

SAIMM Webinar Abstract

Decarbonizing the mining sector by 2040

The mining industry is among the heaviest generators of greenhouse gases globally. While the goal of the Paris Accord is to achieve carbon neutrality for the planet by 2050, many mining companies, such as Anglo American and Sibanye-Stillwater, have committed to carbon neutrality by 2040.

Decarbonization is often simplistically interpreted as being about renewable energy and the use of fossil fuels, but its far more complex than that. From a mining perspective, decarbonization mines has very specific, and often ostensibly disparate, dimensions to consider. These range from deep-seated social anthropological factors such as social and industrial practices and behaviour to the highly technological solutions to decarbonize energy usage. From a technology perspective it is possible to decarbonize the mining sector by 2040, but there is inevitably a trade-off between economics and the pragmatic application of these interventions. At the other end of the decarbonization spectrum, many of the social interventions are beyond the control or influence of the mining companies, but there is much that can be done.

In South Africa, most of the larger companies have established programmes to implement renewable energy projects, many of which are driven by sheer economic considerations and the high cost of Eskom's energy supply, while at the same time these projects will contribute substantially to the decarbonization of these mines. There are at present 29 mining companies undertaking 89 energy projects totalling 6.5 GW capacity. These comprise 6.2 GW of solar, 0.2 GW of solar, 0.2 GW of biomass energy and 84 MW of battery storage. More recently, Anglo American announced a joint venture with Envusa Energy, who plan to roll out a further 5 GW of renewable energy, bringing the total commitment of the mining industry to the establishment of 12–15 GW of renewable energy utilities. This represents almost 40% of the nameplate Eskom generating capacity of 38 GW.

The total capex required is in excess of between US\$12.5–15.0 billion, or R225–270 billion. Much of this capital will be funded by offshore finance and constitutes substantial FDI. Complementing the renewable energy programmes, many mining companies, such as Anglo American and Exxaro, have coherent circular economy, zero waste to landfill projects and economic diversification strategies directed towards a Just Transition in the sector. Although these projects are established, they are effectively in their infancy and not enough to reach the 2040 targets. The mining sector is only just starting out on this journey and there is much more to do.

Mitigating the impacts of greenhouse gases through structured decarbonization and just transition strategies in the mining sector requires a trans-disciplinary systems-based approach. This must bridge the ostensibly disparate causalities and design integrated functional and economic value chains that serve to eliminate greenhouse gases through related carbon-neutral processes in the mining value chain. The SAIMM ESGS Committee's decarbonization programme outlines the issues to be addressed and describes the architecture of mining decarbonization value chains. The objective of the webinar, held on 14 September 2022, was to create an awareness and understanding of the cardinal issues around decarbonization of mines in South Africa and to start a structured dialogue around these issues within our membership. If you would like a copy of the presentation please contact Nazli Mamdoo at nazli@saimm.co.za.

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