

Mining & metals 2021: Forces of transition and influencers of change

The mining & metals industry is critical to the success of the world's transition towards net zero, both in reducing its own carbon footprint and providing the materials that will deliver a cleaner and more sustainable future





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Mining & metals 2021: Forces of transition and influencers of change

The mining & metals sector is enjoying renewed global macro-economic prominence, with the minerals and metals it produces—and, increasingly, recycles—being critical to the success of the world's energy transition toward a low-carbon future.

The resilience of the sector and of commodity prices throughout the COVID-19 pandemic, coupled with growing investor and consumer excitement about energy transition materials, has lured generalist investors toward the sector for the first time in years, turning the tide on the ESG concerns and lackluster returns that had previously worked against generalist investor sentiment.

The ESG agenda has undoubtedly been a major driver of change in recent times, and the expectations bar is continuously being raised by investors, governments, communities, consumers and other stakeholders. There is tremendous opportunity for industry players to embed an ESG and low-carbon culture—capturing both risks and opportunities—into their corporate strategies in order to build stakeholder trust, focus on ESG/low-carbon-compatible business lines and generate truly sustainable growth.

In the lead-up to COP-26, in this Insight series from the White & Case Global Mining & Metals team, we examine some of the major forces of transition in the global mining & metals sector, digging into those people, products, policies and institutions that are at the forefront of influencing change in our sector.



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Taking ESG seriously: The crucial role of mining investors in the energy transition

Taking ESG matters seriously improves business performance; ESG best practice must become integral to the business and should be a “given” in any mining project as White & Case partners **Kamran Ahmad** and **Rebecca Campbell** explain.

In November, world leaders, policy makers and climate scientists meet in Glasgow for the UN Climate Change Conference (COP26) in the wake of the landmark *Intergovernmental Panel on Climate Change (IPCC)* report published in August 2021.

The *IPCC* report, a “code red for humanity” according to the UN Secretary General, contains stark warnings and a call on the international community to do more in response to climate change.

Given the sobering assessment of the *IPCC*, the pressure to agree coordinated measures to mitigate climate change is expected to grow at COP26 and beyond.

Lenders to, and investors in, mining projects will play a crucial role in the energy transition through providing the capital that is required to mine the minerals that will drive the transition to net-zero. The mining sector is already familiar with the challenges presented by increasingly urgent carbon reduction targets and the opportunities arising from the mining of minerals required to deliver the clean energy transition.

However, unlike commodity booms of old, there will be no race to the bottom on environmental, social and governance (ESG) or sustainability considerations. To be bankable, these mine development projects will need to take into

account ESG and sustainability best practice at every stage, from inception to mine decommissioning, and throughout the supply chain.

Energy transition driving demand for minerals

Over the past decade, wind and solar power have become among the cheapest sources of energy. The cost of lithium-ion batteries has dropped by more than 80 percent in the same period. Battery storage deployment has increased fivefold since 2017, meaning renewable sources of energy can transition from variable and intermittent sources of power to baseload.

In addition, the size and capacity of wind turbines, solar farms and battery storage have all increased dramatically over recent years. These developments mean battery storage and wind and solar farms will consume ever-greater quantities of minerals.

The World Bank has estimated more than three billion tonnes of minerals and metals will be needed to deploy sufficient renewable power and energy storage, required to keep the rise in mean global temperatures to below 2°C above pre-industrial levels, consistent with the 2015 Paris Agreement.



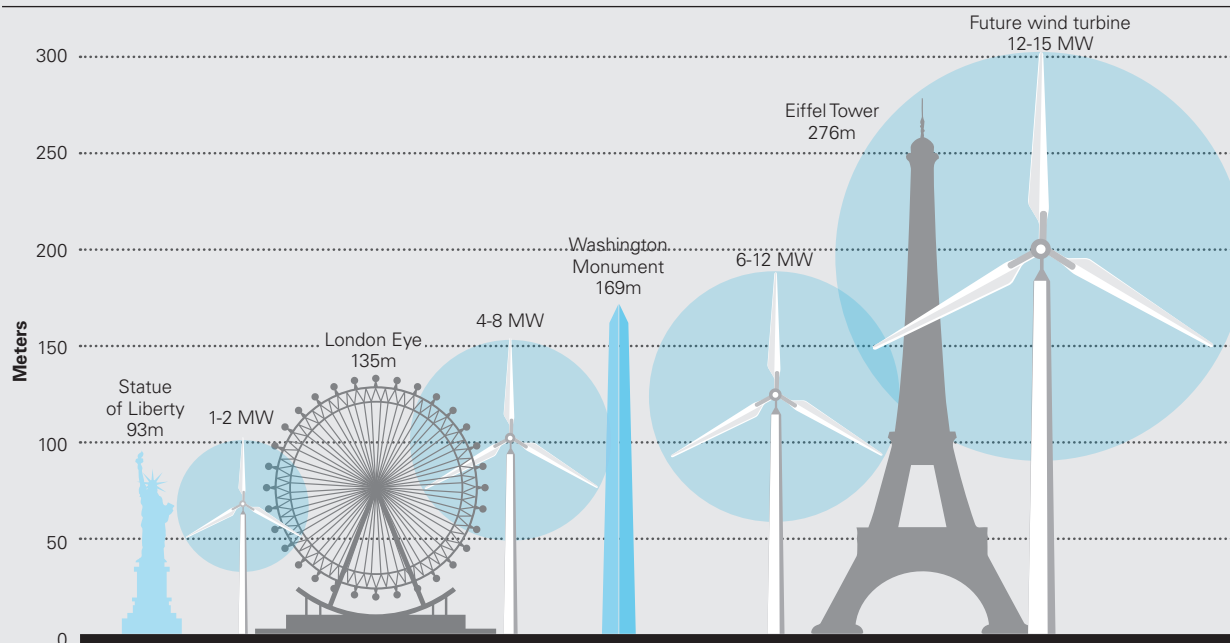
965%

Global production of lithium is projected to rise by 965% by 2050



Lenders and investors will play a crucial role in the energy transition by providing capital to mine the minerals that will drive the transition to net-zero, but these projects will need to be bankable, and be ESG-focused

Evolution of the wind turbine



Source: Power Technology

Global production of critical minerals used in technologies essential to a low-carbon future is projected to rise by 965 percent for lithium, 585 percent for cobalt, 383 percent for graphite, 241 percent for indium and 173 percent for vanadium by 2050.

This demand will be driven by the requirements of each specific clean energy technology. For example, copper and molybdenum are used in a range of technologies, while other minerals such as graphite and lithium may be required only for battery storage applications. As a result, technological change and the uptake of clean technologies will have a significant influence on mineral consumption and demand.

The effect of the energy transition and ESG considerations in influencing mineral demand and as a catalyst for technological advances cannot be overlooked. Given that 70 percent of cobalt is currently mined in the Democratic Republic of the Congo, the presence of cobalt in supply

chains has become a matter of concern for many end-users. These concerns have in turn driven the desire to find alternative sources of cobalt as well as searching for technological advances to reduce the use of cobalt in batteries.

Recycling and reuse of minerals will have to play an increasingly important role in meeting demand for many energy transition minerals, but this alone will not be sufficient to supply renewable energy technologies and energy storage needs.

In the battery sector alone, battery waste is forecast to be between one to four million tons per year globally by 2030. Since the supply chain for battery waste recycling is still in its infancy, what happens to a battery at the end of its working life should be a particular area of focus from an ESG and sustainability perspective. The same holds true in the case of other minerals that are deployed in clean and renewable technologies.

ESG and sustainability critical to a project's bankability

The unprecedented demand for energy transition minerals needs careful consideration from an ESG and sustainability perspective. Mining companies routinely identify ESG and sustainability issues, including environmental risks, community relations and their social license to operate, as some of the most important challenges they face.

Ensuring that borrowers have taken appropriate ESG and sustainability considerations into account has become a priority for many mining investors as well as financiers across the spectrum—from export credit agencies, development finance institutions and commercial lenders, through to stream and royalty financiers.

Research shows that after successful implementation of ESG and sustainability initiatives, mining companies become more attractive to investors and financiers alike.

For example, consultancy firm Bain recently analyzed Rabobank's commercial loan portfolio and found a substantially lower credit risk among companies that performed well against ESG criteria. Particularly noteworthy was the conclusion that borrowers with low-ESG performance were twice as likely to be in arrears as the high-ESG performers, all else being equal. Bain attributed this to management decisions that emphasize long-term financial stability and sustainability when allocating resources.

Practical implications for the financing of mining projects

ESG and sustainability considerations in mining finance have evolved rapidly in recent years, and are now an integral feature of every deal. In corporate and leveraged lending, ESG and sustainability considerations were introduced through the development of standalone green loan and sustainability-linked loan products.



