



Sustainability on the horizon

The prospects of a net-zero future
for metals and mining companies



Foreword >

The global economy has changed dramatically in the past few years, and the metals and mining sector has transformed along with it. Other drastic changes can be expected in the future, perhaps even bigger than those of the recent past. The pandemic and the recent war in Ukraine have placed supply chains under enormous strain. Climate change has altered the economic landscape, turning the spotlight on the minerals sector.

Metals and mining companies are seen as vital if the world is to reduce its reliance on fossil fuels. They must shift focus to the production of minerals needed to help reduce the carbon footprint, not least in the production of millions of electric vehicles. At the same time, they may have to transform their own operations to conform with increasingly important environmental, social and governance considerations, while reducing their carbon emissions to net zero.



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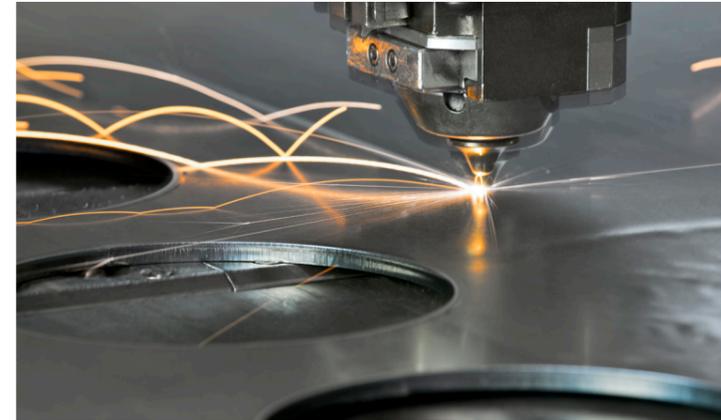
Trevor Hart

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It will be a tall order to achieve this transformation, but we believe the metals and mining sector is up to the challenge. It has ridden through many a storm in the past and can do so again. Minerals and metals prices are oscillating and this makes it difficult to plan ahead. Promisingly, our latest survey of the sector shows that executives around the world are planning to make the investments needed to restructure the way they produce. This can, in turn, help global business to move in a new direction.

KPMG hopes that this report will inform executives' planning for the years ahead. It is part of our mission to provide the latest information and analysis to provoke fresh thinking about the problems the industry faces and the ways to overcome them.

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Price surge encourages forward thinking

Higher commodity prices are providing a rare opportunity for the metals and mining sector to transform its operations as it heads towards a zero-carbon future, but there are multiple challenges ahead. For the sector, successful transformation will depend in part on how well it tackles environmental, social and governance (ESG) objectives.

KPMG set out to learn how the industry is adapting to the dramatic changes of the past few years, including a pandemic, severe supply-chain disruptions, the war in Ukraine and a surge in demand for battery materials. The demand for minerals vital to global efforts combatting climate change has raised the profile of the metals and mining sector in an almost unprecedented

way. In May 2022, KPMG commissioned Vantage Research to conduct a survey of more than 320 metals and mining executives to discover their plans for building a more sustainable future.

Companies in the industry face two overriding challenges: altering production patterns to accommodate dramatic shifts in demand, especially to support low-carbon technologies, while making big improvements to the environmental impact of their production footprint. Large mining companies are leading the way to meet environmental, social and governance goals (see page seven), while they aim for net-zero carbon emissions targets in the next decade or so.

Aside from ESG and net-zero goals, the three most important challenges facing my company are...



Source: Vantage Research, 2022

Optimism and anxiety

The survey, which was fielded from May 26 to July 6, 2022, found executives in an optimistic mood. The commodity cycle was working strongly in favor of producers, as the World Bank's Base Metals Price Index more than doubled in the 11 months preceding March 2022. This strong upsurge is expected to inflate profit margins for metals and mining to historic highs. Not surprisingly given the market trends, approximately 90 percent of executives surveyed are confident in growth prospects for their company and their industry over the next two years.

