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Tracking the trends 2022

Redefining mining

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Introduction

Redefining mining

What will successful mining and metals companies look like in a low-carbon, low-waste, purpose-driven future?

The beauty of this question is that there is no definitive answer. While the core objective of the mining industry remains unchanged going forward: to extract and provide metals and minerals to downstream sectors, many of the factors that have influenced how mining companies should look, feel, and act in the past, have shifted in recent years.

The way in which companies fulfil this mission is now open to interpretation. And today, there is a rare opportunity for leaders to reorganize, generate new value, and forge partnerships to create a more responsible and attractive future for the industry.

While some early movers saw the need for change coming 10, 15, even 20 years ago and have been redefining their organizations and operations accordingly, for many firms, the necessity for fundamental change only really hit home in 2020-21. The convergence of factors including the ongoing effects of the COVID-19 pandemic on the world of work, continued drive towards digitization, the growing need to integrate ESG commitments with central business functions, and the need to pivot in response to fast-moving business and operating environments, has opened many choices for companies.

Of course, the biggest underlying driver and opportunity for transformation lies in the green energy transition. The 2021 United Nations Climate Change Conference (COP26) held in Glasgow in November, highlighted the mining industry's integral role in supplying the metals and materials critical for a low-carbon future¹. The way in which mining companies position themselves today in preparation for this change, will determine their sustainability, and could make or break their competitive advantage over the next decade.

Change on this scale is undoubtably daunting, which is why in this, its 14th year, Tracking the trends has focused on effecting transformation. The following 10 trends provide a toolkit to help mining companies start thinking through, and moving towards, their vision of future success.

In them, our global team of experts share insights and case studies designed to get ideas flowing. We explore how to evolve traditional mining and metals businesses through new business models, capital allocation, agile work practices, and data-driven technologies to create organizations fit for the 21st century; ones that can not only survive but profit from whatever the future might throw at them and leave a positive social impact in their wake.

The next decade will be one of the most exciting and transformative in the mining industry's history. We look forward to discussing the trends with you and supporting your company on its journey. Thank you for your ongoing support.

Endnote:

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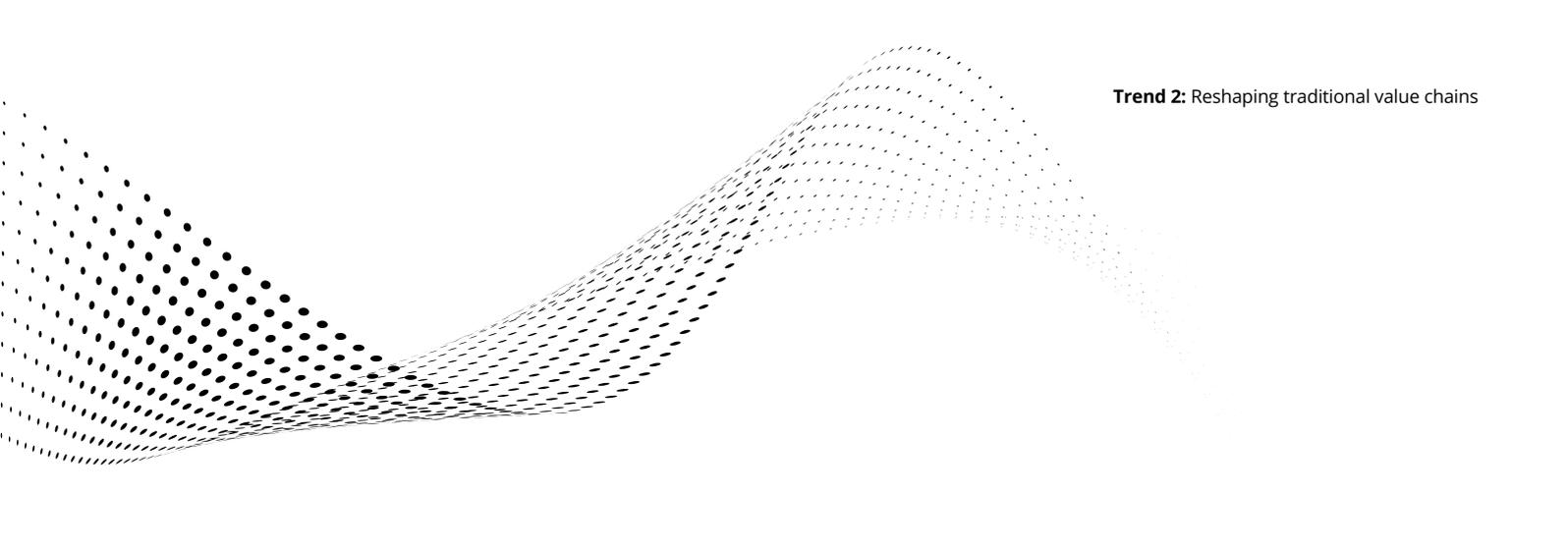