**3
billion
tonnes**

The World Bank estimates more than three billion tonnes of minerals and metals will be needed to deploy sufficient renewable power and energy storage to keep the rise in mean global temperatures to below 2°C above pre-industrial levels

However, mining project financiers have for many years imposed project-specific environmental and social covenants on their borrowers, including environmental social impact assessments and environmental social action plans (ESAPs).

While mining financiers are attuned to environmental and social considerations in their lending decision-making, as other lending disciplines have evolved their own approaches towards ESG and sustainability matters, there are a number of developing trends.

In addition to traditional environmental and social reporting covenants, enhanced ESG and sustainability reporting are becoming standard provisions in loan documentation, particularly in relation to lenders' own internal ESG policy requirements. Non-traditional, but sophisticated, mining finance providers are also embedding ESG covenants and sustainability reporting in their deals.

Satisfaction with a financier's internal ESG and sustainability reporting requirements is, on some deals, becoming a discrete compliance requirement. For example, in the context of a change of control, a permitted transferee may be subject to conditions relating to compliance with lender ESG requirements.

The appointment of a lender to take on an ESG or sustainability coordinator role may also emerge in mining finance deals.

There is a growing body of evidence to demonstrate that taking ESG matters seriously improves business performance; ESG best practice must become integral to the business and should be a "given".

Critically, the secular push for green energy and electrification has seen copper prices rise to their highest levels in years, while the demand for battery metals continues to surge. As billionaire mining investor Robert Friedland put it: "Forget the 'super-cycle', this is bigger".

Mineral production and 2050 projected annual demand from energy technologies (in tons, thousands)

Mineral	2018	2019	2020e	2050 projected annual demand from energy technologies	2050 projected annual demand from energy technologies as percentage of 2018 annual production
Aluminum	60,000	63,200	65,200	5,583	9%
Chromium	36,000	44,800	40,000	366	1%
Cobalt	140	144	140	644	460%
Copper	21,000	20,400	20,000	1,378	7%
Graphite	930	1,100	1,100	4,590	494%
Indium	0.75	0.968	0.9	173	231%
Iron	1,200,000	1,520,000	1,500,000	7,584	1%
Lead	4,400	4,720	4,400	781	18%
Lithium	85	86	82	415	488%
Manganese	18,000	19,600	18,500	694	4%
Molybdenum	300	294	300	33	11%
Nickel	2,300	2,610	2,500	2,268	99%
Silver	27	26.5	25	15	56%
Titanium	6,100	8,400	8,200	3	0%
Vanadium	73	86.8	86	138	189%

Source: Data for annual production sourced from the US Geological Survey

Evolving trade and competition regulation in the push for green metals

The metals sector is an attractive target for decarbonization due to the energy-intensive nature of traditional production processes. White & Case partners **David Bond**, **James Killick** and senior trade analyst **Brian Picone** discuss some of the new rules for cross-border trade in metals, as governments around the world are turning to sustainable production practices.

Carbon: the next frontier of commodities trade tensions

Governments around the world are prioritizing the decarbonization of the metals sector, and in particular steel and aluminum production, in their efforts to combat climate change.

The metals sector is an attractive target for decarbonization due to the energy-intensive nature of traditional production processes; the widespread use of metals in infrastructure, manufacturing and consumer applications; and the importance of metals such as copper for renewable energy generation.

Although domestic policies will play an important role in facilitating the transition, the prevalence of cross-border trade in metals has prompted some governments to propose new rules aimed at promoting sustainable production practices. The most significant proposal is the EU's Carbon Border Adjustment Mechanism (CBAM), which would impose a levy on imports in carbon-intensive sectors such as steel, aluminum, cement and fertilizers from countries with lower environmental standards than the EU.

Similar proposals are gaining momentum in the US Congress, as lawmakers contemplate new measures to limit carbon emissions, and President Joe Biden has expressed support for carbon border



**624m
tons**

Estimated global excess production capacity for steel, about one-quarter of global capacity

adjustments on several occasions. Such measures may help to combat climate change, but they are also likely to generate trade disputes, and could lead to retaliatory actions extending beyond the metals sector.

Overcapacity and the transition to green production practices

The push for more sustainable production in the metals sector comes at a time of heightened trade tensions, particularly in the steel and aluminum industries. These tensions stem largely from the chronic problem of global excess production capacity and its dampening effect on industry profitability; the EU recently estimated global excess production capacity at 624 million tons for steel, or about one-quarter of global capacity.

Having made little progress toward curtailing subsidies and other policies that contribute to overcapacity, the world's major steel and aluminum markets have increasingly resorted to import restrictions to protect their domestic industries. These include antidumping and countervailing duties, used heavily by the US and the EU in particular; safeguard measures, employed by the EU, the UK and Canada, among others; and blanket tariffs and quotas imposed by the US under Section 232 of the

Trade Expansion Act.

Even with these measures in place, overcapacity reduces the attractiveness of investments in new manufacturing facilities that have less carbon-intensive production methods.

Curtailing industrial overcapacity is a longstanding priority of many governments, including those of the US and the EU, which have pledged to develop solutions to the problem this year as part of their "renewed transatlantic partnership" under the Biden administration.

Progress on overcapacity would help ease the transition to more sustainable steel and aluminum production, but it is unlikely to come quickly given the apparent reluctance of major producing countries such as China to engage on the issue. In the meantime, some governments see an urgent need to accelerate the transition to less carbon-intensive production methods, and to prevent the "carbon leakage" that could occur where domestic policies to reduce emissions encourage the outsourcing of production to jurisdictions with less ambitious climate policies.

Enter the CBAM

Preventing carbon leakage and promoting cleaner production abroad are the stated objectives of the

new Carbon Border Adjustment Mechanism (CBAM) proposed by the European Commission. The CBAM is intended to impose a charge on carbon-intensive imports such as cement, iron and steel, aluminum, fertilizers and electricity, that corresponds with the charges imposed on EU domestic industry under the EU's Emissions Trading System (ETS).

The ETS requires domestic producers in certain carbon-intensive sectors to surrender a number of allowances annually to cover their emissions. Similarly, the CBAM would require importers to purchase annual "CBAM certificates" to cover the emissions embedded in their imports. The price of the certificates would be linked to the price of permits under the ETS.

Importantly, the CBAM would take into account the methods used to produce the imported goods as well as carbon pricing policies in the country of origin. The amount of CBAM certificates required would be based on actual emissions at the installations from which imported goods originate—unless these cannot be adequately determined—and importers would be permitted to claim a reduction in the number of required CBAM certificates to account for a carbon price paid in the country of origin.

The CBAM would take effect in 2026, following a three-year transition period during which it would only require importers to report the level of emissions embedded in their imports. The CBAM would also phase out the free emissions allowances currently provided to EU producers of steel, aluminum, and other goods under the ETS, and would reduce accordingly the amount of CBAM certificates that importers must purchase during this period.

The CBAM's effects on specific industries will depend on trade flows, the climate policies of the EU's trading partners and the emissions intensity of production practices, which can vary widely among countries and producers.

In the steel industry, Russia,



Curtailing industrial overcapacity is a longstanding priority of many governments, including those of the US and the EU



2026

The new Carbon Border Adjustment Mechanism (CBAM) proposed by the European Commission will take effect in 2026, following a three-year transition period

China and India are likely to face the greatest adverse impacts from the CBAM, as they are among the largest exporters to the EU of the covered products, lack a national carbon price and have relatively emissions-intensive production practices. Turkish and US producers could see smaller impacts due to their lower carbon footprints.

In the aluminum industry, EU producers expect that the existence of low-carbon production in major exporting countries, namely China and Russia, will greatly limit the CBAM's impact. They expect the CBAM will encourage "resource shuffling," where these countries redirect their low-carbon aluminum products to the EU market and send higher-carbon products elsewhere, with little overall impact on carbon and investment leakage.

The Commission has indicated that it will consider expanding the CBAM's scope to include "more products and services" as well as "indirect emissions" generated through the electricity, heating and cooling used during the production process.

Future expansions of the CBAM's scope could cover copper and zinc production, which the Commission has previously identified as at risk of carbon leakage, as well as production of nickel and silicon, all of which are electro-intensive.

Representatives of these industries have expressed concern that the CBAM as designed would disadvantage European producers regardless of their carbon footprint, as it would not fully account for the costs that even low-carbon producers face as a result of Europe's marginal pricing system

for electricity.

The Commission has said it believes the proposed CBAM is fully compliant with World Trade Organization (WTO) rules, but this claim is likely to be closely studied by adversely affected trading partners. Initial estimates suggest that its effects on trade flows from highly exposed countries such as Russia could be significant, potentially generating political pressure for retaliatory actions. Some governments have already accused the EU of developing the CBAM with protectionist intent.

The effects of the CBAM on the US are expected to be modest, as it is a relatively small exporter of the covered products to the EU and the emissions intensity of the US steel sector is comparable to that of the EU.