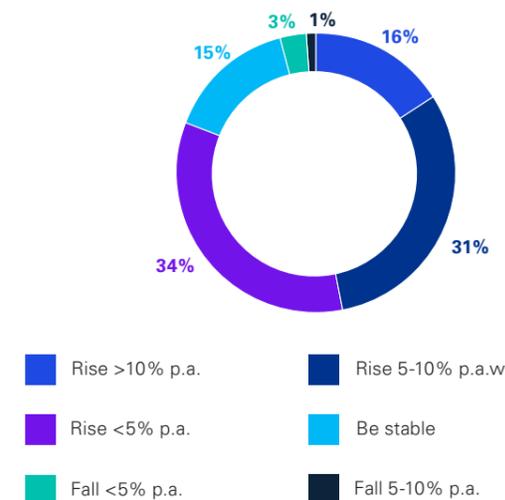
Some 46 percent say the prices of their companies' outputs will rise by 5 percent or more annually between now and mid-2024. A reason for their confidence was the added upward impetus on metals prices, prompted by the Russian government's invasion of Ukraine in February 2022. Three quarters say they were more bullish about prices at the time of the survey than they were at the end of 2021.

When asked what was influencing their price expectations, 38 percent say the main factor is demand rising faster than supply, while 31 percent point to heightened geopolitical disruptions, leading to elevated prices.

"There's been a huge increase in demand in the short term," says Eric Logan, Advisory Managing Director, KPMG in the US. "The question is whether it's a blip or truly sustainable. We see huge investments ahead in the US in infrastructure, automotive and construction, which lead us to think that the higher demand is likely to be sustained."

It remains to be seen, though, whether executives' optimism on prices is maintained in the wake of recent events. As central banks have raised interest rates to slow the rate of inflation, prices for some metals have declined sharply with the increasing chances of recession. After peaking in March 2022, spot copper prices, for example, slumped by a third by mid-July, before clawing part of the way back up by mid-August.

Over the next two years, we expect our company's output prices to...



Source: Vantage Research, 2022



Investment accelerates

Nobody has a crystal ball, but companies' optimism about metals prices is driving a surge of investment in new technology and process improvements. Some 43 percent of executives say they will accelerate investment in new manufacturing and mining processes, and this is opening the prospect for major industrial modernization. More than half the companies surveyed regarded the biggest business opportunity over the next two years as the transformation of their operations through technology investments, while 47 percent say they aim for transformation by means of acquisitions and divestments. In fact, technology investments will spur M&A and vice versa, as metals and mining companies restructure their operations.

The economic shift toward a low-carbon future is seen by executives as a business opportunity for metals and mining companies. More than one third predict they will significantly change their portfolio of products toward commodities and metals used to accelerate the transition to cleaner energy.

"The rise in commodity prices provides a huge opportunity for metals and mining companies to move to more green technology. But without sustained demand for less carbon-intensive products, I don't think you'd see the level of investment we've witnessed and the high number of announced new startups," says Logan.

Beneath the apparent optimism, however, there are anxieties about the future. Almost half (48 percent) say they are not prepared for the next economic disruption or have a lot more preparations to make.

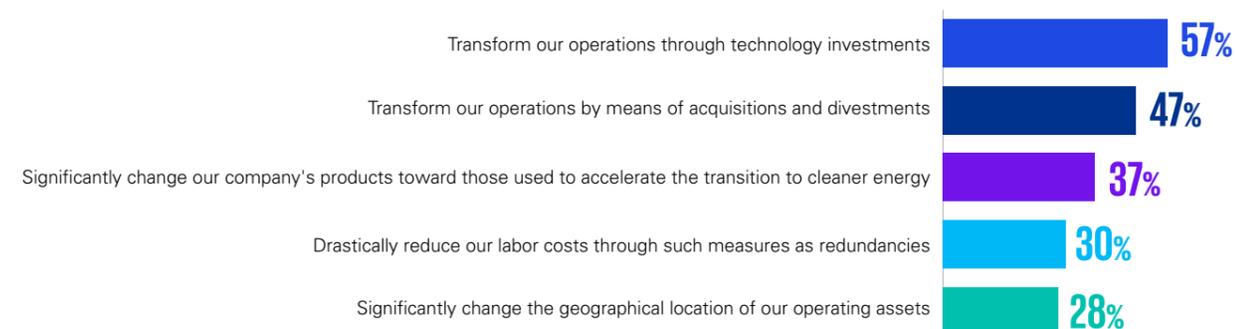
“ It is a slight misconception to assert that metals and mining have not fully embraced the wave of technological transformation affecting industrial sectors. The opposite is in fact true. Advances have been, and are being, made in a large number of areas, led by the largest players in metals and mining. The next exponential step up will likely be the huge investment that is being made in ESG-related technological advancements. ”

