



Global Mining Outlook 2022

Extracting key insights for mining leaders



Foreword

Changing times

Ever since we began our global survey of mining executives 12 years ago, one thing has been constant: the top risk for the industry has always been commodity prices.

So this year marks quite a moment: commodities markets have lost their place at the top of the risk radar, overtaken by environmental risks and regulations. The environmental, social and governance (ESG) agenda looms large — the third top risk (community relations and social license to operate) is also related to ESG.

For an industry that inherently operates over the long term, these shifts in a short space of time are striking. They underline the extent to which climate change-related issues and ESG more broadly are reframing corporate priorities in mining, as in almost every business sector. They also influence the attractiveness of the industry to the new and diverse talent it requires.

ESG is becoming ever more top of mind in mining company boardrooms, but this doesn't mean that other opportunities and risks have fallen away. Commodity prices will always be the commercial lynchpin of the industry's fortunes — and with prices riding high, executives in this year's survey

are generally in a confident mood. The risk is more around price volatility, with some marked swings of late challenging established LME trading systems, with temporary suspension of nickel trading as a result.¹

Another dramatic difference this year is that the pandemic has disappeared from the top 10, after leaping in at number two last year. Now it seems like the industry regards COVID-19 as something it can incorporate into business as usual as global demand for commodities to power the economic recovery builds.

However, the pandemic has certainly left its legacy. Supply chain issues have become more prominent. Political instability, nationalization and the global trade conflict threat have all become front-line factors too. Our survey was carried out before the terrible events in Ukraine unfolded. I suspect that if we were to re-run it now, these risks would be appreciably higher still.

From my observation, the opportunities for the industry are outstanding. The importance of the sector for the world's future has been gaining more and more prominence and I believe it finds itself in such a strong position to deliver.



As the world's supply chains look to meet rising demands, the mining industry finds itself increasingly in the spotlight, being challenged to quickly deliver the materials the world needs in a way that is acceptable to more and more stakeholders. In my view, transparency and high-quality engagement will be critical. For those who get it right, I believe the rewards will be significant!"



Trevor Hart
Global Head of Mining
KPMG International

¹ Reuters, LME forced to halt nickel trading, cancel deals, after prices top \$100,000, Eric Onstad, March 2022.



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Shifts in the risk landscape

While the biggest external risk event seen in a generation — the global COVID-19 pandemic — has receded, it is notable that the top risks facing the mining industry generally come from outside rather than within.

“Bread and butter” industry risks such as commodity prices, permitting risks and access to reserves are still key issues, but it is the risks that arise from externalities, such as environmental regulations and geopolitical factors, that are really taking up executive thinking time.

The standout feature of this year’s results is that two ESG-related risks are in the top three. We will delve deeper into ESG shortly. Meanwhile, political instability and global trade conflict complete the top five. Given the events in Eastern Europe, these concerns may be even higher right now.



54% agree that the mining industry needs to consolidate to manage costs and risks more effectively going forward.

Certainly, our research underlines how quickly political scenarios and risk landscapes can change in real time. On a regional basis, executives in Europe, the Middle East and Africa (EMA) were least worried about political instability. In our view, this will surely have changed now. Those most worried by political instability were respondents in Latin America, which is consistent with The Economist's recent Democracy Index findings for the region².

Three of the top risks identified (trade war, regulatory shocks, political stability) could be described more broadly as geopolitical risks. Unsurprisingly, businesses are feeling the impact of growing geopolitical volatility in a world of uncertain power dynamics. The most precious commodity for global businesses to plan, invest and grow is stability. This is becoming a rare commodity in today's fractured world. We believe more time, money and effort will have to be invested by mining company boards and strategy teams to help navigate political minefields.

On the positive side, last year's concerns over the risk of an economic downturn have dropped — most likely due to the subsidence of the pandemic during 2021 and the transition into the recovery phase. Alongside this, access to capital has fallen out of the industry top 10 from last year, indicating that mining organizations are more confident in their ability to raise funding and investment. Nevertheless, when executives were asked to rank risks specifically for their own

companies rather than on an industry-wide basis, it does feature in the top 10, suggesting some unevenness according to the individual profile and commodity specialization of the business. Those specializing in coal, for example, may find it becomes harder to secure investment in the future.