Although the Biden administration has expressed some reservations about the CBAM, it recognizes that governments seeking to limit emissions have a "legitimate interest" in preventing carbon leakage, and has made clear that it intends to impose fees on carbon-intensive imports as it ramps up domestic regulation of carbon emissions.

The US approach

Proposals to establish a domestic price on carbon emissions face significant opposition in the US Congress, and this is a key factor in the current US policy debate on climate change and carbon border adjustments. Given this obstacle, the Biden administration has not proposed a domestic carbon price, and instead has prioritized regulatory approaches to reduce emissions.

At the same time, the administration has continued to express support for carbon border adjustments, prompting speculation that it may pursue a border adjustment that is not linked to a domestic carbon price. There could be an attempt to quantify the compliance burden that US manufacturers in specific sectors face as a result of non-price policies that constrain carbon emissions, and then assigning an equivalent fee to imports.

A border adjustment based on regulatory costs could prove even more controversial than the CBAM, particularly given the difficulty of reliably quantifying such costs. However, this approach appears to be gaining momentum.



July 14 2021

In the US, the budget plan unveiled by Senate Democrats on July 14 envisions a new “polluter import fee” alongside domestic regulations to reduce emissions

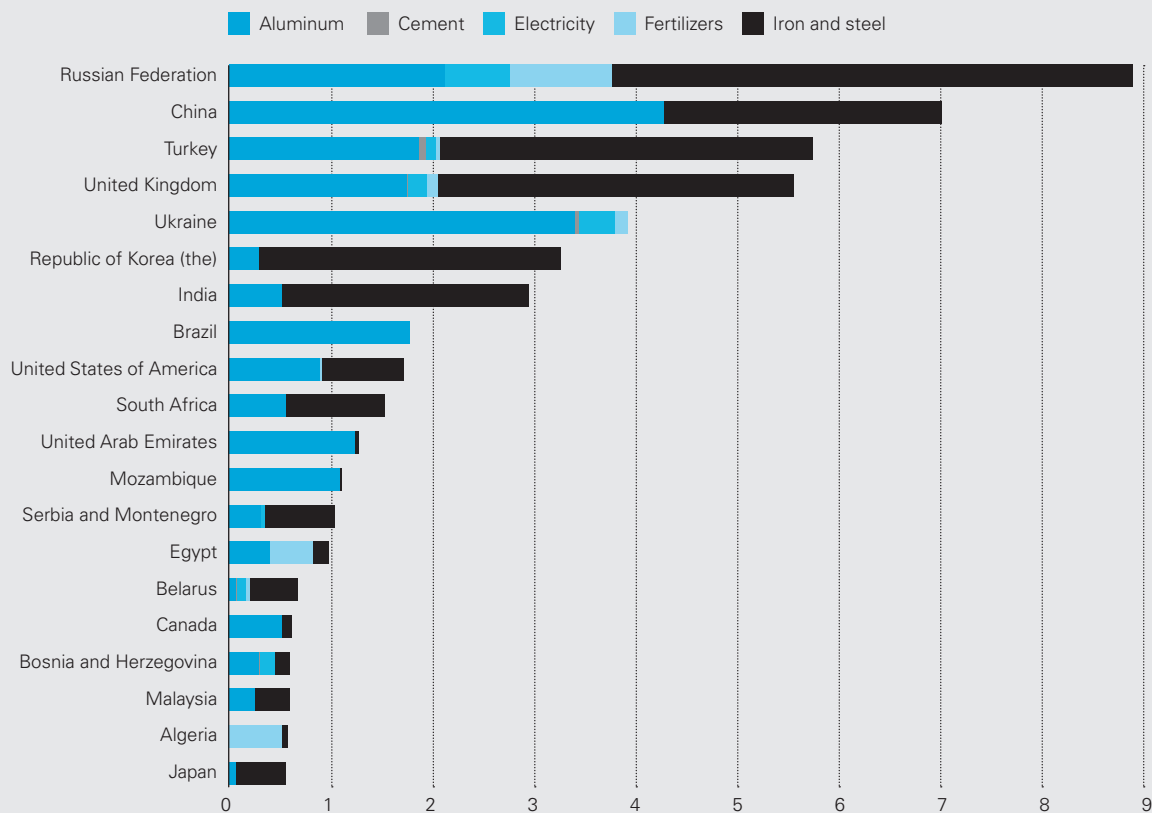
On July 19, 2021, Democratic Senator Chris Coons and Representative Scott Peters introduced legislation—reportedly developed in consultation with the US Trade Representative—that would impose a carbon fee on imports of iron, steel, aluminum, cement and fossil fuels, and would base the amount of the fee on the costs that domestic producers incur to comply with any national or local law, regulation or program designed to reduce emissions.

The budget plan unveiled by Senate Democrats on July 14 appears to endorse this approach, as it envisions a new “polluter import fee” alongside domestic regulations to reduce emissions, but does not propose a domestic carbon price.

Senators supportive of these efforts have characterized them as necessary to protect the US manufacturing sector from foreign competition, particularly with China, which may fuel perceptions that the policy is motivated at least in part by protectionist goals.

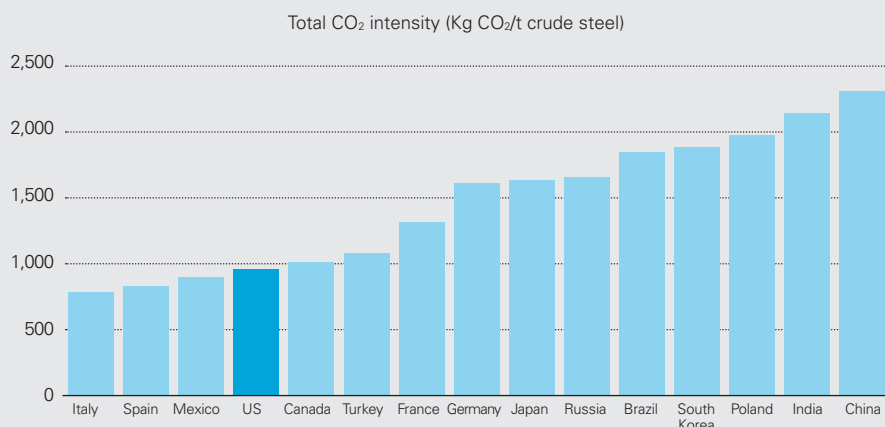
In addition to carbon border adjustments, US policymakers are increasingly seeking to incorporate climate objectives into US trade laws and agreements in ways that may exacerbate trade tensions. In June, the Biden administration said it was considering whether the Paris Agreement on climate change should be added to the list of environmental agreements enforceable through the US-Mexico-Canada Agreement.

Exports to the European Union 2019 in selected sectors likely to be considered in the CBAM. 20 most-exposed countries in terms of aggregated value of exports (billion US\$)



Source: UNCTAD based on UN COMTRADE. The list does not include Iceland, Norway and Switzerland because they participate in, or are linked to, the ETS. Therefore, it is likely that these countries are exempt from the mechanism.

Total CO₂ emissions intensity of the steel industry in the studied countries in 2016



Source: Global Efficiency Intelligence benchmarking report

This demand is likely to resurface in future US trade negotiations, and could lead to sanctions if a country fails to uphold its Paris commitments. The US has also tried to incorporate environmental concerns more squarely into the trade remedies regime, of which the metals sector is a major user, by proposing changes to WTO rules that would make a government's failure to enforce environmental laws an actionable subsidy subject to countervailing duties.

Outlook

Whatever their environmental merits, the recent policy proposals from the US and the EU have the potential to disrupt trade flows and generate trade disputes if implemented. This is clear from initial reactions to the CBAM, which Brazil, South Africa, India and China have criticized as a "discriminatory" trade barrier that deviates from the principle of "common but differentiated responsibilities" enshrined in the UN Framework Convention on Climate Change.

China has alleged that the CBAM violates WTO rules. Adversely affected countries may challenge climate-related trade measures through WTO or free trade

agreement dispute settlement mechanisms, and could obtain the right to impose retaliatory tariffs if the measures are found to be inconsistent with trade rules. Such measures often target politically sensitive goods that are unrelated to the underlying dispute, such as agricultural products.

Governments might also retaliate in less overt ways, for example by initiating antidumping or countervailing duty investigations of politically sensitive exports from countries that adopt climate-related trade measures.

Frictions over climate-related trade measures are likely to be most pronounced between developed and developing countries. However, tensions might emerge even among developed economies that share similar levels of ambition on climate change, given potential differences in approach and implementation.

Recognizing these potential trade frictions, some leaders have suggested a multilateral agreement for a global minimum price on carbon emissions, which could make unilateral border adjustment unnecessary. However, the prospects for such an agreement currently appear poor.



