RFC Ambrian

Mining Sustainability 1

Caught Between a Rock and a Green Place

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Front picture: Anglo American

Contents

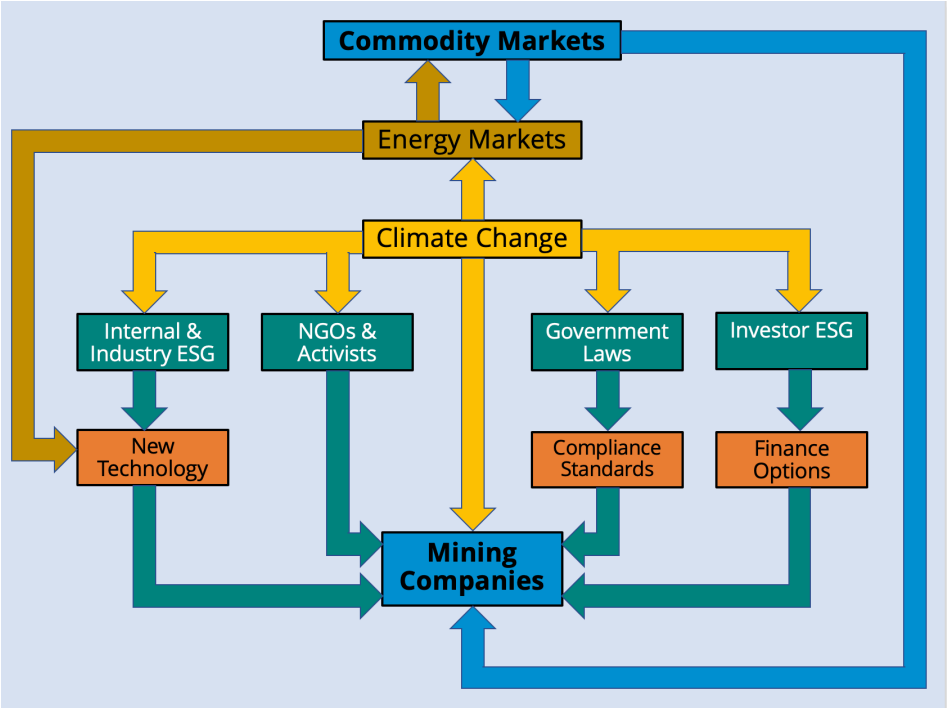
Executive Summary

This is the first report by RFC Ambrian in our series on sustainability in the mining industry. Most of the issues surrounding sustainability are not new and there is a tremendous amount of literature available on all the subjects. However, much of this is either voluminous or presented in superficial sound bites. As a result, we will be examining sustainability in a more concise manner and with a focus on some of the key issues currently impacting mining companies and commodities. In this report, we stand back and consider what is taking place in this space and look at some of the underlying drivers and issues for mining companies.

Sustainable Development

Sustainable development is commonly defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It integrates economic activity with environmental integrity, social concerns, and effective governance. Although COVID-19 is currently an all-consuming event for most people and organisations, sustainability has never before been so much at the forefront of issues facing mining companies. In recent years there has been a rapid rise in the focus on ESG in the mining sector. It has been suggested that we are now in a new 'sustainability age'.

Figure 1: Dynamic Forces Impacting on Today's Mining Companies



Source: RFC Ambrian

A key step in combating climate change is the decarbonising of electricity production. This involves increasing the amount of renewable energy (wind, solar, batteries) and reducing the amount of energy from fossil fuels. Mining has a key role to play in this process.

It is another inconvenient truth that mining, and many commodities, are critically important in the development of existing green technologies and for new innovations to tackle climate change. Decarbonising the global economy requires a sustained demand for metals and minerals going forward. This is increasingly being understood but perhaps not yet fully accepted by society.

The commodities required for decarbonisation of energy are reasonably defined within today's parameters of expected technology out to 2050. The mining industry will provide the raw materials needed for these technologies, but the path will be uneven, driven by the usual cyclicality of supply and demand of commodities. At the same time, the industry must continue to enhance its sustainability and embrace and sustain the pressures from ESG and climate change.

In recent years, mining companies have risen to the challenge of ESG issues and climate change and many have adopted the UN's set of 17 Sustainable Development Goals (SDGs) as a basis of their strategy. For mining companies, the key takeaways of these SDGs are to extract responsibly, waste less, use safer processes, incorporate new sustainable technologies, promote the improved wellbeing of local communities, curb emissions, and improve environmental stewardship.