Ugo Platania

Global Head of Metals, KPMG International

When executives were asked about the most important challenges their company faces in the next two years (aside from ESG and net-zero goals), nothing specific stood out, suggesting that any future crisis is going to be complicated to deal with. Almost a third, the highest ratio, cited social conflict in the countries in which they operated. Many others pointed to geopolitical issues. "The war has changed how companies think about climate change and the energy balance, causing them to pivot away from energy imports," says Mikaela McQuade, Director, Energy, Climate and Resources, at the Eurasia Group.

What do you regard as your company's biggest business opportunities over the next two years? We have an opportunity to:



Source: Vantage Research, 2022

Transformation by example



Rohitesh Dhawan
CEO, International Council on Mining & Metals

Rohitesh Dhawan is the President and Chief Executive Officer of the International Council on Mining & Metals (ICMM), one of the most influential metals and mining organizations in the industry. He has the opportunity to help move metals and mining companies along in their net-zero and sustainable transformations. As ICMM points out, "We are not a lobby group, but a global leadership organization for sustainable development. We judge our success by our contribution to creating a safe, just and sustainable world through responsibly produced metals and minerals."

In 2021, ICMM conducted research that compared the social progress since 1995 of countries that are deemed "mining dependent" with countries that are not. By measuring their performance according to the UN's social development goals, the research found that metals and mining-dependent countries have made greater social progress than other emerging markets. Mining-dependent countries were more successful at closing domestic, and economic gaps and the quality of governance is higher. "The data is clear: rather than a resource curse, the presence of mining generates a resource dividend for host countries," says Dhawan.

One way of ensuring that metals and mining are a resource blessing is to speed up social progress further. Since its inception in 2001, the ICMM has focused on sustainable development over the past two decades. They have regularly enhanced their membership requirements with the aim of being at the leading edge of responsible mining.

Each company member, together accounting for a third of the global industry, has to commit to implementing "Mining Principles" as a condition of membership. These principles aim to define best-practices for environmental, social and governance (ESG) requirements within the metals and mining industries. In 2022, ICMM announced a three-year strategy that will see it work across 12 areas spanning Environmental, Social, Governance and Innovation issues. Although he emphasized that all 12 are important, three were top of mind for Dhawan.

Zero harm. The health and safety of workers at metals and mining companies continue to be a top concern. "Until we get to zero harm, we won't be where we want to be," says Dhawan. ICMM is championing the fact that the definition of 'zero harm' should be expanded to include not only physical injury but also psychological harm. "We are striving for the highest practices of diversity, equity and inclusion and we are very far from that at the moment," he says.

Net zero. Dhawan is proud of the fact that the ICMM is the first group of companies in any hard-to-abate sector to collectively commit to net-zero carbon emissions by 2050 and to specific actions that will enable its members to reach this impressive target. From 2016 to 2018, carbon emissions globally grew by 3 percent, while emissions of our company members fell by 6 percent," he says. And from 2020 to 2021, some ICMM companies reduced emissions by double-digits.

“ Since its inception in 2001, the ICMM has focused on sustainable development... ”

Nature preservation and restoration. ICMM has long committed that its members would not mine or prospect in a World Heritage Site, but Dhawan points out that other sectors and governments have not matched this commitment. He says that the best way to meet the pledge of having a net-positive effect on nature is to aim to hit three targets: no net-loss of biodiversity today, "nature-positive" by 2030 and complete biodiversity restoration by 2050.

ICMM members are challenging themselves constantly to raise the bar on what's possible when it comes to responsible and sustainable mining, says Dhawan. "Our singular focus is on sustainable development. These principles are core to how we operate. Our industry is critical to the world's decarbonization, but rather than see that as a license to mine at all costs, we are committed to mining with principles," he says.

Spotlight on environmental, social and governance issues

A major focus of executives is to develop ESG criteria that will enable their company to satisfy the demands of shareholders, governments and employees. They recognize the importance of this, but many admit they are a long way from meeting their objectives. Only 30 percent say they have integrated ESG goals into enterprise strategy. Others are some way behind: another 48 percent say they have developed ESG goals and are in the process of making them a part of the overall strategy. For the broad mass of respondents, no specific method of achieving these objectives stands out, either overall or for environmental, social and governance objectives individually.