COP26

The UK will host the 26th UN Climate Change Conference of the Parties (COP26) in Glasgow October 31 to November 12, 2021

The proliferation of unilateral border adjustment measures also threatens to reignite longstanding tensions in broader multilateral negotiations on climate change. Developing countries have long sought to pre-empt such measures, most notably at the 18th UN Climate Change Conference (COP18) in 2012, when they unsuccessfully sought a commitment from developed countries not to resort to unilateral measures against developing countries on climate-change-related grounds.

Now, major developing countries plan to reiterate their opposition to carbon border adjustments this November at COP26 in Glasgow. Environmental advocates have warned that tensions over this issue will make it more difficult to secure the ambitious climate pledges that large developed countries are being asked to undertake at COP26.

Complicating matters, climate negotiators have historically been reluctant to discuss whether and to what extent trade restrictions might constitute appropriate climate response measures, due in part to uncertainty as to whose jurisdiction this issue falls within.

Unless this jurisdictional issue is resolved, it appears increasingly likely that decisions regarding the permissibility of specific climate-related trade measures will be left to the WTO's dispute settlement system—potentially placing the WTO on a collision course with the climate agenda.

In a best-case scenario, COP26 might produce a consensus on the proper forum for countries to deliberate the appropriateness of climate-related trade restrictions, and how these can be squared with the core WTO principles of trade liberalization and non-discrimination.

Nevertheless, it appears doubtful that governments seeking to impose carbon border adjustments will put their plans on hold while multilateral negotiations take place. Businesses should begin preparing for trade disruptions as governments resort to unilateral action to address the issue.

China's pursuit of mining & metals industry transition

China's mining sector is taking active measures to pursue industry transition and achieve a low-carbon production plan. White & Case partners **John Tivey, David Li** and associate **Xuefeng Wu** discuss what steps some of the biggest players in the Chinese metals market are taking to cut emissions.

China's decarbonization and quest for green metals

China has set a national target to achieve carbon peaking by 2030 and carbon neutrality by 2060, prompting an active push by the country's mining sector to pursue industry transition and achieve a low-carbon production plan.

At the same time, a drive to ensure the continued supply of critical metals for the next stage of China's development continues unabated.

In March 2021, China rolled out its 14th Five-Year Plan (FYP) (2021–2025) for National Economic and Social Development and the Long-Range Objectives Through the Year 2035. The 14th FYP affirms the national targets of carbon peaking by 2030 and carbon neutralization by 2060, as announced by President Xi Jinping at a UN summit on climate change in December 2020.

To achieve the goal, the 14th FYP calls for greater development of clean energy including wind power, photovoltaic, hydropower and nuclear power, structural reform and elimination of outdated capacity in high-energy-consuming industries such as steel, petrochemical and chemical. The 14th FYP also asks key industries and key enterprises to take the lead in reaching carbon peaking.

Industry action

In April 2021, the China Nonferrous Metals Industry Association (CNMIA) released a draft carbon



Energy structure optimization through increased usage of renewable energy is a growing trend across the mining sector in China

peaking implementation plan for the nonferrous industry for comments. The plan targets 2025 for carbon peaking for the industry, five years earlier than the national target.

CNMIA anticipates the reduction from aluminum and steel-making sectors will underpin the meeting of the targets. The Aluminium Corporation of China (Chinalco), which is the second-largest alumina producer and third-largest aluminum producer globally, announced a plan to reduce carbon emissions by 40 percent by 2035 and reach peak emissions before 2025.

Baowu Steel, one of the world's largest steel producers, is aiming for carbon peaking in 2023 and carbon neutrality by 2050.

Across the mining sector, energy structure optimization through increasing the usage of renewable energy is a growing trend. According to Chinalco, approximately 50 percent of its total electrolytic aluminum products in 2020 were already produced with green energy.

Chinalco is also intensifying an

effort to shut down aged production lines and reduce pollutant emission and waste disposal across its plants in China, having achieved an annual decrease of 10.92 percent and 67.06 percent respectively in terms of sulphur dioxide and nitrogen oxide emissions.

As part of the overall effort in meeting the national target and rebalancing the economy from the impact of COVID-19, in the first five months of 2021, China raised green bonds with a total value of US\$26.1 billion to support clean and renewable energy projects. This was more than double the value of the same period in 2020, according to financial data provider Refinitiv.

Chinese miners are taking full advantage. In April, Zijin Mining Group issued the first carbon neutralization bond among China's precious metal miners and pledged to use the US\$46 million in proceeds on photovoltaic power facilities.

Chinalco followed suit in June by issuing a US\$62 million green bond to support its wind power



**March
2021**

China rolled out its
14th Five-Year Plan

projects. In July, China Molybdenum Co (CMOC) issued a US\$23 million green bond to finance the upgrading of existing facilities to lower the emission.

Increasing the recycling and utilization of scrap metal is another key focus. According to CNMIA, China has consumed 700 million tons of non-ferrous metal since the 1950s, and metal scrapping has now entered a peak period.

CNMIA expects that in 2025 the output from metal recycling alone will reach 20 million tons—including 4 million tons of recycled copper, 11.5 million tons of recycled aluminum, 3 million tons of recycled lead and 1.5 million tons of recycled zinc—which will further contribute to the carbon-reduction goal and help to meet the market demand.

It is widely expected that the aluminum smelting and steel sectors will be included in the national carbon emissions trading scheme (ETS) in the 14th FYP period, further improving the implementation and tracking of the emission reduction efforts in these sectors.

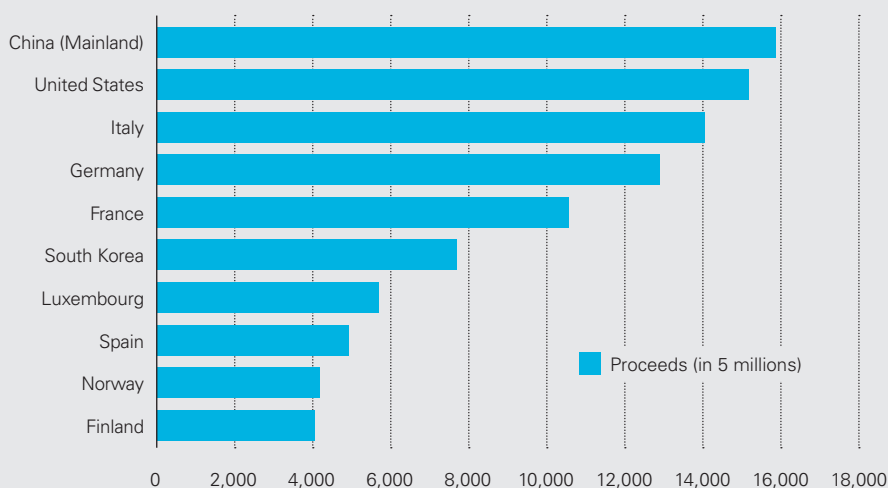
The Chinese ETS was officially rolled out in July 2021 and currently targets power generation as the “breakthrough sector.” According to the Ministry of Ecology and Environment, the power plants admitted in the scheme emit more than 40 billion tons of carbon dioxide in aggregate, making the Chinese ETS the largest carbon-trading market in the world by volume.

Push to secure “green metals”

In October 2020, China’s State Council published a development plan for the new energy vehicle industry (2021–2035), targeting a 20 percent market share for new energy vehicles by 2025, and for electric vehicles to account for the majority of new sales by 2035.

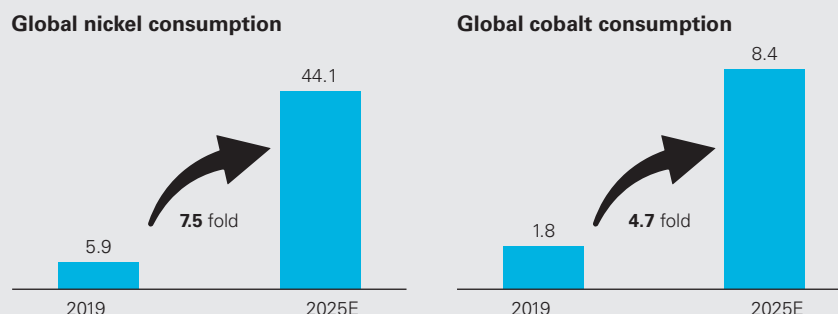
The 14th FYP also lists new energy vehicles as one of the “strategic new industries.” In 2020, Chinese companies led by Contemporary Amperex Technology Co. accounted for six of the top-ten electric vehicle battery makers globally.