However, overall progress in decarbonisation currently falls significantly short of what is needed to meet Paris Agreement targets, according to a UN progress report[(1)]. Furthermore, at least two significant ESG and climate change monitoring organisations report that despite some significant announcements, the mining and metals sector is underperforming against most key assessment indicators.

1.0 The Sustainability Age

We are all currently experiencing the impacts of the coronavirus pandemic, a crisis unlike any other in recent times. This will remain at the forefront of mining executives concerns for some time, but we expect this to eventually pass. Post these events, we expect mining sustainability to return to be a key issue facing mining companies. At the latest Indaba gathering in Cape Town, South Africa we noticed that ESG now seems to be an integral part of every presentation and meeting. Jean-Sébastien Jacques, CEO of Rio Tinto, recently noted that we are now in a new 'sustainability age'.

With ESG issues increasingly in the spotlight, the interest has been compounded by the growing pressures from climate change. Climate change is not just drawing additional attention to ESG issues and carbon footprints, it also has the potential to impact on the real physical and climatic environment in which companies operate.

Meanwhile, climate change is leading to the decarbonisation of energy which is changing the demand for certain commodities and forcing many companies to think about their commodity portfolios. The demand for a number of 'green' commodities, such as lithium, rare earths and copper are forecast to rise strongly, while in recent years we have seen companies dispose of or reduce exposure to coal.

It now appears that the future of the mining industry will be driven by how it handles and adapts to the pressures of sustainability. In October 2019, in a speech at LME week, the CEO of Rio Tinto, Jean-Sébastien Jacques, stated that sustainability, partnerships and data, will underpin everything that it does, and it will need to be strong, proactive and disciplined to win. The time for change is now, and the ability to manage sustainability will define success in the mining industry in the decade ahead.

Most of the issues surrounding sustainability are not new and there is a tremendous amount of literature available on all the subjects. However, much of this is either voluminous or presented in superficial sound bites. As a result, this is the first report by RFC Ambrian examining sustainability in a more concise manner and with focus on some of the key issues currently impacting mining companies and commodities.

Sustainability, ESG and Climate Change

Sustainable development has been defined in many ways, but the most frequently quoted definition is from Our Common Future, also known as the United Nations 1987 Brundtland Report: 'Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. It integrates economic activity with environmental integrity, social concerns, and effective governance systems.

Mining and sustainability are typically regarded as a contradiction of terms because of the issues arising from the potential adverse impacts on the environment and communities and because of the extraction of a finite resource. However, mining is essential for the production of so many goods and can produces economic benefits and should be done responsibly. This can be of particularly benefit in low- and middle-income countries whose economies rely heavily on natural resources.

The World Bank[2] states that the dynamic between these opposing positions has been predominated by polarisation and characterisations that have turned out to be self-defeating, particularly when it comes to developing coherent climate and sustainable development policies that are effectively aligned with a given country's development plans.

At the same time, shareholders and Investors are also changing their attitudes toward sustainability. Asset managers are becoming more active on ESG matters, and many now have ESG-related criteria that must be cleared before investments are made. This shift is spurring political pressure, a regulatory push, and technological advancements to create the foundations of a more sustainable world. In turn, these developments are leading to a change in investor behaviour and setting in motion a major yet gradual capital reallocation.

Some of the Issues

Mining is key to almost every aspect of our lives but must be carried out in a responsible manner. At the same time, society needs to be mindful of the broader balance of benefits relative to the potential impacts. Finding this balance is difficult.

It is the concept of sustainable development that is part of the answer and its central idea is that any human activity, including mining, should be undertaken in such a way that provides a net positive contribution to people and the environment. This means that mining companies must continue to press forward and improve all aspects of ESG and climate change within their operations.

At the same time minerals and metals can contribute to sustainable development. It is another inconvenient truth that mining, and many commodities, are critically important in the development of existing green technologies and for new innovations to tackle climate change. Decarbonising the global economy requires a sustained demand for metals and minerals going forward. This is increasingly being understood but perhaps not yet fully accepted by society.

According to McKinsey research[3], mining is currently responsible for 4-7% of greenhouse-gas (GHG) emissions globally. Scope 1 and Scope 2 CO_2 emissions from the sector (those incurred through mining operations and power consumption, respectively) amount to 1%, and fugitive-methane emissions from coal mining are estimated at 3-6%. Emission estimates are based on research by McKinsey's Basic Materials Institute. The range of fugitive-methane emissions is a function of the time horizon at which the warming impact of methane is calculated. The lower number refers to global-warming potential on a 100-year time frame (GWP100), and the higher number refers to global-warming potential on a 20-year time frame (GWP20).