Even so, the top two choices (by a small margin) help point executives in a useful direction, as they strive to meet ESG criteria. A plurality of survey responses is in favor of clearly communicating the company's goals in order to create an ESG-aware culture, and of building a culture of integrity. These steps are likely to help companies attract people with the skills executives believe they will need most: in data sciences, artificial intelligence and finance.

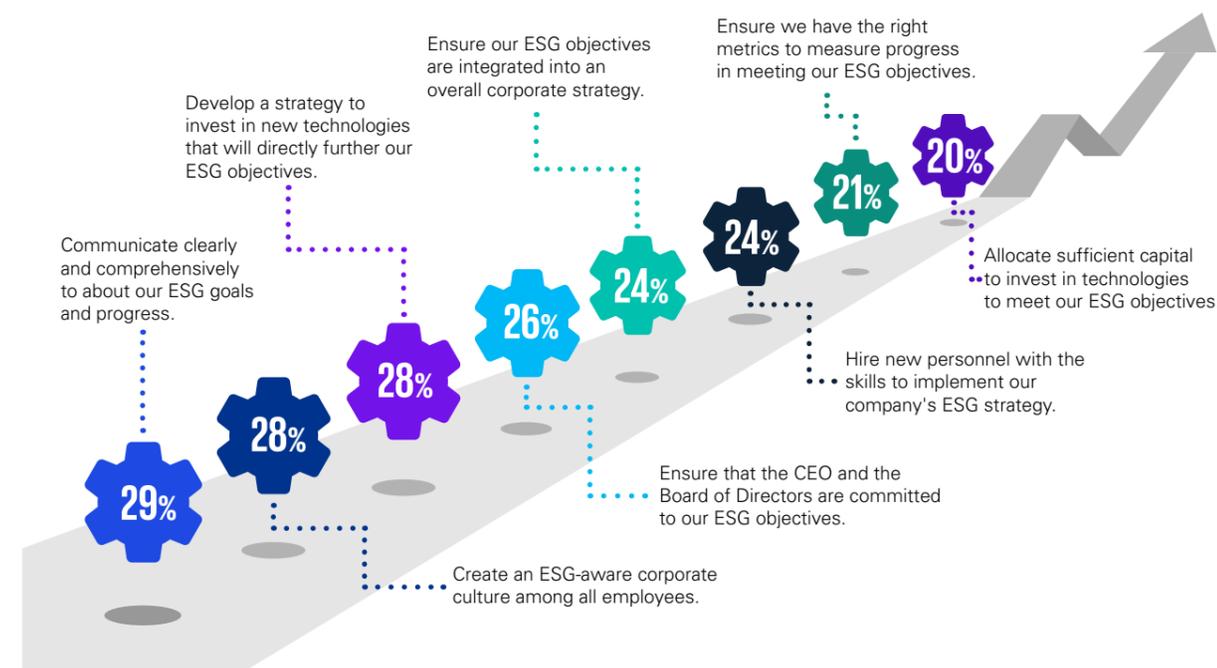
However, this is easier said than done. There are several challenges executives see in achieving ESG objectives, the most prominent of which is inconsistent government rules about ESG reporting.

Apart from this, there is little difference among other challenges, although a dearth of resources and a lack of leadership from top executives do stand out as difficulties companies face. Another challenge is the war between the Russian government and Ukraine, which has set off a scramble for fossil fuels to replace Russian energy resources embargoed by Western governments. Thirty-five percent of executives say that the war is likely to cause their company to postpone its ESG programs by more than a year and another 34 percent by up to one year.