Golden green bond issuance in Q1 2021



Source: Refinitiv Eikon/Patturaja Murugaboopathy

EV battery – Global consumption (00000 tons)



Source: Antike & Citic Securities

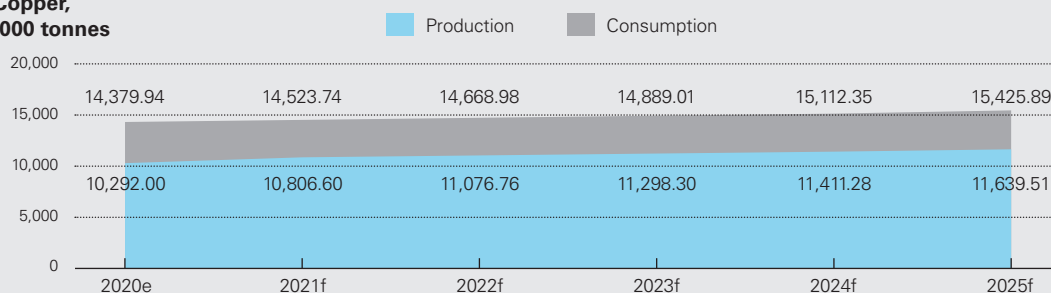
Major Chinese players with overseas investment in EV metals

Metal	Key players	Countries
Lithium	Ganfeng Lithium, Tianqi Lithium, Tibet Summit Resources	Argentina, Australia, Chile
Nickel	CATL, CMOC, Huayou Cobalt, JNMC, Lygend Mining, MMG/MCC, TSINGSHAN	Indonesia, Papua New Guinea
Cobalt	CNMC, CMOC, Hanrui Cobalt, Huayou Cobalt, Wanbao Mining	DRC

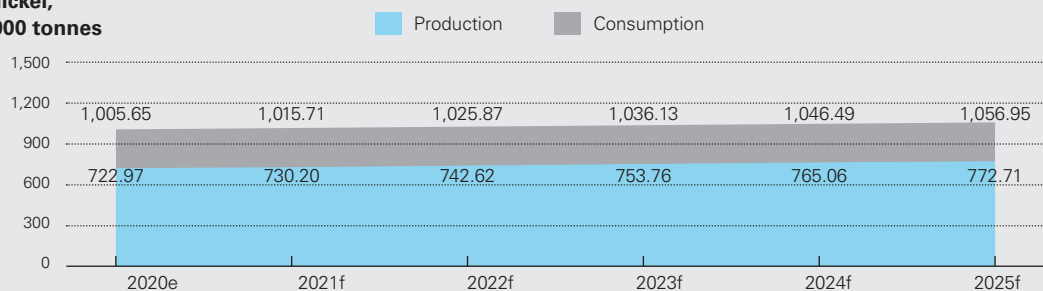
Source: White & Case

Selected mineral and metals forecasts (China 2020 – 2025)

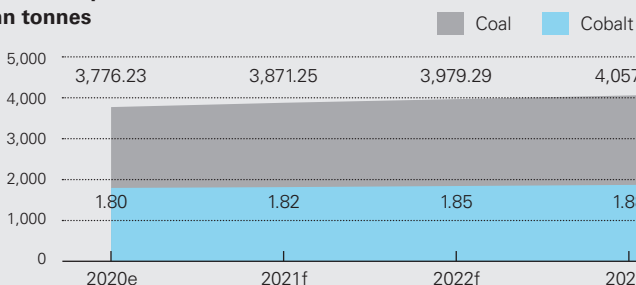
Copper, '000 tonnes



Nickel, '000 tonnes



Coal mine production, mn tonnes



Cobalt mine production, '000 tonnes

Source: China's 14th Five-Year Plan report, April 2021



“Green metals,” including copper, nickel, lithium, cobalt and rare earth metals, will be in high demand in China’s push to meet carbon-neutrality targets

As with the trend globally, “green metals,” including copper, nickel, lithium, cobalt and rare earth metals, will be in high demand in China’s push to meet carbon-neutrality targets and the rapid development in sectors such as new energy vehicle, photovoltaics and wind power.

Other than rare earth, China’s demand for imports of other critical metals in the next decade remains high and will be increasingly met by production in the countries that Chinese mining companies invest in, particularly those that are part of the “Belt and Road” infrastructure development strategy.

New technology driving ambition

At a time when low carbon is the codeword for sustainable mining practice and green metals are in high demand, the new generation of Chinese miners are making an effort to stay ahead of the curve.

In May 2021, the world-class



**US\$26.1
billion**

China raised green bonds with a total value of US\$26.1 billion in the first five months of 2021 to support clean and renewable energy projects

Kamoa-Kakula copper mine in the DRC achieved the first production with the backing of Chinese and Canadian shareholders including Zijin Mining, Ivanhoe Mines and Citic Metals. Kamoa-Kakula will be the second-largest copper mine globally at its peak production (800,000 tons of copper metal-equivalent per year).

With the operation being powered by hydro-generated electricity and the proposed introduction of mining equipment supported by electric batteries, Kamoa-Kakula is expected to be one of the lowest-carbon emitters among the top-tier copper mines in the world.

Also in May, Lygend Mining began the trial operation of its OBI integrated nickel operation in Indonesia—with a nameplate capacity of 60,000 tons of nickel metal-equivalent. The operation uses the high-pressure acid leaching technology (HPAL) that was first applied by a Chinese company at Ramu nickel mine in Papua New Guinea.

The Ramu mine has been in operation since 2012 and achieved the lowest greenhouse gas intensity compared to other global HPAL operations and nickel laterite refining operations, according to the results from a recent third-party certification.

As another testament to Chinese companies’ growth ambitions, CMOC recently announced the expansion of the Tenke Fungurume copper and cobalt mine in the Democratic Republic of the Congo, which, coupled with the development of the adjacent Kisanfu cobalt asset, would significantly increase its cobalt output and potentially make CMOC the biggest cobalt producer globally.

These moves by some of the biggest players in the Chinese metals market could prove crucial to China’s aims of achieving carbon neutrality, and send a strong message to the wider global industry about what can be done in this sector to cut emissions.



A new wave of resource nationalism in the mining & metals industry

As governments around the world are pursuing revised mining fiscal policies and more aggressive enforcement, investors need to prepare themselves for an active period of resource nationalism. White & Case partners **Damien Nyer**, **Silvia Marchili** and associate **Taha Wiheba** highlight some of the notable trends.

Analysts are predicting the advent of a new commodity super-cycle, powered by the economic recovery and the energy transition narrative. The mining & metals industry may be facing a renewed period of intense resource nationalism.

Facing gaping budget deficits in the wake of the COVID-19 pandemic, and stoked by soaring commodity prices, resource-rich countries are bound to demand more from investors in the sector. In fact, 2021 has already seen a flurry of proposed and actual fiscal measures, with governments around the world pursuing revised mining fiscal policies and more aggressive enforcement.

The factors supporting this trend show no sign of abating in the near term. For governments, the challenge will be to develop a sustainable fiscal regime that will help increase revenues when prices are high without discouraging investment in the sector, investors, for their part, need to prepare themselves for an active period of resource nationalism.

A predictable trend

The current trend is the result of the conjunction of two powerful factors.

The first factor is the upswing in commodity prices. Relative to

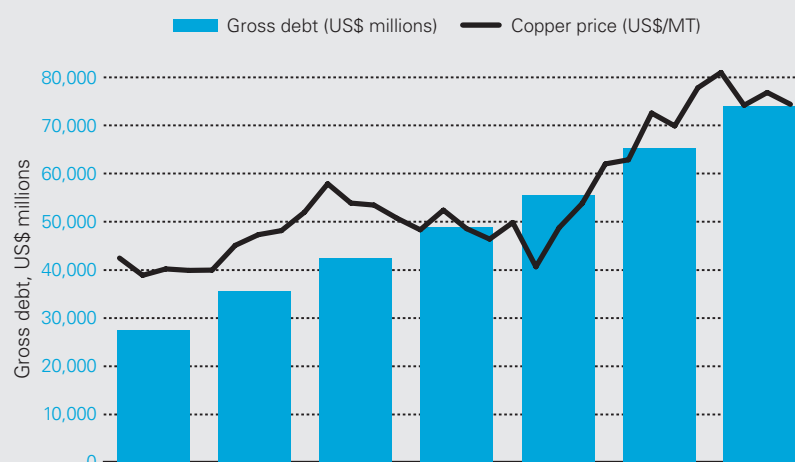
most sectors, the mining industry has weathered the global economic downturn well. Commodity prices—especially copper, iron ore, silver and gold—have either remained high or increased dramatically.

The recession brought about by the pandemic drove gold prices to new heights, although the market has since softened. Industrial metals have been buoyed by government stimulus and deficit and infrastructure spending. Critically, the push for green energy and electrification

has seen copper prices rise to their highest levels in years, while the demand for battery metals such as nickel, lithium and cobalt has surged.

The second powerful factor supporting the current trend is the fiscal crunch that many countries are facing. While governments typically respond to rising commodities prices with increased taxes, the case for increased taxation today is more pressing, as governments across the world have abandoned fiscal caution and spent

Chilean gross debt v. copper price, 2015 – 2021



Source: Bloomberg

freely to support their economies.