The commodities required for decarbonisation of energy are reasonably defined within today's parameters of expected technology out to 2050. The mining industry will provide the raw materials needed for these technologies, but the path will be uneven, driven by the usual cyclicality of supply and demand of commodities. At the same time, the industry must continue to enhance its sustainability and embrace and sustain the pressures from ESG and climate change.

2.0 Rising to the ESG Challenge

In recent years, mining companies have risen to the challenge of ESG issues and climate change and many have adopted the UN's set of 17 Sustainable Development Goals (SDGs) as a basis of their strategy. For mining companies, the key takeaways of these SDGs are to extract responsibly, waste less, use safer processes, incorporate new sustainable technologies, promote the improved wellbeing of local communities, curb emissions, and improve environmental stewardship[4].

The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 SDGs, which are an urgent call for action by all countries (developed and developing) in a global partnership. They recognise that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth, all while tackling climate change and working to preserve our oceans and forests. The SDGs build on decades of work by countries and the UN, including the UN Department of Economic and Social Affairs.

Figure 2: UN Sustainable Development Goals

Source: United Nations

The US-based Columbia Center of Sustainable Investment[5] states that mining companies committed to the SDGs will benefit from improved relationships with governments and communities, as well as better access to financial resources. Those that fail to engage meaningfully will put their operations at risk in the short and long term.

Another important organisation in supporting the mining industry's ESG need has been the International Council on Mining & Metals (ICMM)[6]. The ICMM has developed a range of good practice guides to support the sustainable development of the industry. ICMM is an international organisation dedicated to a safe, fair and sustainable mining and metals industry. It has 27 companies and over 30 regional and commodities associations. It supports mining with principles to sustainably manage the natural resources of our planet and enhance the wellbeing of local communities.

3.0 Addressing the Climate Change Issues

In the past few years, an increasing number of mining companies have released climate change reports or strategy outlines. These specify goals and performance; assesses key climate-related risks and opportunities; and consider the potential implications for climate change-related scenarios. However, this aspect of sustainability still appears to be at an early stage of implementation.

The strategies are generally centred around the 2015 Paris Agreement, where 195 countries pledged to limit global warming to well below 2.0°C, and ideally not more than 1.5°C above pre-industrial levels. Limiting climate change will require a significant reduction in greenhouse-gas emissions between 2010 and 2050. A 41-72% decrease in emissions is required for a 2.0°C scenario and a 78-89% percent decrease for a 1.5°C scenario, according to data from the Intergovernmental Panel on Climate Change (IPCC). This industry target range does not include Scope 3 emissions.

UN recommendations for companies

In June 2017, The Task Force on Climate-related Financial Disclosures released its final recommendations[7], which provide a framework for companies and other organisations to develop more effective climate-related financial disclosures through their existing reporting processes. It noted that many companies incorrectly view the implications of climate change to be relevant only in the long term and, therefore, not necessarily relevant to decisions made today. Those views, however, have begun to change.

This is in part due to the UN Sustainable Development Goal 13 (SDG13) progress report for 2019[1] which stated that with rising greenhouse gas emissions, climate change is occurring at rates much faster than anticipated and its effects are clearly felt worldwide. It concluded that while there are positive steps in terms of the climate finance flows and the development of nationally determined contributions, far more ambitious plans and accelerated action are needed on mitigation and adaptation.

In its attempt to improve corporate initiatives, it pointed out that now more than ever it is critical for companies to consider the impact of climate change and associated mitigation and adaptation efforts on their strategies and operations and disclose related material information. Companies that invest in activities that may not be viable in the longer term may be less resilient to risks related to climate change; and their investors may experience lower financial returns.

The mining industry has only just begun to set its own emission-reduction goals. According to McKinsey [3], current targets published by mining companies range from 0-30% by 2030, far below the Paris Agreement goals. Mines theoretically can fully decarbonise through operational efficiency, electrification, and renewable-energy use. Nevertheless, this requires significant capital investment to achieve most of the decarbonisation potential as it does for most industries. For many mines though, certain measures, such as the adoption of renewables, electrification, and operational efficiency, are already economic propositions today.

Recent Industry Moves on Climate Change

In July last year, the former CEO of BHP, Andrew Mackenzie gave a speech in London about climate change[8] and announced a US$400m Climate Investment Program to reduce emissions (scope 1-3) at BHP. He stated that mining companies today face two inescapable truths. First, that the climate is changing and, second, that mining activities and the use of mining products are contributing to that change. These are truths that cannot, and must not, be avoided.