Inflation hovers as a new concern, just on the fringes of the top 10. Certainly, supply chain issues — the eighth top risk — have been driving a rise in the cost of materials and supplies, while economies globally are beginning to wrestle with inflationary pressures. In our view, energy costs for businesses are rocketing and there is also upward pressure on wages. Over half (54 percent) of executives agree that some consolidation is needed in the industry to manage costs — rising inflation will only add to this.

There is another notable new entrant — the talent crisis. Attracting and retaining the right people is becoming an increasingly live issue for the industry. On an industry-wide basis, the talent crisis is a top 10 issue, while when asked about risks for their own specific organization, executives rank attracting and retaining talent at number seven. The workforce is an aging one and attracting a new generation of talent with the right skillsets for today's shifting priorities (such as technology and ESG-related expertise) is challenging. It's an issue that confronts almost every player in the industry — and one that we discuss in more detail a little later on.

The workforce is an aging one and attracting new-generation talent with the right skillsets for today's shifting priorities (such as technology and ESG-related specialisms) is challenging.

²The Economist, Democracy Index 2021: less than half the world lives in a democracy, February 2022.

Top risks for the mining industry

2022	Rank	2021
 Environmental risks, including new regulations	01	Commodity price risk
 Commodity price risk	02	Global pandemic
 Community relations and social license to operate	03	Economic downturn/uncertainty
 Political instability/nationalization	04	Community relations and social license to operate
 Global trade conflict	05	Environmental risks, including new regulations
 Ability to access and replace reserves	06	Permitting risk
 Permitting risk	07	Political instability
 Supply chain risks	08	Access to capital, including liquidity
NEW Talent crisis	09	Ability to access and replace reserves
 Regulatory and compliance changes/burden	10	Regulatory and compliance changes/burden

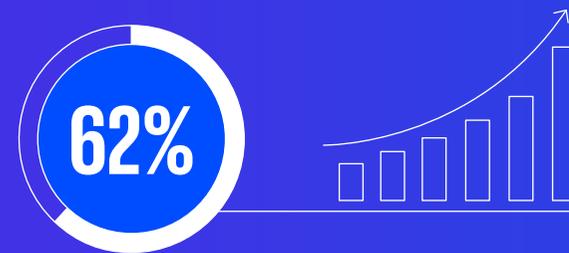


Confidence and capital

The world needs minerals — and indeed, as the move towards decarbonization and energy transition accelerates, minerals like lithium, cobalt, graphite and others could see enormous growth in demand as the KPMG report [Resourcing the energy transition](#) has explored.

Therefore, it is no surprise that mining executives are generally confident about the future, with a rise in optimism compared to last year's survey. Over half (56 percent) say they are more optimistic about the outlook for their organization compared to a year ago, including nearly one-fifth (18 percent) who are "significantly" more optimistic. Over six in 10 (62 percent) are confident or very confident about growth prospects, albeit this is fractionally down from a year ago (66 percent).

"From what we've observed, commodity prices are sky high — if volatile — and this is generally underpinning industry confidence," observes Trevor Hart of KPMG.



62% of respondents are confident in the growth prospects for their organization over the next 12 months.

Top strategies for growth

01

Organic growth

02

Mergers and acquisitions

03

Productivity gains from existing operations

04

Innovation and technological transformation



As we have noted, access to capital has dropped out of the top 10 industry risk list — and when asked specifically about the topic, executives' responses show a general improvement in the position. Thirty-seven percent agree that access to traditional sources of capital (debt/equity) has improved over the last year, a rise from 32 percent in the 2021 survey, and there has been an equivalent drop in those who agree that access to capital is a significant constraint.

However, responses are not uniform, indicating that while the general trend is improving, for some organizations access to capital is challenging. And on an individual company basis, it sits at number 10 on the top risk list.

