



TREND 3

ESG: Getting serious about decarbonization

FROM STRATEGY TO EXECUTION

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AMID GROWING DEMANDS to reduce their climate impacts, mining companies have begun to explore how to move beyond risk identification and mitigation to execute on their decarbonization agendas. This is a critical area as companies work to meet the environmental mandates associated with their environmental, social, and governance (ESG) commitments as well as win back the trust of investors. Here we outline several practices miners can use to think through the context in which decarbonization might make sense for their organizations so that they can clearly visualize their risks, optimize their strategies, and realize their opportunities.

Driven by external pressure to reduce greenhouse gas emissions and a strengthening business case for diesel replacement and electrification, many mining companies have been making strides toward decarbonization. In Chile, for instance, BHP, Anglo American, and Antofagasta Minerals have all announced plans to power local operations from entirely renewable resources.¹ For its part, Vale has committed to achieving 100% self-production from renewable sources by 2025 in Brazil, and by 2030 globally.²

With renewable energy approaching price parity (at least for some renewables), the cost of taking action is also decreasing. While the costs of transitioning must also be taken into account, operationally it is now much cheaper to replace fossil fuels with renewables and, in many cases, attain significant economic benefits.

However, eliminating outputs, or even transitioning to a lower carbon footprint, is easier said than done. With each passing year, pension funds, institutional

investors, and the ESG investment community demand more specifics about how companies plan to move from strategy to execution.

Demands for action mount

Providing these specifics has become paramount amid a mounting demand for action. Beyond conducting climate-related stress testing, some banks are divesting holdings or refusing to invest further in companies that fail to meet their ESG commitments.³

Asset manager BlackRock announced its divestment of certain thermal coal securities from its discretionary active investment portfolios in early 2020, stating in a letter to its clients: “With the acceleration of the global energy transition, we do not believe that the long-term economic or investment rationale justifies continued investment in this sector.”⁴ Members of the Net-Zero Asset Owner Alliance, representing US\$4 trillion in assets under management, have committed to transitioning their investment portfolios to net-zero emissions by 2050.⁵ Already, we have seen several pension funds advising their portfolio companies to adopt net-zero plans as a condition of remaining on the share registry.

“Mining companies should recognize that there is a correlation between stakeholder sentiment and company valuation,” says Henry Stoch, partner, Risk Advisory and National Sustainability and Climate Change leader, Deloitte Canada.

“Companies that fail to commit to a decarbonization agenda could find their share prices affected, which strengthens the case for decarbonization.”

Governments are getting into the act as well. In Canada, for instance, companies that could not demonstrate adherence to their obligations under the Taskforce on Climate-related Financial Disclosures (TCFD) were not eligible to receive COVID-19 relief funds.⁶

In light of these realities, many companies are adopting a range of leading practices as they move from decarbonization commitments to action, balancing short-term economic factors with long-term environmental impact. While some of the approaches explored here are still nascent, they represent a set of practices adopted by many firms in the industry and in adjacent sectors. These should help enable miners to think through the context in which decarbonization might work for their organizations.

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Practice 1: Stakeholder response scenarios

The mining industry is familiar with the potential for community grievances to spill over into unrest, and that's particularly true for matters related to ESG. As a result, many industry players are already preparing for potential litigation. In an increasingly divisive geopolitical environment, the risk of climate terrorism is also on the rise, opening the door to attacks, both physical and cyber.

Conversely, as companies consider abatement options, they can design in cobenefits for the communities in which they operate in order to lower emissions and build community support. For example, as companies establish carbon trading and offsetting strategies, including local nature-based solutions with the ecosystem and other local benefits, they could deliver good outcomes for all stakeholders.

To understand how different stakeholder groups might react if companies continue contributing to climate change or, alternatively, lower their emissions to deliver community benefits, Deloitte modeled various possible scenarios, ranging from moderate to extreme, over a 10-year timeline. For instance, could employees refuse to work for a company due to its weak environmental record?

Could a company be sued for billions of dollars for contributing to climate change? How are core investor groups likely to react?

This is just one element in the effort to gain a comprehensive understanding of what the future of energy means from an organizational perspective. As companies attempt to execute against their decarbonization agendas, they should assess a wider range of physical and transition risks, taking regulatory, market, and

stakeholder considerations into account to determine the climate risks that may affect all their operations.

Although there are various steps along this path, the process typically begins by aggregating current emissions data, creating realistic forecasts, and examining various abatement scenarios to pinpoint those that can enable companies to achieve their emissions targets and build strategic competitive advantage (see case study).