However, he also noted that there is a third truth: that mining operations have also made the world a better place. No one should ever forget that at the heart of resource utilisation lies the aspiration of people to improve their lives. We don't burn coal or gas simply to use energy. We don't make steel to have stockpiles. We do these things because we want the benefits that flow from their use: heat, light, mobility, materials and trade.

The issue for the industry is that it must address the challenges that come with the benefits. He pointed out that the world's dependence on fossil fuels carries risks that could be existential and that the global response does not yet match the severity of the threat. In part because of the outright complexity of the problem.

In February 2020, Rio Tinto announced plans to invest around US$1.0 bn over the next five years to support the delivery of its new climate change targets and a company objective for net zero emissions from operations by 2050[9].

Jean-Sébastien Jacques, CEO of Rio Tinto, noted that the ambition is clear, but the pathway is not and the challenge for the world, and for the resources industry, is to continue the focus on poverty reduction and wealth creation, while delivering climate action. This will require complex trade-offs which means we all need to face up to some challenging decisions and have an honest conversation.

For 2030, Rio Tinto has set targets of (1) a further 30% reduction in the company's emissions intensity from 2018 levels and (2) a further 15% reduction in its absolute emissions from 2018 levels. Under these targets, Rio Tinto's overall growth between now and 2030 will be carbon neutral.

In February 2020, Teck Resources announced an objective to be carbon neutral across all operations and activities by 2050. Teck has set out an initial roadmap to achieve carbon neutrality by first avoiding emissions and then eliminating or minimising emissions. This will include looking at alternative ways of moving materials at its mines, using cleaner power sources, and implementing efficiency improvements, among other measures.

Glencore has reported that it is developing new, long-term climate change targets, based on policy and technological developments that support the Paris Goals, and intend to make these public in its 2020 annual report.

As companies release their annual reports this year, we expect to see more climate change targets announced.

Climate Change Advice

To respond to the impact of climate change, McKinsey recently reported that mining executives should take five main actions[3]:

- Perform an end-to-end diagnostic of climate change's effects on the business to know which assets to protect from physical climate change and which stand to gain or lose from decarbonisation.
- The risks and the opportunities of climate change should be considered a board-level topic, and ambitious climate targets that come from the top.
- Focus on operational transformation, investments, and innovation.
- Evaluate and potentially reshape your portfolio. The ability to move relatively quickly in or out of niche materials will become valuable.
- Continue to engage through reporting, partnerships, and other proactive measures.

We also believe that the allocation of capital, management, and resources to execute and achieve these strategies is important. The goals need to be achievable, measurable and economic on a risk adjusted basis.

Industry Scorecard Still Disappointing

The Responsible Mining Index 2020 report is an evidence-based assessment of the economic, environmental, social and governance (EESG) policies and practices of 38 large-scale mining companies that operate in more than 780 mine sites and together account for 28% of the world's mining activity by value of production[10]. In addition, the report assesses 180 individual mine sites in 45 countries against 10 basic indicators of responsible mining. The one-year study consists of a deep-dive into each company, with approximately two months spent reviewing and assessing each company.

It reported that the performances of even the best-scoring companies fall considerably short of society expectations in all six thematic areas (economic development, business conduct, lifecycle management, community wellbeing, working conditions, and environmental responsibility).

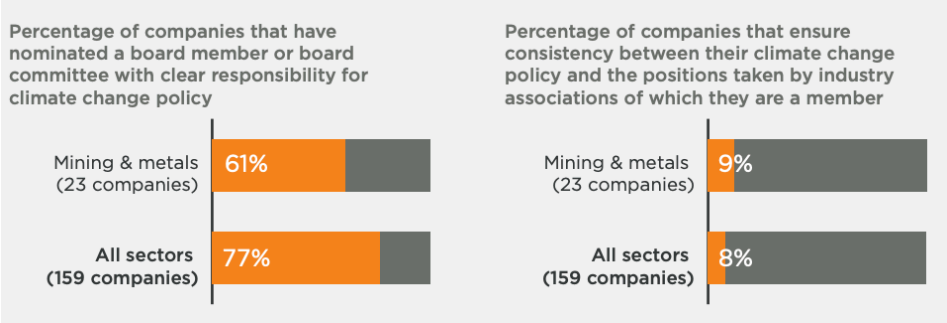
It states that stronger efforts are required by all companies to ensure their practices are managed effectively, in light of society expectations and the SDGs. The report further states that since the RMI Report 2018, more companies have made and disclosed formal commitments on some economic, environmental, social and governance (EESG) issues. A few companies have developed new or stronger management standards. Yet many companies show little sign of movement and much needs to be done to translate corporate commitments and standards into successful business practices.