Perhaps it is as a result of this that we see some interesting trends emerging. Firstly, nearly two-thirds of respondents (62 percent) agree or strongly agree that companies need to embrace new business models, such as strategic partnerships, private equity and public-private partnerships. This is especially marked among organizations with a market capitalization of less than US\$5 billion. There are signs that a combination of funding factors and the increasing ESG-related scrutiny, reporting and regulatory requirements placed on public companies is leading more mining businesses to contemplate alternative models.

More than 6 in 10

agree that mining companies need to embrace new business models such as strategic partnerships, private equity and public-private partnerships.



Healthy cash and good access to capital are indications that M&A is on the agenda. But for some mining companies, access to capital is harder. Combined with rising regulatory requirements for public companies, we may see more mining assets going private."



Richard Metzner
KPMG in the US

Secondly, there has been an increase in those businesses saying that mergers and acquisitions (M&As) will be an important strategy to achieve their growth objectives. Organic growth is still seen as the number one method for most businesses (56 percent) as it was last year, but M&A is a clear second at 37 percent, up from 31 percent a year ago. M&A has long been a feature of the industry, with big players buying smaller businesses as a faster route to increasing footprint and production than the long process of starting a new greenfield site. The signs are that M&A activity is set to rise further in the years ahead — albeit, if valuations stay high, businesses may weigh up the cost of M&A against investing in their existing brownfield sites.



The best opportunities are around existing mines. So, the most cost-effective way to find more profitable ores is through the drill bit, rather than paying premium for companies that are already fully valued. Although there are always exceptions to that.”



Jeff Parr
Vice Chairman
Agnico Eagle Mines Limited



It is increasingly difficult for a public mining company to succeed with the traditional business model. Today’s companies need to embrace new business models such as strategic partnerships, private equity funding and public-private partnerships.

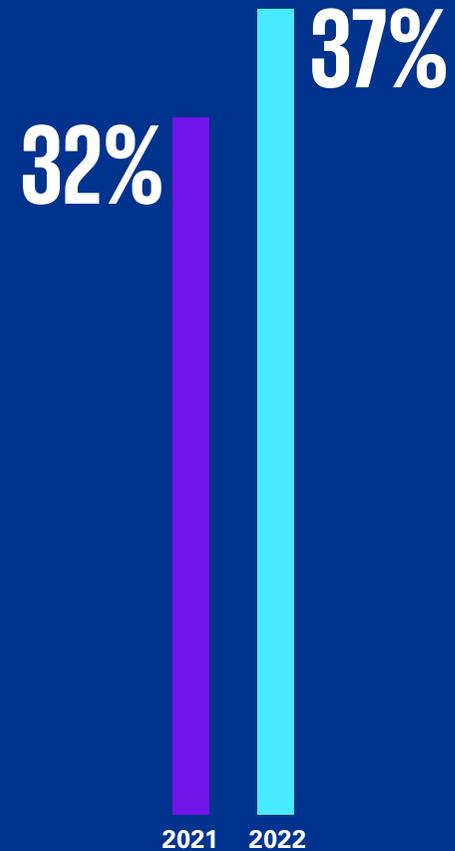


Less than US\$5 billion



More than US\$5 billion

The ability for the mining industry to access traditional sources of capital has improved over the last 12 months.



ESG with everything

In the wake of last year's COP26 summit, countries have committed to ambitious net zero and decarbonization targets (including around deforestation) — and for these to become a reality, companies will have to adopt stretching targets too. This places a focus on industries with a high carbon footprint and environmental impact, such as mining.

The impact of this is not being underestimated by mining executives: nearly three-quarters of them (72 percent) agree or strongly agree that ESG will be a cause of major disruption in the industry over the coming three years.

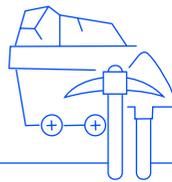
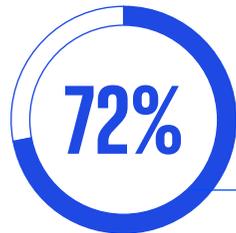
They also recognize that ESG issues will drive significant business model change. Over eight in 10 executives (84 percent) agree or strongly agree that success in the long run will become increasingly dependent on defining success in more than just financial terms, requiring the need to look more holistically at stakeholder returns, including governments, communities and employees.