CASE STUDY

Moving to net-zero

After committing to a net-zero target in line with the 2015 Paris Agreement, a global resources company needed to evaluate a range of abatement pathway options to identify the costs associated with achieving this target. Through a series of in-person and remote workshops, the Deloitte project team:

- Analyzed the company's current and forecasted emissions data.
- Helped identify, quantify, and articulate potential abatement pathways for achieving and maintaining net-zero operations.
- Modeled the potential value, costs, timing, and technologies associated with various abatement solutions and how they interacted with the forecast demand for lower carbon commodities.
- Developed robust options for interim targets.
- Reviewed carbon offset pricing forecasts, which allowed the company to assess its medium- to long-term decarbonization options.
- Assessed and reported on emissions impacts, abatement partnerships, and procurement options.
- Analyzed how the company's valuation might be affected by potential stakeholder reactions, and estimated the cost of those capital impacts over the next decade.
- Explored options to integrate emissions data into the company's enterprise resource planning (ERP) system to enable fully informed decision-making.

This work generated a collection of papers that provided the executive team and board with guidance on global strategy, laying out the activities the company should consider as they transition to a low-carbon economy. As a result, an internal fund was established to help accelerate the deployment of abatement projects.

Practice 2: Deep-dive emissions plans

Although an important first step on the decarbonization journey involves setting a global plan and priorities, companies cannot achieve their objectives unless they understand the specific actions they're required to take at the site level. This speaks to the need to develop deep-dive emissions plans for specific assets and mine sites. Among the various considerations, three components to focus on include:

- **Site power.** As companies tackle the logistics involved in accessing electricity as and when it's required, they should consider a range of options. In some cases, for instance, it will make

sense to enter power purchase agreements (PPAs) to acquire power through the grid. In other cases, they may choose to underwrite renewable development. Understanding the pros and cons of each course of action can be essential before proceeding. In a recent example, BHP entered new renewable energy contracts for its Escondida and Spence copper mines in Chile that allowed the company to reduce energy prices by 20% and displace 3 million tons of CO₂ emissions from the current coal-fired supply.⁷ The company also signed a renewable PPA that will allow it to use low-emission energy sources to meet half of its electricity needs in its Australian, Queensland coal mine, a move that should see the company reduce its related emissions by 50% by 2025.⁸

- **Material movement electrification.** Once a company decides to replace diesel across its mining operations, it will need to think through alternative approaches, such as whether to transition to hydrogen or electric vehicles, what trolley-assist options exist, the availability of stationary power generation, and options for in-pit crushing and conveying. For Anglo American, this decision-making process saw the company partner with ENGIE to develop and fuel the world's largest hydrogen-powered mine haul truck, which it expects to roll out at its Mogalakwena platinum mine in South Africa.⁹
- **Processing.** When it comes to processing operations, machinery and vehicle electrification is only one element companies must consider. They should also implement any required process changes and seek to optimize their operational emissions through abatement projects, policy analysis, and portfolio assessment. This is an approach Rio Tinto is pursuing as part of its joint venture with Alcoa Corporation to eliminate carbon from the aluminum smelting process.¹⁰

“Regardless of the choice they make, miners should undertake an in-depth review of how these activities might impact worker safety and productivity,” says John O’Brien, partner, Financial Advisory, Deloitte Australia. “This, in turn, should be balanced against appropriate capital planning to develop the optimum project mix.”

Practice 3: ERP integration

Given the compounding impacts of climate change across the enterprise, there is a growing need to seamlessly integrate emissions data with a company's operational and financial data. In addition to positioning companies to make more informed capital project decisions, access to

real-time data is essential if miners hope to understand the trade-offs they must make between emissions reduction, financial resources, and productivity.

Many ERP providers are already taking steps to turn this vision into reality. In early 2020, SAP undertook an initiative to understand how SAP S/4HANA and other SAP applications could help companies manage their carbon footprints. This review led to the establishment of the Climate 21 program, which aims to help companies track product-related emissions data and optimize their carbon transactions across both their supply chains and asset base.¹¹ In a similar move, Salesforce introduced the Salesforce Sustainability Cloud, which is designed to help users quantify their carbon footprint and take steps to reduce emissions by tracking, analyzing, and reporting on their environmental data.¹²

While it is still in its early days, the integration of emissions data into ERP systems promises to drive more informed decision-making, shed light on the strategic impact of various climate-related programs, and enable real-time assessment of the trade-offs between emissions, productivity, and finance.

