndavhe Mareda, CEO of Black Royalty Minerals.

The company is developing Chilwavirusiku Colliery near Bronkhorstspuit, east of Pretoria. "We plan to produce 1Mt of coal every year which we will supply to Eskom for power generation," he told [Mining Review](#) earlier this year.

On the IRP, Mareda says it is important to recognise that coal provides 76% of South Africa's energy at present, and the country is still investing large amounts of money in new coal-generation. In addition, the country has large reserves of coal. It is thus important that the nation gets a proper return on its investment in this technology.

At the same time, the coal industry employs some 82,000 people earning more than R22bn, and it supports economic activity related to its value chain valued at R61bn.

"It is vital that we plan carefully to ensure that new jobs are created to counterbalance those that are lost, and that the economic contribution of the coal value chain is replaced. It is also very important to consider affordability - if electricity is too expensive, it will deter investment and will also impact the poor," he points out.

Renewables are not yet ready

"One also needs to recognise that South Africa currently lacks a significant domestic renewable technology sector, and thus its capacity to provide significant numbers of new jobs is non-existent. In addition, a high reliance on imported technology and skills will reduce the multiplier effect the industry will have on the economy as a whole.

"The truth is that while renewable energy is making huge strides, it is not yet ready to provide the all-important base power that any economy depends on. It is subject to the vagaries of unpredictable weather patterns, which means that energy generation will usually not coincide with energy demand. Energy storage is thus critical but, at present, affordable mass energy storage remains a pipe dream," Mareda says.

The example of Germany is instructive, he says. "While it has been at the forefront of embracing and incorporating renewable energy into the power mix, it has experienced bumps in the road. The rapid transition to renewables led to the cost of electricity for households to almost double between 2000 and 2017. In addition, even though it has a reputation for pioneering renewables, coal continues to provide 40% of its power.

"Another consequence of a badly planned energy transition is that it will discourage investment in coal mining. This in turn would affect not only the industry's ability to keep up supplies to South Africa's own growing fleet of coal-fired power stations, but also to supply coal to Asia's high-growth economies."

New coal technology

At the same time, says Mareda, the environmental consequences of coal must be faced. However, there are emerging technologies that attempt to mitigate many of the downsides. For example, integrated gasification combined cycle (IGCC) and eutectic freeze crystallisation are leading technologies aimed at reducing the use of water, while carbon capture has become standard at many coal power stations globally to reduce emissions.

Again, the example of Germany is instructive: it has failed to meet its emission reduction targets despite its huge investment in renewables because it failed to monitor increases in other sectors, such as transport and manufacturing. Electricity generated by coal is not the only cause of carbon emissions. "To summarise, Germany reduced its dependence on coal by only 10%, and it has a strong domestic renewable energy sector and invested hugely in the transition. Even so, the cost of electricity doubled. This is despite Germany's position as a global leader in the adoption of renewables and committing significant skills and billions of euros to their efforts," he says.

Mareda believes that IRP transition targets are too ambitious, by reducing dependence on coal by approximately 16%, when the country has neither local renewables know-how nor the ability to raise the capital sums needed. "We do need to make the transition, but it must be planned carefully in line with our socio-economic realities and goals. Specifically, we recommend that the current 2030 goals be pushed out to 2050. A gradual transition will give us the chance to realise a return on our investment in coal, build a strong local renewables sector, and manage the impact on the coal industry and the economy as a whole more effectively."