The result is predictable. With the prices of some commodities cyclically high, cash-strapped governments are bound to demand, in one way or another, a larger share of mineral wealth. The signs of an emerging wave of resource nationalism are already clear.

Cashing in on copper

The copper-producing nations in Latin America are at the forefront of this trend. On May 6, 2021, Chile's Chamber of Deputies, the lower house of Congress, passed a bill to introduce a new royalty on copper and lithium sales.

Chile currently taxes most mining operations on a flat-fee basis, under agreements that are due to expire in 2023. The new bill proposes a 3 percent base rate royalty. For copper, a windfall profit tax would begin at marginal rates of 15 percent of sales priced at US\$2 to US\$2.5 per lb, rising to 75 percent of additional income on sales of more than US\$4 per lb.

It is estimated that investors would face a tax burden of



Countries across the world are asserting new fiscal demands on investors in the mining sector



In Chile, investors could face a tax burden of 82 percent in royalties and taxes under the proposed bill on sales exceeding 12,000 tons annually of copper and 50,000 tons per year of lithium, up from 40.3 percent.

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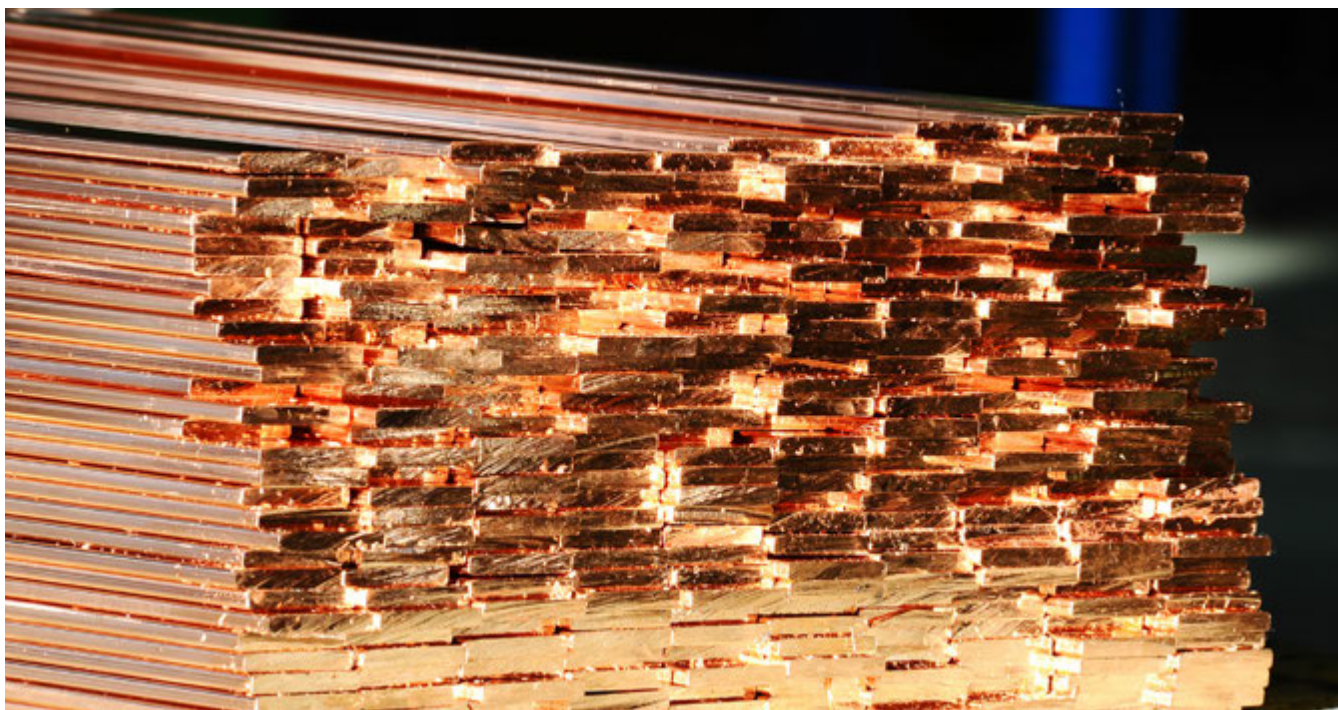
According to the president of industry body Sonami, Diego Hernández, the new legislation would force 12 of the 15 biggest miners in Chile to operate at a loss. While the bill is yet to be approved in the Senate, some companies already appear to be reassessing their investment decisions.

For example, Lundin Mining, which operates one of the largest copper mines in Chile, is reportedly reconsidering its plans for a US\$600 million expansion of its

Candelaria mining complex in favor of a project in Argentina.

The Chilean developments have been echoed by other governments across the region. In June 2021, Peruvians elected the leader of the left-wing Free Peru party, Pedro Castillo, as president. As a candidate, Castillo endorsed plans to impose increased taxes on mining profits, drawing inspiration from Chile. Although Castillo said he did not intend to nationalize mining projects, he made clear that he would seek to tax mineral profits to fund social spending.

Some in the industry hope the new government will moderate its positions in office, but the global



trend towards more aggressive fiscal policies is reason for caution.

A raft of regulatory reforms

The trend is not limited to Latin America. From Burkina Faso to Zambia, and from Mongolia to the Philippines, countries across Africa and Asia-Pacific are asserting new fiscal demands on investors in the mining sector. These have taken the form of proposed windfall and profit taxes, higher excise taxes and stepped-up royalty rates, or simply more aggressive enforcement.

On May 13, 2021, Madagascar's mining minister, Fidiniavo Ravokatra, renewed his push for an overhaul of the country's mining code. Key proposed provisions include increased royalties—from 2 percent to 4 percent for base metals, gold and silver, and up to 8 percent for raw precious stones and raw fine gemstones—and the allocation of 20 percent of mining production to the state.

While the industry has been vocal in its opposition and the move was previously opposed by the presidency, the divergence between commodity prices and fiscal revenues is fueling the case for reform.

Many measures have been passed at a local level. In Brazil, while the federal government is considering raising taxes on the mining sector, in April 2021, the northern state of Pará instituted an increased tariff on iron ore, copper, manganese and nickel production.

The trend is not limited to emerging markets. On June 1, 2021, the US state of Nevada approved a proposal to add a 0.75 percent excise tax on gold and silver miners reporting gross revenue of between US\$20 million and US\$150 million, and a 1.1 percent tax on those grossing any higher.

In many jurisdictions, investors are also facing stepped-up enforcement of existing tax legislation. In May 2021, the Democratic Republic of the Congo announced it would clamp down on companies that it alleges have paid incorrect amounts of tax, demanding



0.75%

The US state of Nevada approved a proposal to add a 0.75 percent excise tax on gold and silver miners reporting gross revenue of between US\$20 million and US\$150 million

very large adjustments.

Meanwhile Kyrgyzstan's State Tax Service revived tax claims it had previously terminated against Centerra Gold for the period 2011 to 2017. A few weeks later, Kyrgyzstan took over Centerra's flagship Kumtor gold mine. Elsewhere, copper producer First Quantum Minerals is embroiled in international arbitration proceedings with both Zambia and Mauritania over disputed royalties and taxes.

A fine balance

Whether the legislative measures currently contemplated in Chile and elsewhere are ultimately adopted, the direction of travel is clear. Increased fiscal pressure on mining