“ Integrating ESG goals into corporate strategy entails ensuring C-level executives lead the effort. The heavy lifting on ESG will likely be delivered by an organization’s culture, in which a sustained focus can deliver the best outcomes. ”

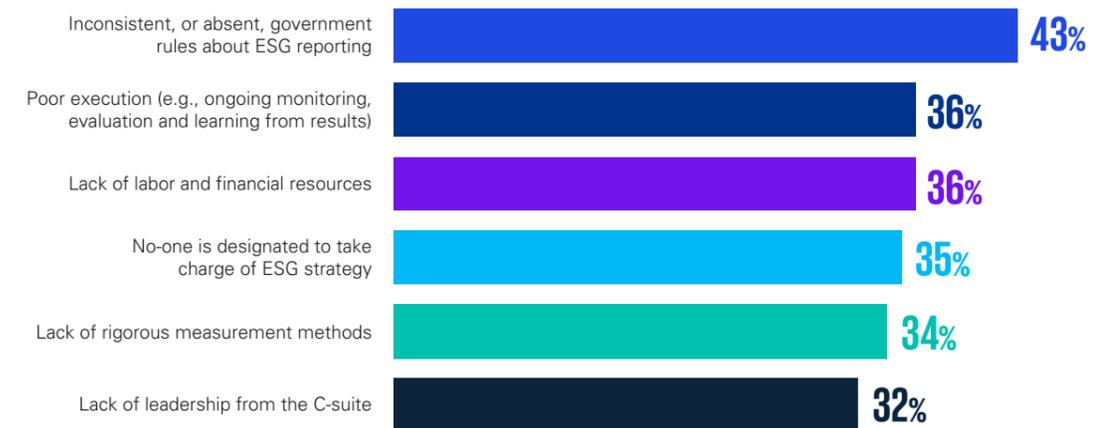
Trevor Hart
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If developed, what are the primary methods by which your company aims to meet its ESG objectives?*



*For companies that have developed ESG goals
Source: Vantage Research, 2022

What are the main challenges your company faces in achieving ESG objectives?



Source: Vantage Research, 2022

Complexity of trading

Another challenge cited by metals and mining executives is fast-changing government regulations. One regulatory issue the industry faces in Europe concerns government efforts to reduce demand for carbon-intensive steel. In the EU, steel companies are going to have difficulty complying with new rules that seek to deter imports of carbon-intensive metal.

The European steel trade will likely become more complex due to the carbon border adjustment mechanism, agreed upon by the European Council in March 2022. The mechanism is intended to equalize the price of carbon between domestic products and imports and ensure the EU's climate objectives are not undermined by imports of cheaper, carbon-intensive steel.

“Because steel-makers are huge and steel distributors tend to be medium-sized, it means that they don't work hand in hand. My message is that it would be better if the

two parts of the steel industry exchanged views much more, in respect of the compliance rules for green steel and non-green steel. Both sides need to work together for the long-term health of the industry. It will be very hard for steel distributors to manage distribution for the two types of steel,” says Daniel Guinabert, Director General of Eurometal, an association of leading distributors.

The added complexity of new environmental rules is likely to have a significant effect on trading relationships, which are already stretched thin. Many economic headlines have focused on supply chain difficulties in the past couple of years and the risks of further disruption continue to preoccupy executives. Supply chain issues are most often cited as a risk over the next two years and the nature and scope of these difficulties are likely to grow. Between now and 2027, supply chain problems rank only behind corruption as the top challenge facing the industry.

Toward net zero

Metals and mining companies are similarly ambitious about their net-zero targets. More than three quarters have set a net-zero objective at their companies and of those who have done so, 29 percent expect to achieve it by 2025 and another 40 percent by 2030. Executives say the most effective measures that will help their companies meet net-zero targets are, first, to ensure their company communicates clearly and fully to stakeholders and, second, to see to it that net-zero objectives are incorporated into overall corporate strategy.