Trend 2

Reshaping traditional value chains

Laying the foundations for a low-carbon future

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As the green-energy transition gets underway, calls for greater responsibility and transparency in metals supply are reshaping value chains, realigning portfolios, and spurring new business models. While the changing needs of consumers, suppliers, and investors are partly responsible for this disruption, a projected shortfall in supply for green and critical minerals is also at play.

Collectively, the industry must demonstrate that it's responsible enough to produce the vast quantity of metals required for a low-carbon future. The challenge lies in using the climate-change commitments that organizations have made, and the commodities or services they provide, to tell the story of growing, profitable, and sustainable enterprises that are contributing to societal and environmental needs in a positive manner.

For some companies, this might mean a portfolio restructure – perhaps selling off certain assets and reinvesting the returns into existing assets or critical minerals ventures – or refocusing the businesses they have to deliver better value, or even balancing them with new businesses that offer different types of value.

Going forward, mining and metals companies should also think about the impact of their operations and products across the value chain, and how that will change with the transition from linear to circular pathways. Successfully incorporating circular initiatives like metals reprocessing, recycling or urban mining into their portfolios may require mining companies to build new capabilities and skills that differ from their current business models. A key question will be how much value investors attribute to that change.

We see traditional value chains being reshaped in some interesting ways, including how portfolios are restructured, the types of new alliances being struck, new entrants coming into the value chain, and new circular business models that are being created.

Realigning portfolios

Under pressure from investors to exit high-carbon commodities, mining companies continue to review their portfolios, carving out commodities such as oil, thermal coal, and metallurgical coal assets. This will have the net effect of repositioning these corporate portfolios.

Andrew Lane—Energy, Resources & Industrials Leader, Deloitte Africa explains, “Take BHP as an example; the company is divesting its oil and gas business and realigning as a mining major focused on the energy transition.¹ I can see more mining companies heading in this direction in the future. We’re also starting to see spill-over between the mining and energy sectors. For example, some of our oil and gas clients are providing decarbonization solutions into mining.”

While public companies shed some of their assets, the underlying demand for many of these commodities will remain for some time. For example, while new hydrogen technology is being developed to displace metallurgical coal in steel production, it may be prohibitively expensive without large government incentives to convert the majority of blast furnaces to hydrogen. In the interim, private capital and family office money will continue flowing into higher-carbon assets, although this may not lead to the desired outcome of a greener economy.

Demand for critical minerals, particularly rare-earth elements, is also driving some miners to add commodities to their portfolios. For instance, Rio Tinto has recently added scandium² and tellurium³ to its portfolio. We should expect to see further moves in this direction as public mining companies realign themselves with the transition to green energy.

New alliances

Scope 3 emissions reporting will also inform a key set of choices for mining companies in terms of who their customers and suppliers are. While companies may not forward-integrate in the value chain, they are likely to create more strategic alliances to lower the value chain's overall carbon footprint.

The agreement struck between BHP and South Korea's POSCO⁴ in October 2021 to jointly develop steel-decarbonization technologies is a good example. The memorandum of understanding (MoU) follows BHP's earlier agreements with China Baowu Steel, JFE Steel and HBIS Group to explore emissions reduction from steelmaking. Combined, the output of these four steel companies equates to around 12% of reported global production.⁵

John O'Brien—Partner, Financial Advisory, Deloitte Australia, adds, "The alliances and partnerships that mining companies strike now with specialist re-processors are what will set them apart in the future. For tier one miners, the challenge will lie in redefining how they partner with customers and suppliers to achieve different outcomes to those of today."

Another parallel seen between mining and energy in recent years is a tilt toward the customer; as interest in metals provenance grows, there is an opportunity to move from a push to a pull supply mentality. Placing greater focus on the needs of the customer could help mining companies achieve a premium for responsibly-produced metals which, if reinvested correctly, will help to further decarbonize mining operations and accelerate value-chain transformation.