Most companies are still not able to demonstrate that they track and publicly report on how effectively they are managing EESG issues. Even fewer companies show

evidence of reviewing their performance and taking responsive actions where necessary.

Meanwhile, Climate Action 100+[11], an investor-based action group, reports that despite some significant announcements, the mining and metals sector is underperforming against most key assessment indicators. On climate governance, this sector is the weakest of all sectors in setting board responsibility for climate change (61%), despite nearly all of the companies (91%) maintaining memberships in industry associations that engage in lobbying against climate policy.

Figure 3: Mining and Metals Sector Climate Governance Indicators



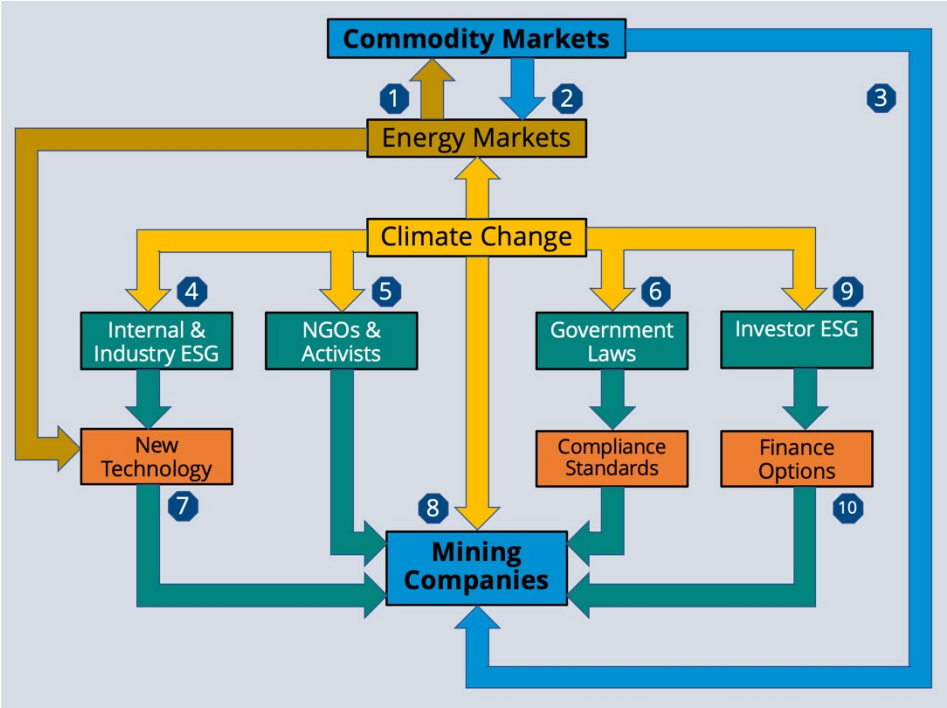
Source: Climate Action 100+, TPI – August 2019

Furthermore, the mining industry performs comparatively poorly on climate action: only half (52%) of focus companies have set emissions reduction targets, the lowest level of all sectors analysed. Also, as at the time of the report, no company in the mining sector had set or committed to set a science-based target (SBT). An SBT provides companies with a clearly defined pathway to future-proof growth by specifying how much and how quickly they need to reduce their greenhouse gas emissions.

4.0 Identifying the Pressure Points

We have put together a flow diagram that attempts to capture the key dynamic forces related to sustainability in the mining industry with a focus on those areas that are currently the attention of the industry, commodities, and financial markets.

Figure 4: Dynamic Forces and Sustainability Questions



Source: RFC Ambrian

We are going to use this diagram as a template to highlight some of the important issues that are being raised in the industry at this moment in time. We will be presenting this in following reports with the aim of addressing some key questions:

1. How is the decarbonisation re-shaping the demand for commodities?
2. Will commodity supply issues affect the pace of decarbonisation?
3. How are mining companies re-shaping their commodity portfolios?
4. How is the industry itself responding to ESG challenges?
5. What impact are NGOs and activists having?
6. How are new laws and regulations impacting the industry?
7. How are mining companies reducing their own carbon footprints?
8. How might climate change impact existing mining assets?
9. What is happening with ESG funds and ESG scorecards?
10. Are companies achieving the new hurdles set by shareholders and investors?

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