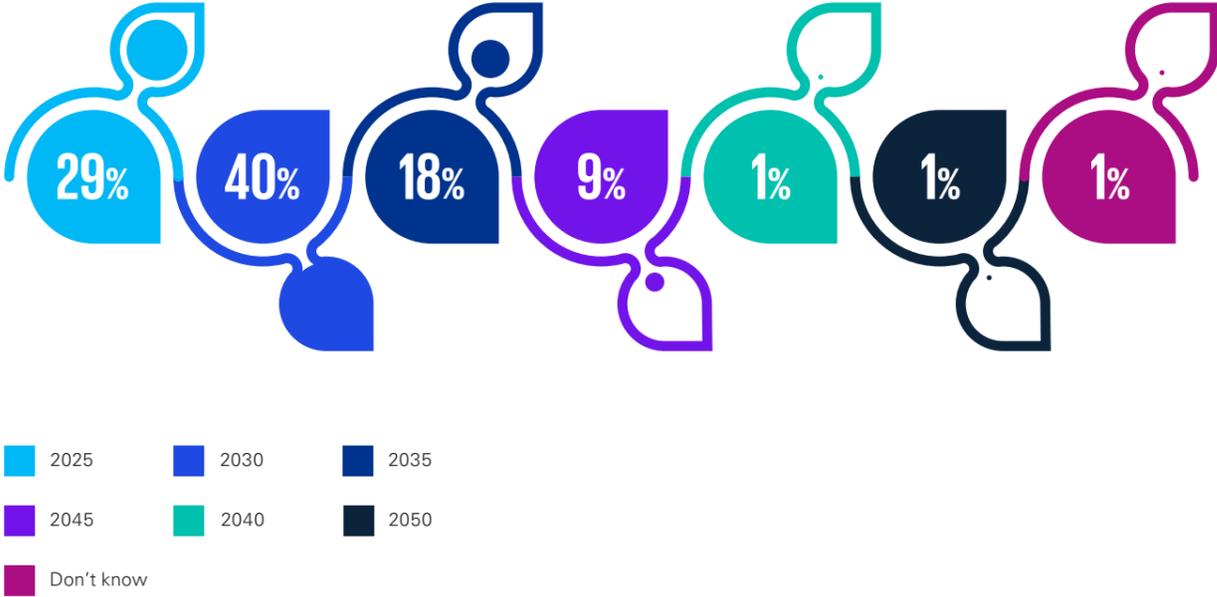
As with ESG objectives, they face a number of obstacles to reaching their net-zero goals, the biggest of which are the difficulty in measuring progress and a lack of resources to bring them about. Investment in new technologies to help companies reach net zero holds promise, but 58 percent admit they either have a long way to go in using these technologies or haven't even started to plan ahead.

“ The sector is increasingly and consistently setting very ambitious goals related to net zero. This should be lauded and encouraged. We are, however, in dire need of a set of common measures and metrics to help ensure that all parties not only have a common understanding of the progress that has been made, but also that the investment required, through wider market participation, becomes sustainable over time. ”

Ugo Platania
Global Head of Metals, KPMG International



When do you hope to achieve a goal of net-zero emissions?



Source: Vantage Research, 2022

Follow the leaders

Faced with a range of difficulties, companies are going to find it challenging to move ahead to make their operations more sustainable. But some of the executives responding to the survey offer possible paths to success that others could follow. Leading companies in the survey are those where executives say they are 'net-zero ready' and anticipate achieving their net-zero goals by 2030. By this definition, 27 percent of respondents are leaders; the remaining 73 percent are not (92 percent of leaders, so defined, say they are also ahead of their peers in financial performance, compared with 62 percent who are not leaders).

Leaders are distinctive in a number of ways that may help others find paths to success. They tend to be:

-  More likely to be well-prepared for the next disruptive event
-  Less likely to be seriously affected by geopolitical tension
-  Less concerned about supply chain risk

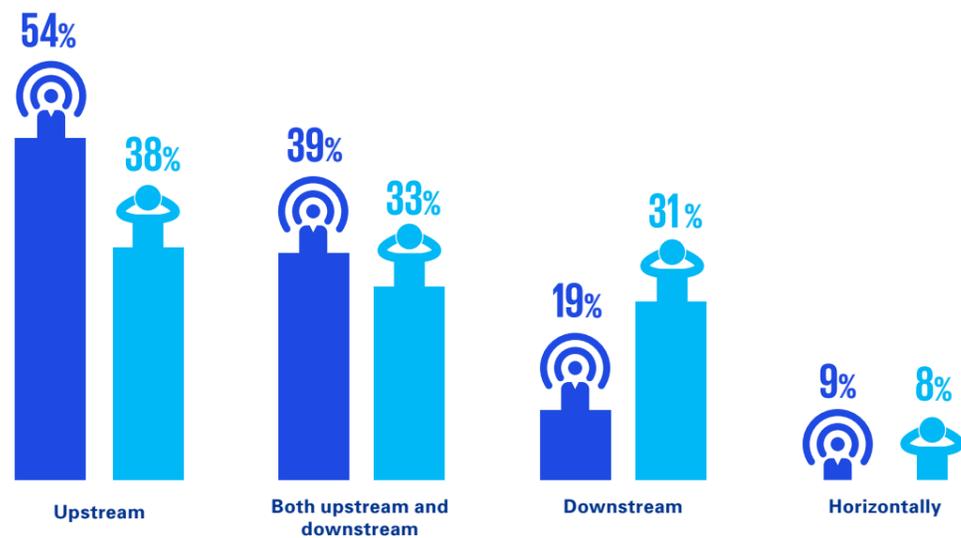
-  Better prepared to use leading-edge technologies
-  Confident they have fully integrated net-zero and ESG best practices into their corporate strategy
-  Fully engaged with key stakeholders in the achievement of their ESG goals.

