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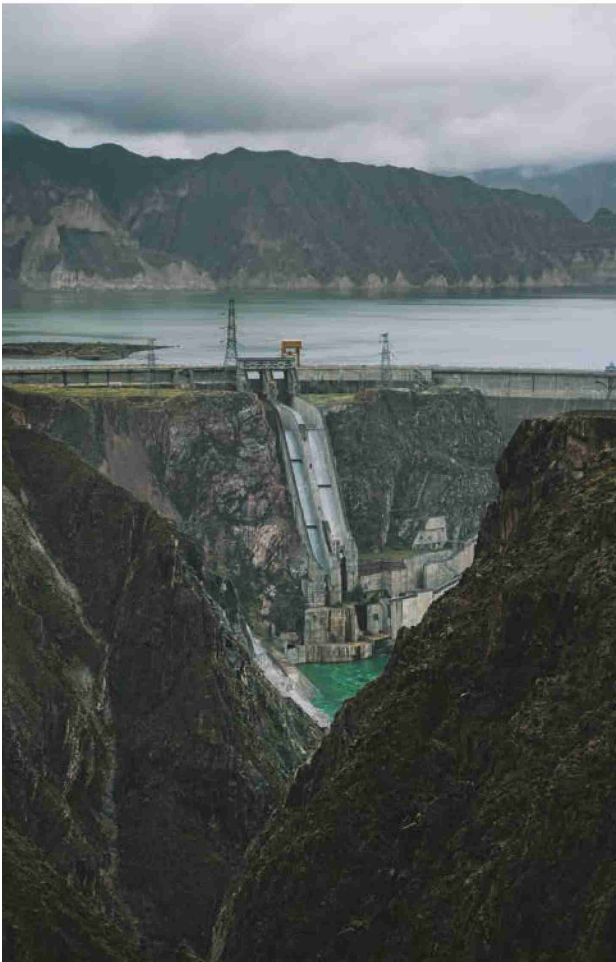
GREEN MINING – CLIMATE RESILIENCE

How can the mining industry transition

In addition to addressing the current structural constraints, the mining industry is grappling with a longer-term transition towards climate resilience. However, by taking a few strategic pivots, Lucas Chaumontet, MD and Partner at Boston Consulting Group's Johannesburg office, believes the industry can gain a competitive advantage while combatting global warming. *By Munesu Shoko.*



Lucas Chaumontet, MD and Partner at Boston Consulting Group's Johannesburg office.



Mines should start considering investment in renewable energy to reduce their emissions footprint.

Due to Africa's socio-economic challenges, climate resilience has often been relegated to second priority. Although the COVID-19 crisis has understandably consumed the attention of mining executives around the world, the industry's need to transition towards climate resilience remains urgent.

The mining sector, responsible for 4 to 7% of greenhouse gas (GHG) emissions globally, continues to face pressure from governments, investors and society to reduce emissions.

To understand how the industry can transform into one that is greener and more competitive, *Modern Mining* recently had a one-on-one with Lucas Chaumontet, MD and Partner at Boston Consulting Group's (BCG) Johannesburg office, who leads BCG's climate work in South Africa. The consulting group is working closely with the National Business Initiative, together with a broad range of stakeholders of more than 20 companies, to define an ideal pathway for South African mines to transition towards climate resilience and be more competitive.

Commenting on why mines should embrace sustainability strategies, Chaumontet says it's a matter of survival, and while building a climate strategy won't be quick or easy, waiting is not an option. "On the one hand, it's absolutely required from a defensive point of view to survive, and on the other, the transition towards climate resilience brings the opportunity to position companies more successfully for the future."

towards climate resilience?

Mining companies are well aware that their licence to operate, or acceptance and permission from communities and society, is one of the biggest risks to their business. A climate strategy, says Chaumontet, is key for the mining sector to secure its social licence to operate.

“There is a massive pushback from investors, governments and communities if a company doesn’t show commitment to addressing climate issues. Banks may also refuse to fund projects if there is no clear climate strategy. It’s therefore important for mining companies to show commitment to transform into greener operations because it speaks to the industry’s short-term licence to operate,” he says.

On the opportunity side, Chaumontet believes that value pools are going to shift. Extensive decarbonisation efforts across industries could create major shifts in commodity demand for the mining industry. The industry will see a decline in certain value pools, especially fossil fuels, whether it’s upstream, mid-stream or retail. While the fossil value pool is going to decline in the long term, there are going to be new valuables that are going to emerge, driven by trends such as renewable power and a hydrogen economy, among others.

“The good thing for the mining industry is that demand for minerals will explode, but there will be less need for oil, gas and coal in the long term. Mining companies need to position themselves for growth of the so-called critical metals as low-carbon technologies, such as wind turbines, solar photovoltaics and electric vehicles, are going to boost demand for the

raw materials needed for these technologies,” says Chaumontet, adding that as the global electrification of industries continues, electric vehicles and batteries will create growth markets for cobalt, lithium and nickel, among others.

Chaumontet says mines should start thinking about different business models for the future or potentially investigate the possibility of entering into the different parts of the value chain – for example, playing a role in renewables or hydrogen, or in other downstream industries such as steel production.

“There is going to be a change in terms of where the money is made in the future and that presents the opportunity to grow. In the face of such global disruption, companies need to think about the risk that climate change poses and be in a position to defend themselves properly. They also need to think about the opportunity to grow and position their entities accordingly. It is imperative for companies to have good structural thinking in these special times,” he says.