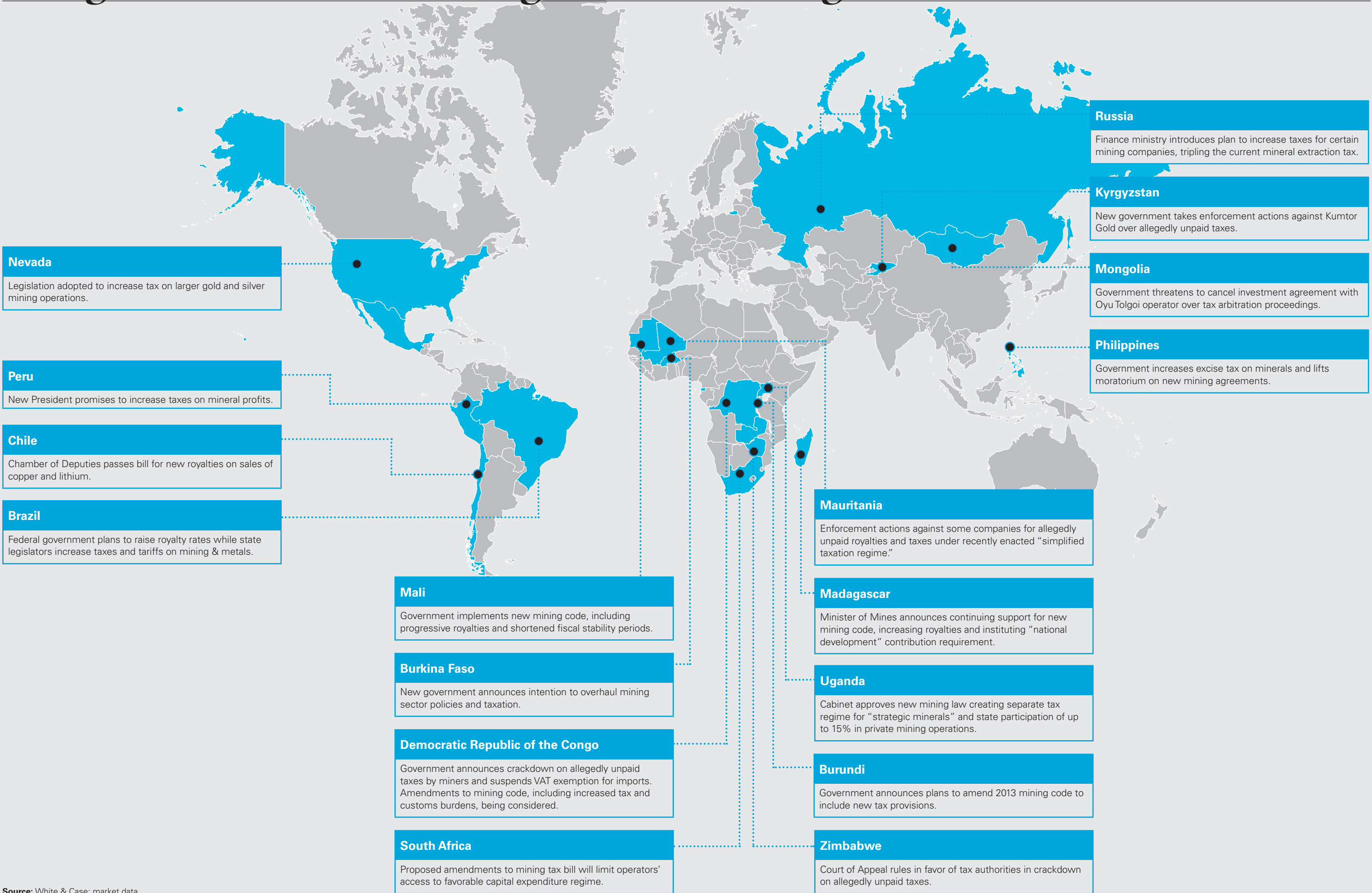
projects is bound to materialize in one form or another, whether through new taxes or the aggressive enforcement of existing ones.

While high commodity prices may initially cushion the impact on projects, governments need to achieve the right balance of increasing revenues without stifling investment. The challenge will be to craft sustainable fiscal policies that can move with the commodities cycle, grow the tax base with new projects and provide the certainty that the industry needs.

Sadly, there is a distinct possibility that, just as in previous cycles, some governments will fall prey to nationalist politics and



At a glance: Global tax changes in the mining & metals sector



Source: White & Case; market data



The challenge will be to craft sustainable fiscal policies that can move with the commodities cycle, grow the tax base with new projects and provide the certainty that the industry needs



4%

Madagascar proposed new provisions to the country's mining code, including an increase in royalties from two to four percent for base metals, gold and silver

overreach, threatening project economics and future investments.

In this environment, mining investors would be well advised to assess their positions. In particular, investors should carefully assess the contractual arrangements under which projects are being carried out.

Fiscal stability agreements will prove invaluable. These agreements are ordinarily enforceable through local courts or international arbitration and also provide useful leverage in negotiations with fiscal authorities.

In the current environment, projects that benefit from stability agreements are more attractive. Sponsors of new projects should put a premium on securing stability agreements, and operators of existing projects that benefit from such agreements should be extra-cautious not to allow them to lapse.

Beyond contractual protections, investors should also reassess project holding structures to ensure the best available investment treaty coverage for their foreign assets. Investment treaties provide broad protections to foreign investors, but not all treaties are created equal.

For example, some treaties carve out taxation measures, leaving investors with limited protection in the face of mounting fiscal pressure. Sophisticated investors increasingly plan their investment structures with a view to benefiting from optimum investment treaty protections. Many treaties do not include substance requirements, allowing investors to acquire protections through the simple addition of special purpose vehicles in their holding structures.

While "treaty planning" is generally permitted, it must ordinarily take place before adverse measures are adopted by host governments. With the signs of a new wave of resource nationalism already here, the time is now for investors to make sure that their house is in order.



ESG credentials driving value for miners on US exchanges

Investors are returning to mining & metals amid an almost unprecedented rally in the US capital markets that is taking place despite the continued economic challenges related to the COVID-19 pandemic. White & Case partners **Oliver Wright, Andrew Weisberg** and associate **Terrel Ferguson** analyze.

Those companies that have repositioned themselves as part of the energy transition away from fossil fuels have been able to take advantage of this momentum and find favor among generalist investors in the US.

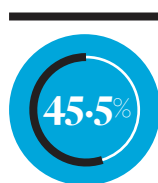
But the sector is also facing intense scrutiny over its ability to meet increasing environmental, social and governance (ESG) standards. It is far from alone in facing this scrutiny, with other sectors such as energy also under the public eye in relation to ESG issues. The UN Climate Change Conference set to take place in Glasgow in November 2021 will shine an even greater light on these issues.

It is clear that the mining & metals industry must play an important role in energy transition, both in terms of improving its own environmental footprint, but also in being a necessary contributor to the commodities needed to usher in a clean energy future.

The mining & metals industry is not homogenous. It consists of several subsectors, each with their own economic drivers.

Precious metals, industrial metals, construction materials and energy materials each follow diverging commodities cycles. While all miners must focus on ESG compliance, some commodity producers will benefit more than others as the economy turns its attention to an energy transition.

The interest in clean energy and



The Nasdaq has increased by 45.5% from January 2020 to January 2021 while TSX and ASX saw modest increases and LSE had a decrease in capitalization of 8.8%

decarbonization of the economy presents an opportunity for those operators producing commodities that are integral to the energy transition. Battery minerals such as lithium, nickel, cobalt and graphite are expected to see a marked increase in demand that many forecast will outstrip current supply.

The shift to the US

Traditionally, mining companies have commonly found their home on one of three exchanges, in markets that have mining as a core component of the national economy: the Toronto Stock Exchange (TSX) and TSX Venture Exchange in Canada; the Australian Stock Exchange (ASX); and the Johannesburg Stock Exchange (JSE) in South Africa.

To an extent, the London Stock Exchange (LSE) has been the international market of choice outside of these three jurisdictions.

According to a comparison of overall domestic market

capitalization from January 2020 and January 2021, the TSX and similar Canadian exchanges run by the TMX Group experienced an increase of 4.9 percent. The ASX saw more modest growth of 1.9 percent and the LSE Group had a decrease in capitalization of 8.8 percent.

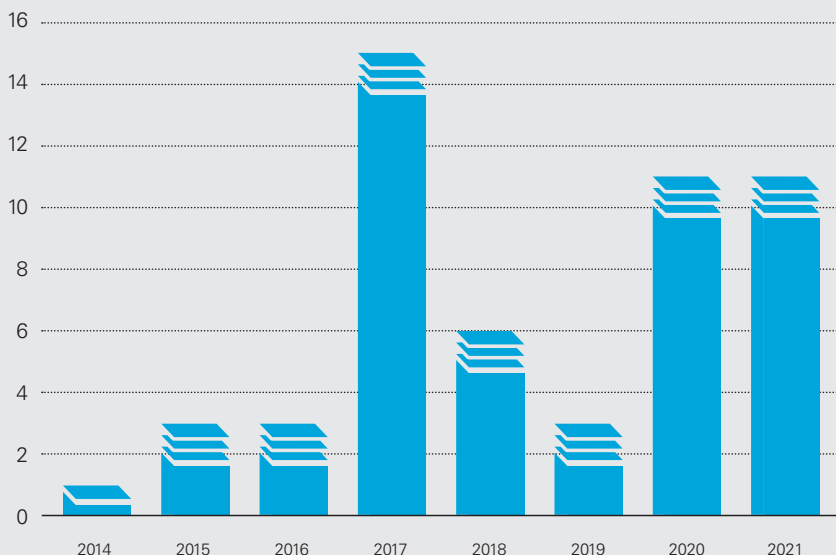
However, the Nasdaq has increased by 45.5 percent during that time. Traditionally technology focused, the Nasdaq has seen some of the highest growth and influx of capital of stock markets in developed countries in recent years.

There is a great opportunity for miners with the right credentials to capitalize on this moment. Companies producing commodities that are integral to an energy transition and which can demonstrate ESG compliance are finding favor with US investors, and mining & metals companies are starting to gravitate to the US markets as a result, as the graph shows.