These statistical findings help to develop a picture of what it takes to be a leading company: one that is resilient, confident and deeply invested in the future.

Leading companies are also taking a strategic view of how the metals and mining sector might evolve. They say that the number of major producers is going to grow within the industry. To prepare for the possibility of more competition, most leading companies are accelerating their investments into new manufacturing and mining processes in the next two years.

They are, in addition, changing the shape of the company by making significant M&A deals, with a focus on upstream acquisitions and the divestment of non-strategic parts of the business.

Is your company considering making significant acquisitions in the next five years?



Note: Leaders are those companies in the survey where executives say they are "net-zero ready" and anticipate achieving their net-zero goals by 2030

Source: Vantage Research, 2022

 Leaders  Laggards

Nuggets for the future

Many of the industry's leading companies and those that aspire to lead are confident about the future. Buoyed by an upsurge in prices, they aim to invest in technologies that will transform their operations and make it easier for them to reach their sustainability objectives.

These are just some winning traits for every corporation in the sector, whether in metals or mining. To achieve net-zero goals in the near future, companies should focus on recruiting and retaining people with the skills to manage the transformation. They must prepare for possible disruptions in the short and long-term, ranging from new, geopolitical flashpoints to severe and dramatic changes in the environment.

Based on not only the survey findings, but also decades of KPMG firms' work with metals and mining clients around the world, companies in the sector should pay attention to the following key advice:

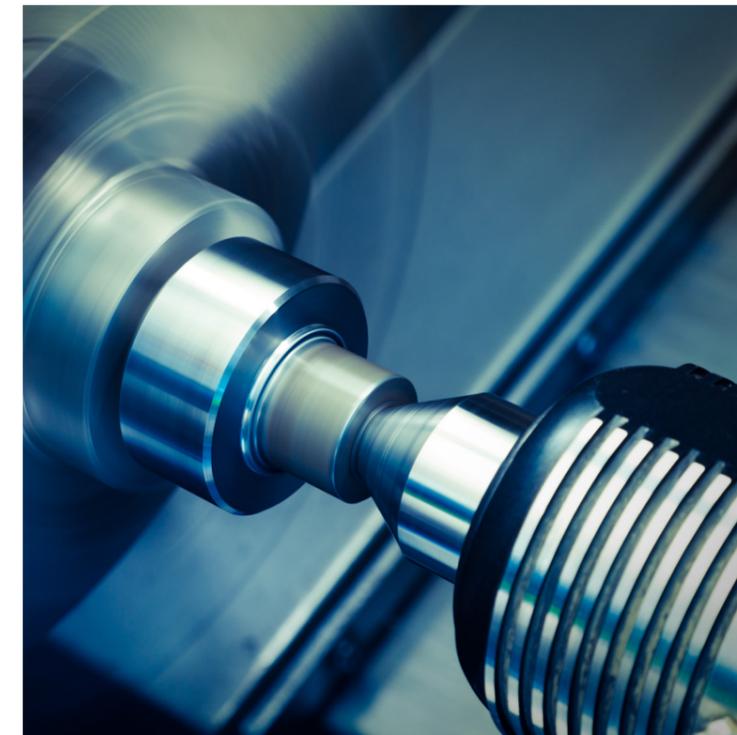
 Accelerate the implementation of ESG goals to develop a business-as-usual culture of excellence in the organization. Success in this field can take years of consistent attention to detail, monitoring progress in reaching measurable ESG outcomes. The process begins with enlightened leadership from the top.

 After decades of focusing on shaving costs per unit of output, the sector should now redouble its efforts to invest in new technologies, M&A opportunities and stronger supply chains. Given the wide swings in commodity prices, companies must plan for a range of possibilities with regard to investing in measures to enhance sustainability.