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Practice 4: Scope 3 emissions

Greenhouse gas emissions are typically classified into three groups, or “scopes.” Scope 1 emissions are those that companies emit directly from owned

or controlled sources. Scope 2 emissions are indirectly emitted through the generation of purchased energy. Scope 3 emissions are indirectly emitted across a company's value chain.¹³

Companies at the early stages of their decarbonization initiatives will typically focus on measures to reduce their scope 1 and scope 2 emissions. Now, however, companies are increasingly expected to work with their customers, suppliers, and other value chain partners to reduce their scope 3 emissions. Many organizations have begun to see the reduction of scope 1 and scope 2 emissions as the minimum and are making the reduction of scope 3 emissions their focus.

This appears to be reflected in growing industry participation in associations such as the:

- Australian Climate Leaders Coalition, a group of cross-sectoral Australian CEOs who are setting public decarbonization targets;¹⁴
- Japan Climate Leaders' Partnership, a coalition of Japanese companies that believes economic prosperity and sustainability go hand-in-hand;¹⁵
- New Zealand Climate Leaders Coalition, which is focused on helping the transition to a low emissions economy;¹⁶
- European Corporate Leaders Groups, which bring together business leaders committed to supporting the transformation to a net-zero economy;¹⁷ and
- We Mean Business coalition, which is driving US policy ambition to accelerate the zero-carbon transition.¹⁸

Although each company must assess its strategic approach relative to scope 3 emissions, those choosing to play a part in addressing these emissions are now considering use cases that would

allow them to aggregate emissions data and build partnerships across their extended value chains.

As an example, Rio Tinto and Baowu Steel signed a memorandum of understanding (MOU) to develop a hydrogen substitute as a way to lower emissions across the steel supply chain. The hydrogen would be used as a reductant in the steelmaking process to replace coking coal—a move that could potentially address the challenge of scope 3 emissions.¹⁹

Practice 5: Enhancing disclosures by improving traceability

Although early demands for provenance were likely sparked by the need to eliminate conflict minerals from supply chains, social expectations around ethical sourcing have burgeoned. With each passing year, a growing number of automotive manufacturers, technology companies, and global retailers are paying rigorous attention to the origin of the metals and minerals they source and sell—putting mining companies under greater pressure not only to improve product traceability but also to disclose the carbon footprint associated with the minerals they process.

“Beyond helping companies validate the source of specific commodities across the supply chain, blockchain technology can track the end-to-end carbon footprint involved in producing any particular ton of ore,” says John O'Brien. “This could be critical as mining companies aim to certify both the ethical sourcing and carbon neutrality of their products.”

As companies move from strategy to execution on decarbonization, they have the opportunity to create more resilient organization. By developing a clear road map and plan of action to meet their commitments to the market, they not only de-risk their organizations; they also lay the foundation for winning back the trust of the investment community.

The path toward decarbonization

- **Understand the impacts.** Before they can effectively decarbonize, organizations should seek to understand the impacts of climate change on both societies and their operations. Predictive analytics can help. Using historical data, companies can assess their current baseline and set targets accordingly, with the aim of proactively recognizing likely emissions generated from assets over their life cycle. Armed with this information, it can become easier to harmonize decarbonization efforts in primary operations, re-examine asset portfolios to identify opportunities for carbon reduction, and determine which technologies to invest in.
- **Consider multiple abatement pathway scenarios.** By leveraging scientific information from leading bodies and methodologies—including the Intergovernmental Panel on Climate Change (IPCC), Representative Concentration Pathways (RCPs), the International Institute for Applied Systems Analysis (IIASA), Shared Socioeconomic Pathways (SSPs), and the Science-Based Target (SBT) methodologies—companies can begin to compare the forecast emissions reductions associated with their proposed abatement projects. This can position them to assess the viability of a range of decarbonization initiatives, such as low carbon transition strategies, including target setting (e.g., net-zero emissions trajectories, science-based targets, least cost pathways); renewable energy procurement advisory and support, including PPA strategy; and renewable technology and policy scenario analysis, forecasting, and budgeting (financial and carbon use).
- **Optimize operations.** As companies move from strategy to execution, they should make operational adjustments to support their decarbonization agendas. This includes identifying innovative new technology to help drive energy savings; improving their sustainability reporting, assurance, governance, and compliance; taking advantage of tax credits to drive cleaner technology; and collaborating with other energy, resources, and industrial companies to build out cross-sector solutions.

ENDNOTES

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