84% of respondents believe the ability to achieve success in the long run is becoming increasingly dependent upon their ability to define success in a broader term than financial.

This raises plenty of opportunity, as Nick Harridge of KPMG Australia comments: "Social and investor expectations towards ESG are pushing miners to invest in innovative ways and adapt at a faster pace. We expect the opportunity to commercialize new technologies will continue to fuel more innovation and investment, further increasing the pace of change. This is an exciting time for the mining industry."

Of course, certain ESG concerns are nothing new for the industry. For many years, mining companies have been used to complying with environmental regulations and health and safety rules, and engaging and investing in the communities where they operate.



72%
of respondents expect disruption in the mining sector due to ESG in the next three years.



We believe there's no doubt that the scrutiny from outside stakeholders and investors has risen — and their expectations too. As Manuel Fernandes of KPMG in Brazil observes: “License to operate used to be a nice-to-have — now we believe it’s a must.”

Investors are increasingly basing their investment decisions around ESG metrics, as well as expecting some degree of ESG-related due diligence in connection with acquisitions or new ventures. At the same time, reporting requirements — together with assurance over their disclosures — are expected to rise.



Increased stakeholder interest in ESG targets and rising investor expectations are signs that mining businesses are having to change their focus and make longer-term commitments they’ve not had to make in the past.”



Katherine Wetmore
KPMG in Canada



One problem the industry is grappling with is that the rules and requirements that will emerge are not yet clear. And instead of coming more into focus over time, our survey shows that, in fact, executives believe the situation has become less clear. Over half (55 percent) of executives disagreed or strongly disagreed that investor expectations and measures are clearly understood and consistent across the market — a year ago, that figure stood at 40 percent.

“Mining companies like clarity and certainty. So they are wrestling with the question of how they should report to the market about their ESG progress when it's not really clear yet what good looks like,” comments Trevor Hart, Global Head of Mining at KPMG International.



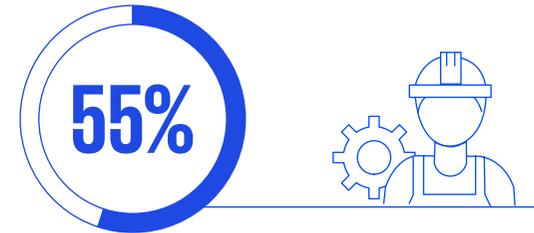
To get to a 30 percent carbon reduction by 2030, we need to bring more renewables into our business. Doing that for our high carbon-emitting sites — converting them to wind or solar — will take us to that 30 percent target in combination with other efficiencies.”



Ivan Mullany
Senior Vice President of Projects
Newmont Corporation

ESG reporting standards and requirements are actively being developed by various bodies and should be finalized in the coming years. In the meantime, mining companies should keep close to developments and stay actively engaged with investors and other stakeholders, helping to ensure they are communicating clearly around their ESG efforts, targets and measures.

At the same time, community engagement is critically important. In the last few years, various incidents have shown that social license to operate is hard won and easily lost. In a social media age, the repercussions can spread globally at lightning speed. In our view, it is anticipated that continued and increased engagement with communities — understanding and responding to concerns and delivering investment programs that enhance the quality of community life — will be key.



of respondents do not believe ESG expectations are clearly understood and consistent across the market.

Technology transformation

One important way of reducing carbon footprint is through the adoption of new technologies — with 87 percent of executives believing that technology has a key role to play in solving ESG challenges.

Nearly half of executives (46 percent) believe that technological innovation will be a source of major disruption in the industry over the coming three years, and nearly everyone is determined to jump on this as an opportunity rather than a threat.

It is not difficult to see how the adoption of new technologies could help mining companies reduce their operational carbon emissions. If mining equipment and trucks could run on electric batteries (or hydrogen, as is beginning to be trialed in Australia), rather than diesel or petrol, the carbon gains could be significant. More generally, mining companies are looking to embrace renewable energy sources to take fossil fuels out of the production profile — but (as for other industries) this remains relatively early days.



87%
of respondents believe that technology and innovation will play a key role in solving ESG challenges.