 The survey has shown that companies should communicate clearly and comprehensively to their stakeholders about their carbon and ESG goals. This entails setting measurable objectives, irrespective of the fact that government rules about ESG reporting may be inconsistent or unclear. A leader's job is to engage more with all stakeholders, communicating confidently and transparently about their strategy.

 Companies continue to be highly concerned about corruption and social conflict within the countries, territories and jurisdictions in which they operate. These elements have always been major sources of risk for metals and mining companies. The first order of business is to rededicate the corporate mission to doing business with complete integrity. This may not only place the company in a strong position in its relations with stakeholders, but can also enhance its attraction to people with the skills needed for the future. Integrity breeds resilience.

The metals and mining sector at last has the opportunity to invest wisely and well in some cherished business objectives, thus enabling mining and metal companies to play their part in building a low-carbon future for the planet. There is no time like the present to begin the journey.



Survey Methodology

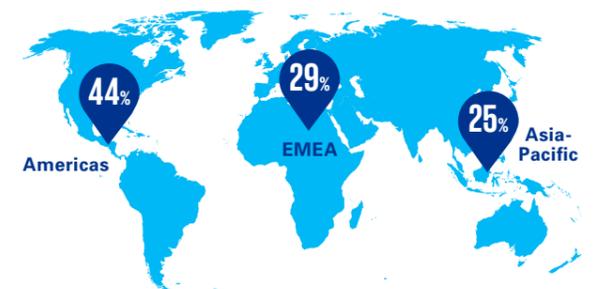
KPMG International commissioned Vantage Research, a US thought leadership firm, to conduct a survey of more than 320 metals and mining executives to find out their plans for building a more sustainable future.

The confidential survey was conducted between May 26 and July 6, 2022 and gathered the views of executives in more than 15 countries. Forty-four percent are located in the Americas, 29 percent in EMA and 25 percent in Asia Pacific.

The respondents consisted of senior executives: 93 percent are Board members or C-Level executives. 42 percent work in finance, 24 percent in operations and 22 percent in general management. More than half (55 percent) work at companies with an annual revenue of more than \$10 billion.

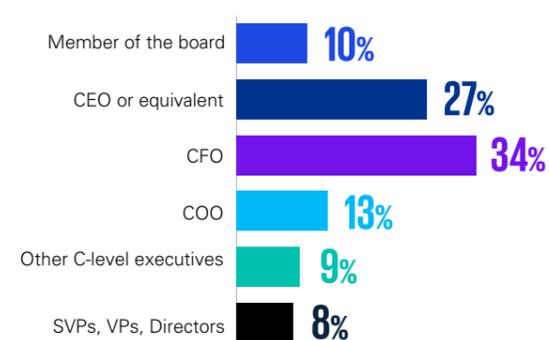
The companies who responded to the survey operate in a wide range of metals and mining areas, including 24 percent in iron ore and 37 percent in steel, alongside 21 percent in copper and 16 percent in copper products.

Where are you personally located?



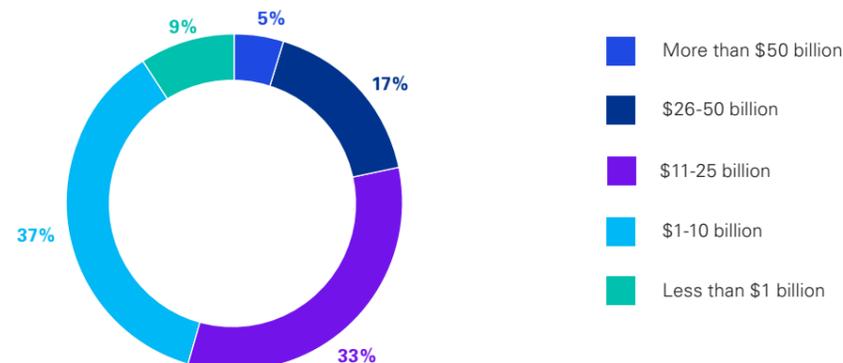
Note: Percentages may not add up to 100 due to rounding

Which of the following best describes your title?



Note: Percentages may not add up to 100 due to rounding

What is your company's revenue in USD in the most recent financial year?



Note: Percentages may not add up to 100 due to rounding

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