But how can the industry transform into one that is greener and more competitive? Chaumontet outlines some key issues for the industry to consider to successfully transition towards climate resilience.

The portfolio

Of significance to mining companies at this stage is to have a hard look at their portfolio, says Chaumontet. According to a recent report by BCG, titled *Mining After COVID-19: The South African Case*, mining companies should begin to ramp up exploration

Given South Africa’s recent announcement of a significant policy shift that opens the market for self-generation, mining companies will soon be able to generate up to 100 MW of power.



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Photo by Reuters/Photography in Ethiopia

Through effective collaboration, the various stakeholders can transform the mining industry into one that is greener and more competitive globally.

for commodities that are expected to be in higher demand because of climate change to better position themselves.

Although deposits might exist, notes the report, significant investment will be necessary to discover them. Companies could also intensify their market development efforts related to the use of platinum group metals in fuel cells (for vehicles and energy storage), which would partially compensate for catalyst system demand losses.

"We know that demand for certain minerals will increase and there will be others that will no longer be needed in the long term. It's important for mining

companies to think about their portfolios now so that they won't be reactive to how the world is changing, but be proactive in delivering the commodities/metals that the world needs," says Chaumontet.

For example, he says, in the next decade or two, the coal market will decline. However, the electrification of global economies will drive the demand for copper, cobalt, lithium and nickel. To provide context, the UK's pledge for almost all cars and vans to be zero emission by 2050 will require nearly two times the total annual cobalt production and at least half of the current global copper production, meaning that the minerals and metals needed to enable a decarbonised global economy are facing a supply crunch.

Linked to the portfolio is the need for collaboration with downstream industries to understand what's shaping the future of the mining industry, he adds. Chaumontet says it's important, for example, for mining companies to start working closely with the automotive industry as it moves from combustion engines to electric vehicles.

The same goes for the steel industry, which is seeking low-carbon materials in its production processes. "If you also think about power, the world is moving into renewables. Again, how can the mining industry provide the right commodities for renewables? All of that requires an understanding of the industry, manufacturing and the energy sector. Downstream collaboration is therefore one big focus area for the mining industry," says Chaumontet.

Improve own operations

Mining companies can also improve their operations in ways that will combat climate change and be economically advantageous, ultimately helping to maintain companies' licence to operate.

To address their scope 1 emissions (those from managed operations, including mines, processing and power) and their scope 2 emissions (those from third-party providers that supply, for example, electricity or steam), the BCG report suggests that mining companies have six main levers at their disposal – energy efficiency, fuel switching, renewable power, green hydrogen, methane capture and carbon capture – and should try to work on several simultaneously.

Mining companies, says Chaumontet, basically have two main sources of emissions: power usage and their equipment. "Power is a big issue in the mining industry. Mines often get their power from the grid (in South Africa, this power is mostly coal generated). In some circumstances, for example, remote mines with no access to the grid generate their own power, often using diesel generators," says Chaumontet.

Given South Africa's recent announcement of a significant policy shift that opens the market for self-generation, mining companies will soon be able to generate up to 100 MW of power, which is

Key takeaways

- ❑ Although the COVID-19 crisis has understandably consumed the attention of mining executives around the world, the industry's need to transition towards climate resilience remains urgent
- ❑ The mining sector, responsible for 4 to 7% of greenhouse gas (GHG) emissions globally, continues to face pressure from governments, investors and society to reduce emissions
- ❑ Mining companies should begin to ramp up exploration for commodities that are expected to be in higher demand because of climate change to better position themselves
- ❑ Mining companies can also improve their operations in ways that will combat climate change and be economically advantageous, ultimately helping to maintain companies' licence to operate

substantially higher than the existing legislated cap of 1 MW. This will remove a significant obstacle to investment in embedded generation projects. It will enable companies to build their own energy facilities to cater to their own needs. Chaumontet believes that this is an opportunity for the mining industry to start considering investment in renewable energy for their own use or engage the services of independent power producers (IPP) for their green energy needs.

The other significant source of emissions at mines is equipment such as trucks and excavators used on mining sites. These by their very nature burn a lot of fuel. Chaumontet believes mining companies need to investigate greener options, whether it's working closely with OEMs to develop electric equipment solutions or substituting current fuels with lower or zero-carbon sources, such as biomass and biofuels.

Chaumontet cites Anglo American's efforts in developing hydrogen-powered mega trucks as a key example of how the mining industry can play an active role in the development of cleaner solutions. In 2019, Anglo American announced its agreement with ENGIE, a leading global energy and energy services company, to develop and fuel the world's largest hydrogen-powered mine haul truck. This ambitious project is part of Anglo American's innovation-led approach to sustainable mining, FutureSmart Mining,

which applies innovative thinking and technological advances to address mining's major sustainability challenges.

Engaging with stakeholders

Implementing measures to address climate challenges will require all stakeholders, including mining companies, regulators and investors, to collaborate diligently. "Mining companies can think of their own portfolio and how they can decarbonise their operations, but engaging with external stakeholders on these activities is equally important," says Chaumontet.

He argues that now more than ever, mining companies need to think in ecosystems and engage much more proactively with external stakeholders. "It starts with communicating to your investors about what you intend to do to be greener and also engaging with the regulator, given that there are a lot of regulations that impact these plans. It's also important to engage with suppliers, including power and equipment suppliers, on your plans as a company and how they can play a role in that," he says.

"Through effective collaboration, the various stakeholders can transform the mining industry into one that is greener and more competitive globally," concludes Chaumontet. ■