Katherine Wetmore of KPMG in Canada points out that the industry knows technology can help it meet its environmental challenges, but adds that “securing the talent to enable it to do this is key.”

Technology solutions are also needed to help with social license to operate, such as new techniques that minimize ground disturbance and the impact on flora, fauna and wildlife ecosystems.

Elsewhere, technology is already helping mining companies become more efficient and reduce costs, such as using drone technology for surveys. Sensors are being used to enhance productivity and also health and safety, indicating when fatigue levels may be rising among the workforce. Technology can also be harnessed to create real-time data streams that enable more informed decision making; for example, by building closed 5G networks at mining sites.

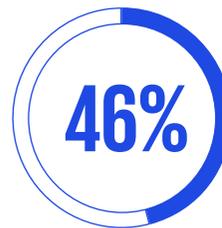
Whatever the application, it’s clear that increasing technology adoption is very much on the executive radar.



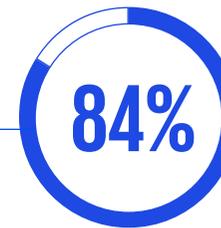
Mining companies are not well-known as technological disruptors. But there is a mandate now to invest more in technology to come up with solutions to the challenges of today – from ESG to productivity to ways of lowering costs.”



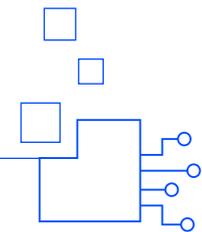
Manuel Fernandes
KPMG in Brazil



46%
of respondents expect major technological innovation to disrupt the mining industry in the next three years.



84%
of respondents believe technological disruption will be an opportunity versus a threat.





There is an opportunity for growth from embracing technology. You don't necessarily need to buy or find more ore. There's technology emerging now that is starting to let us reduce cut-off grades, for example, and produce more of what we already have and do that profitably."

Jeff Parr

Vice Chairman,
Agnico Eagle Mines Limited



Talent challenge

The need we have just discussed to integrate new technology into the business throws up a new requirement of its own — obtaining the people to implement, apply and optimize it. The KPMG and Eversheds Sutherland report on [Climate Change and the People Factor](#) found that technical skills to manage climate change and carbon markets expertise are in the most demand in the Energy and Natural Resources sector.

As we have noted, talent attraction and retention are very much on the mining executive agenda — coming back into this year's industry top 10 risks.

There is a sentiment that the industry needs a new wave of talent to fulfil a range of specialized and/or technology-centric roles. These needs are only getting broader: data analysts, computer scientists, environmental scientists, heritage experts, water management specialists, and more.



We see an opportunity to attract more talent, specifically more diverse talent, into the business to support things like our operational support hubs.”

Ivan Mullany

Senior Vice President of Projects
Newmont Corporation



Some mining companies are investing in their people programs and many have attractive mobility schemes that enable talented individuals to travel and work around the world.

But without doubt, the ongoing recruitment and retention of talent is an issue that is top of mind for mining executives. As Richard Metzner, KPMG in the US, observes, “Companies are asking themselves — what’s our employee offer, what trade-offs must we make to secure the talent we need?”

To a degree, this is an area where key issues join up: pursuing successful ESG strategies that decarbonize the sector highlights a progressive move to renewable energy and technology transformation, and emphasizes positive community impacts, which can help the industry attract more of the talent it needs.



Boards are needing more diverse skillsets to consider the broader array of opportunities and challenges facing their companies.”



Nick Harridge
KPMG Australia

War for talent

Ninth most pressing risk facing mining industry and organizations

Mining the data — Country perspectives

Mining companies face similar risks and opportunities around the world; but nevertheless, there are some interesting variations when comparing responses from the four key jurisdictions of Australia, Canada, Latin America and the US.

In terms of the perceived top risks to the industry, in Australia and the US it is the traditional concern of commodity prices that ranks highest. In Latin America, the two ESG-related issues of environmental regulations and social license to operate are the dominant risks. In Canada, we see a tie between social license to operate and, interestingly, the ability to access and replace reserves. This is possibly due to pressures on mining companies as new mining projects are pushing deeper into socially and environmentally sensitive areas, which puts pressure on the continued ability to access and replace reserves and also emphasizes the need for responsible extractive and processing methods, community relations and interactions with local stakeholders.