More likely in the short term is a drive by downstream companies, such as automakers, to lock-up supply of minerals required for the energy transition—again, either buying into the base resource itself or creating strategic alliances across the value chain. An example is the recent agreement between Tesla and Prony Resources⁶ to secure a multi-year nickel-supply agreement for electric-vehicle battery production.

New entrants into the mining value chain

The drive for green and critical minerals is also attracting companies from outside the traditional mining environment. Lithium is key in powering electric batteries, and this appeals to companies like Albemarle, a specialty chemicals producer, which has focused on Lithium production for many years and more recently acquired a 60% stake in the Wodgina lithium mine in 2019,⁷ and American Battery Technology Company that is creating an extraction and recycling business based around lithium.⁸

In other commodities, we have seen new players. For example, technology company Jetti Resources is extracting copper from low-grade primary sulfides. This has drawn the interest of miners such as BHP and Freeport McMoRan, who have invested in the company.⁹

These plays represent new entrants into the traditional 'explore– extract–process' value chain of mining, and it's likely that more companies will enter the market to support the energy transition.

Moving beyond commodities

While new entrants look to explore opportunities in the traditional value chain, some existing miners are keen to invest in new businesses and sources of growth. For example, Fortescue Metals Group has created a new business called Fortescue Future Industries which will supply renewable energy, green hydrogen, and green ammonia for Fortescue operations—all central levers to its own decarbonization journey. The company has also announced a green hydrogen investment of up to US\$8.4 billion into Argentina.¹⁰

But mining companies also have their eye on the circular economy. According to the World Business Council for Sustainable Development,¹¹ the circular economy represents a US\$4.5 trillion opportunity for global economic growth by 2030. Many mining companies already undertake a certain level of mineral and/or metal processing within their operations. Extending that interest to reprocessing will allow organizations to become less dependent upon the primary extraction of finite resources and to redefine their corporate purpose.

For example, Glencore has recycled more than one million tons of electronic scrap since the 1990s, and announced in October 2021 that it is looking to build an electronics-recycling business in the UK¹². This form of ‘urban farming’ uses significantly less energy than mining and smelting primary metal—around 80-90% less for copper¹³—and addresses a key shortfall in the supply of certain critical minerals.

In short, the focus on ESG and the opportunity around the circular economy is reshaping the traditional mining value chain and business models in new and interesting ways.

Future bites

Through partnering with adjacent industries, mining companies could accelerate value-chain decarbonization while stimulating the markets. For example, in June 2021, Rio Tinto and Schneider Electric signed a memorandum of understanding to develop a circular and sustainable market ecosystem for themselves and their customers.¹⁴ The partnership will see Schneider Electric use responsibly sourced materials produced by Rio Tinto, and Rio Tinto will use energy and industrial services from Schneider Electric, as both cooperate to develop digital platforms, technologies, and solutions to drive decarbonization.

Reimagining mining value chains

- **Position your portfolio:** The composition of a company's portfolio is one of the strongest indicators to the investment community around the positioning of the firm. Miners could use the Sustainably Advantaged Portfolio framework detailed in Trend one to explore synergies and value-creating opportunities based on their current portfolio and future investments, particularly those surrounding environmental, social governance (ESG).
- **Look for loops:** Explore opportunities to build circular loops into current production processes and design out waste. In certain instances, tailings can provide a source of residual metals and minerals ripe for secondary prospectivity. Characterization of both fresh and historical mine wastes will enable potential new streams of revenue to be identified and reprocessing options evaluated. Approaches like this could provide a powerful narrative to the market.
- **Collaborate for circular products:** According to the Global e-waste Statistics Partnership, 53.6Mt of e-waste was generated globally in 2019, but only 17.4% was properly recycled.¹⁵ Part of the issue is that recycling processes are often developed retrospective of materials, and, therefore, are either sub-optimal or large quantities of waste material have accumulated by the time they come into play. Mining companies should consider partnering with customers and others in their value chain to improve recycling processes for future materials. Collaborating to develop new products and materials that could replace metals in instances where supply might fall short could also reduce the risk of disruption. We should acknowledge that these businesses would often require new capability sets relative to what miners have today.

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