When looking at the overall confidence for the future of their organization, one jurisdiction stands out — Australia. Three-quarters (75 percent) of executives describe themselves as confident or very confident, considerably higher than in Canada (62 percent), the US (58 percent) and Latin America (54 percent). And this picture extends into the perceived ability to access capital. It's in Australia that the highest proportion say access to capital has improved, at 44 percent. This figure drops to 37 percent in Canada and to just 27 percent in the US and Latin America.

**It's in Australia that
the highest proportion
say access to capital
has improved, at
44%.**

It therefore also makes sense that when asked about the need for consolidation in the industry to manage risks and save costs, there is the lowest agreement in Australia (34 percent). This rises through the US (50 percent) and Canada (58 percent) to peak significantly in Latin America (80 percent). Latin America has extensive areas to be explored with a high potential for new discoveries. The need to build new infrastructure and modernize it in existing neighborhoods, combined with the requirement for more investment in innovation and new technologies, results in 76 percent of Latin American respondents agreeing that mining companies must

embrace new business models, such as strategic partnerships, private equity funding and public-private partnerships.

In other key areas, there is more uniformity. When asked whether their organization has a well-defined strategy for ESG, in all four countries/regions around half agree or strongly agree. High percentages also agree in each region that technology has a key role to play in decarbonization. This is particularly pronounced in Latin America, where 90 percent agree.

But differences emerge again when asked whether investor expectations and measures

around ESG are consistent and clearly understood. There is least concern with this in Latin America, where only 24 percent disagree that expectations are clear. This jumps to 52 percent in the US and 61 percent in Australia, but is highest in Canada where two-thirds of mining executives (67 percent) do not believe there is clarity and consistency.

Overall, while there are inevitably some fluctuations regarding specific issues, the prevailing picture that emerges is one of highest confidence and optimism in Australia; Canada and the US sit broadly in the middle, while Latin America has an increased level of risks and concerns.

When asked whether their organization has a well-defined strategy for ESG, in all four countries/regions around half agree or strongly agree.



Top industry risks in Australia

- Commodity price risk
- Decarbonizing the value chain, including Scope 3
- Talent crisis
- Community relations and social license to operate

Top industry risks in Canada

- Community relations and social license to operate
- Ability to access and replace reserves
- Environmental risks, including new regulations

Top industry risks in Latin America

- Environmental risks, including new regulations
- Community relations and social license to operate
- Commodity price risk

Top industry risks in the US

- Commodity price risk
- Environmental risks, including new regulations
- Political instability/nationalization
- Regulatory and compliance changes/burden

KPMG's Global Mining practice

KPMG firms help organizations and people discover new ideas to grow and manage risk and aim to deliver fundamentally better results through different ways of operating.

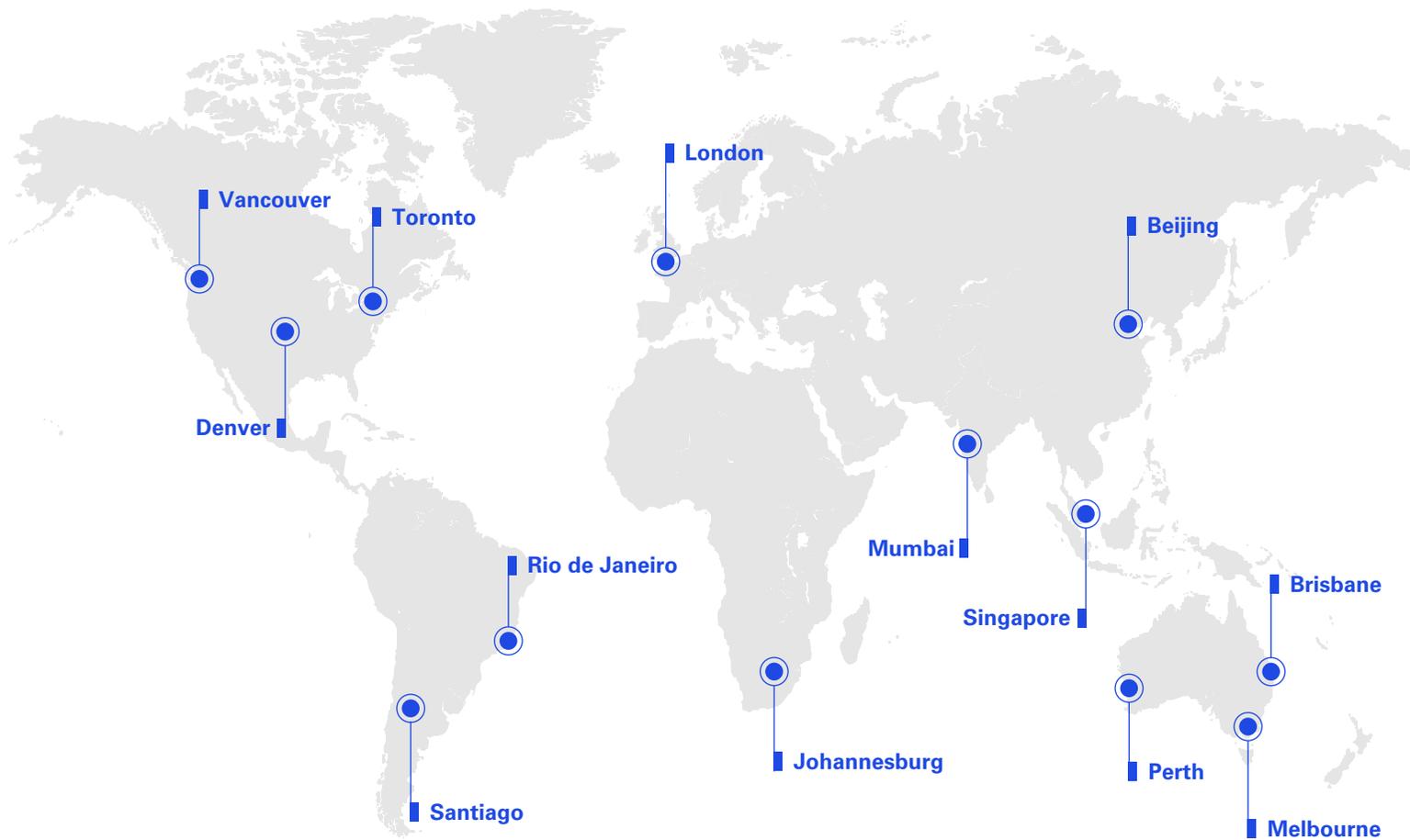
In the mining industry, KPMG professionals understand current issues, provide attention to technical detail and are relentlessly driven to innovate. Today's mining challenges tend to be unusually difficult and most often call for financial methodologies. Surround yourself with inspired KPMG mining professionals who can help you raise your game.

KPMG firms operate in many countries and territories with a diverse range of needs. In each of these countries and territories, we have local teams that understand the mining industry's challenges, regulatory requirements and preferred practices. It is this local knowledge, supported and coordinated through KPMG's regional mining centers, that can help ensure mining clients consistently receive high-quality services and advice tailored to their specific challenges, conditions, regulations and markets.

In the mining industry, KPMG professionals understand current issues, provide attention to technical detail and are relentlessly driven to innovate.

We offer global connectivity through our 13 dedicated mining centers in key locations around the world, working together as a global organization to deliver commercially astute services across all aspects of a mining business's strategy — growth, performance, assurance, sustainability and integrated tax. Located in or near areas that traditionally have high levels of mining activity, we have centers in Melbourne, Brisbane, Perth, Rio de Janeiro, Santiago, Singapore, Toronto, Vancouver, Beijing, Johannesburg, London, Denver and Mumbai. These centers support mining companies around the world, helping them anticipate and meet their business challenges.

For more information, [visit home.kpmg/mining](https://home.kpmg/mining).



Methodology and acknowledgements

KPMG's Global Mining Outlook 2022 provides deep insights into the current views of 301 mining executives from around the world.

The latest research is part of KPMG's Global Mining Risk series, which offers a unique perspective into the evolving risks facing global mining organizations and the mining industry. In addition to this survey, which took place in January and February 2022, we also conducted qualitative interviews in March 2022. KPMG would like to thank the following individuals for their contributions:

- Ivan Mullany, Senior Vice President of Projects at Newmont Corporation
- Jeffrey (Jeff) Scott Parr, Vice Chair of Agnico Eagle Mines Limited

The January/February 2022 survey included leaders from 23 key markets (Argentina, Australia, Bolivia, Brazil, Canada, Chile, China, Colombia, Greece, Hong Kong (SAR), China, India, Japan, Luxemburg, Mexico, Norway, Panama, Peru, Portugal, Russia, South Africa, Sweden, the UK and the US) and three key mining sectors (producing mining companies, mining service providers, and exploration and development stage miners).

With special thanks to Lyndie Dragomir, Nicole Duke, Mark Hamilton, Michael Morihovitis, Stefano Moritsch, Zivanna Navarro, Julia Ralph and Wanda Woollett for their support of this work.

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Trevor leads KPMG’s global community of Mining Sector professionals. He has more than 30 years of experience working with mining company directors and executives.

He has extensive experience advising and auditing large multinational diversified mining companies, contractors, mid-cap single commodity producers and exploration companies across all metals and continents.

This experience and passion for the sector helps ensure Trevor stays at the forefront of industry developments, enabling KPMG to support its clients to leverage the opportunities and help to identify risks as they emerge.



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Katherine is a Partner in KPMG in Canada’s Risk Consulting practice and has specialized in the Energy and Natural Resources sector, servicing some of Canada’s largest mining companies. She has significant experience providing internal and external audit, risk and control services and accounting and transaction assistance to companies at all stages in the mining life cycle. Katherine has a deep understanding of internal control certification requirements, including both SOX and NI 52–109, and is also a Lean-in-Audit facilitator, assisting companies in applying Lean principles to enhance the efficiency and effectiveness of their processes through external and internal audits. Katherine focuses on helping companies identify risks and provide assurance on whether everything is operating as it should. In addition, Katherine has significant international experience and has visited over 10 mine sites on three continents.



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Nick has more than 25 years of experience working with global and domestic Energy and Natural Resources clients. His career started in Perth, Australia, and included a stint working in the UK before settling in Melbourne.

In his role as Transaction Services Partner, he has assisted numerous clients with acquisitions, disposals, IPOs, demergers, mergers, joint ventures and private equity leveraged investments. He has significant experience identifying and evaluating financial risks and opportunities, sizing synergies and integration evaluation, financial analysis, sales and purchase agreement (SPA) negotiation, working capital analysis and reporting publicly on forecast and pro forma financials in prospectuses.

His current work often centers on the pressing issues in the mining sector today, with its increased focus on environmental and community expectations, as well as innovation and technology to help drive continuous improvements in production, processing and sustainability.



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Manuel is KPMG's Energy and Natural Resources Sector leader in South America and the Americas Co-Leader. He is also responsible for the strategy and development of Clients & Markets in Rio de Janeiro and Espírito Santo. He started his career at KPMG in 1986 and since then has been providing audit and consulting services to international and Brazilian companies in different business segments. Manuel's leadership roles have included Brazilian Energy Leader, Rio de Janeiro Office Managing Partner, and member of the National Executive Committee for 12 years, where he served as Chairman of the Partners' Compensation Committee.



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Richard is Managing Director of Strategy at KPMG in the US, with more than 20 years of operations, strategy and deal experience. Richard specializes in large transformational change and cost reduction inside and outside of a deal environment. With his private and public corporate clients, Richard has led significant transformation programs across the globe to sustainably help reduce cost and increase margins through areas such as mine site optimization, processing optimization, organizational restructuring, supply chain optimization and back-office efficiency. In a deal setting, Richard supports his clients with operational due diligence and post-deal value creation. Richard has significant global experience leading programs in mining, infrastructure, rail, oil and gas, and private equity. Prior to consulting, Richard worked in the mining industry in Australia.

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