Mining & metals industry has a key role to play in global energy transition, both in improving its own environmental footprint and by contributing commodities needed for a cleaner energy future

Mining & metals companies new listings on US exchanges, 2014 – 2021



Source: Bloomberg

The data does not include the second half of 2021, and the first half of 2020 was affected by the pandemic. That just emphasizes the scale of the growth in new listings by mining & metals companies in the past two years.

Rule changes facilitating moves

Mining-focused companies are taking advantage of the strength and depth of the US capital markets and the large amount of capital that companies listed on US exchanges have access to. A significant number of these companies have positioned themselves as suppliers to industries that are seen as pivotal to an energy transition, such as electric vehicle manufacturers, battery producers and the renewables sector.

Recent changes to Securities and Exchange Commission (SEC) disclosure rules for companies engaged in mining operations have also helped to facilitate these moves.

In late 2018, the SEC overhauled



**US\$12
billion**

To date, SPACs with a mining or energy transition focus have generated, or are expected to generate, nearly US\$12 billion from 50 separate initial public offerings

the relevant disclosure requirements by replacing its decades-old guidelines, set out in Industry Guide 7, with new subpart 1300 of Regulation S-K, based on the Committee for Mineral Reserves International Reporting Standards (CRIRSCO).

The new rules are mandatory for companies for their first fiscal year beginning on or after January 1, 2021. While the rules create a path to disclosure of resources and reserves for companies listing in the US, differences between the SEC rules and those in other jurisdictions based on CRIRSCO mean companies that have historically reported in jurisdictions such as Australia or South Africa will likely have to undertake a substantive update of their technical reports.

An exception to this exists in the form of the Canada-US Multijurisdictional Disclosure System (MJDS). The MJDS gives companies that are already listed and reporting on the TSX (or TSX-V) a more

streamlined path to listing in the US.

Battery minerals companies have been leading the way, making the shift to the US. Canada's Nouveau Monde Graphite, which has traditionally traded on the TSX Venture Exchange, has recently dual-listed on the New York Stock Exchange (NYSE) and Australian Piedmont Lithium, which has raised multiple rounds of capital through the use of American Deposit Receipts (ADRs) on the Nasdaq Capital Market, are two good examples.

In addition to traditional mining companies, special purpose acquisition companies (SPACs) with a mining focus have also been able to generate capital from the US capital markets to an unprecedented degree. To date, SPACs with a mining or energy transition focus have generated, or are expected to generate, nearly US\$12 billion from 50 separate initial public offerings.

Newcomers to the essential mining industry are now taking advantage of different avenues to capital that until now were untapped.

The US capital markets are the largest source of capital in the world for publicly traded companies, and mining & metals companies are in the perfect position to take advantage of these sources of capital, as long as they shape their messaging around ESG and what investors are looking for.

Examining the ABC risks as the mining & metals sector gains critical momentum

White & Case partner **Anneka Randhawa** and associate **Lucy Rogers** highlight some of the key considerations around bribery and corruption risks, as the mining & metals sector is gaining critical momentum in the world's energy transition toward a low-carbon future.

Mining & metals in a low-carbon world

The mining & metals sector is gaining renewed global macro-economic prominence. Minerals and metals, whether produced or recycled, will be critical to the success of the world's energy transition toward a low-carbon future.

The resilience of the sector and of commodity prices through the COVID-19 pandemic, coupled with growing investor and consumer excitement about energy transition materials, has lured generalist investors toward the sector for the first time in years. This contrasts with environmental, social and governance (ESG) concerns and lackluster returns that were previously discouraging these investors.

The ESG agenda has undoubtedly been a major driver of change in recent times, and the bar of expectations is continually being raised by investors, governments, communities, consumers and other stakeholders.

There is tremendous opportunity for industry players to embed an ESG and low-carbon culture, capturing both risks and opportunities, into their corporate strategies in order to build stakeholder trust, focus on ESG and low-carbon-compatible business lines, and generate



500%

The World Bank estimates that the production of minerals such as lithium, graphite and cobalt would rise by almost 500% by 2050

truly sustainable growth.

Bribery and corruption risks

The World Bank has estimated that the production of minerals such as lithium, graphite and cobalt is set to rise by almost 500 percent by 2050. Minerals and metals will be more in demand than ever in a low-carbon world.

However, the nature of the work conducted in the mining & metals sector means that it has traditionally been highly exposed to bribery and corruption risks. It is important to remember that these risks will remain and, at points, increase, as

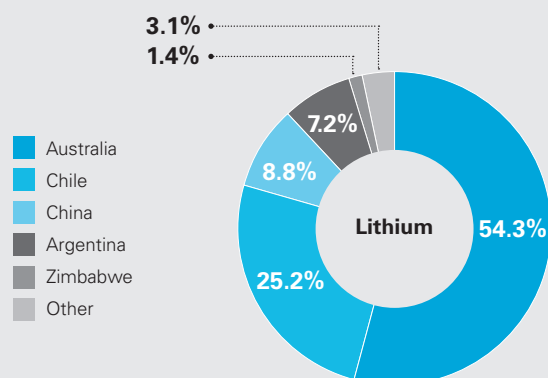
the energy revolution takes place.

As businesses and investors adapt and take advantage of the opportunities presented by the transition, they should remain mindful of the existing and emerging bribery and corruption risks so that they can create systems and controls to effectively manage them.

High-risk countries

Minerals including lithium, graphite and cobalt are critical to the manufacture of renewable energy technologies, such as rechargeable batteries used in electric vehicles and wind turbines. They are also only

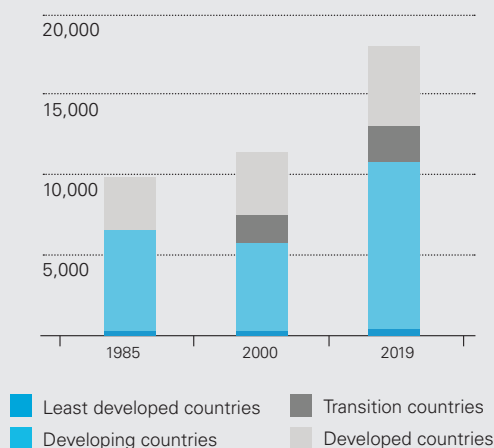
Key commodities for battery technology



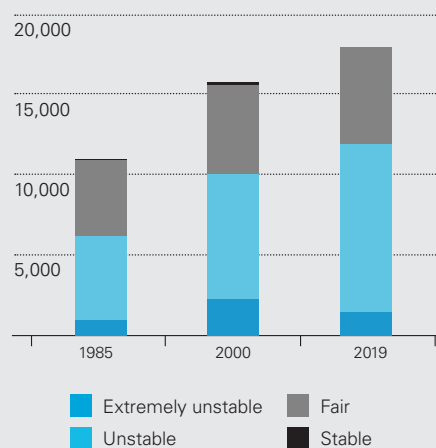
Source: World Mining Data 2021 International Organizing Committee for the World Mining Congress

Development status and political stability of producer countries

Development status of producer countries



Political stability of producer countries



Source: World Mining Data 2021 International Organizing Committee for the World Mining Congress

found in a small number of countries across the globe, many of which are deemed to be very high-risk from a bribery and corruption perspective.

The Democratic Republic of the Congo (DRC) currently produces roughly 60 percent of the world's cobalt, with Russia also ranking as a key producer of the metal. Exploration of lithium reserves in South America has continued to climb, with Chile currently the world's number-two producer of lithium. As of 2020, China is the world's largest producer of graphite.

According to Transparency International's Corruption Perceptions Index (CPI), which scores 180 countries and territories by their perceived levels of public sector corruption according to experts and business people, China has a score of 42/100 and Russia a score of 30/100. Lower scores indicate higher levels of corruption.

Guinea, another important producer of key minerals such as graphite, has a score of 28/100 and the DRC has a score of 18/100. The index shows that, in general, many of the key producer countries

currently present big bribery and corruption challenges to businesses and investors.

Government interactions

A key reason for low scoring on the CPI is the well-known challenge of interacting with government officials in certain countries. Interactions with government officials are higher risk because of the very low test for bribery under international bribery laws, including the UK Bribery Act 2010—which



18/100

DRC's score under the Corruption Perception Index

Source: Transparency International

does not require corrupt intent for an offense of bribing a public official to be leveled.

These risks are acute in the mining & metals sector because of the need to work closely with government officials throughout the development and operation of projects. Governments act as gatekeepers with the power to approve projects and allocate rights to foreign companies to extract and manage these natural resources.

As the above graphics show, a significant proportion of producer



The challenge is finding the fine balance between maintaining good working relationships with government bodies while avoiding conduct that could be perceived as falling foul of international bribery and corruption laws



Pre-deal due diligence on an intended target is a must in any investment opportunity in order to fully scope risks, including financial crime risks

countries are deemed developing countries, and a significant portion are also deemed unstable or extremely unstable.

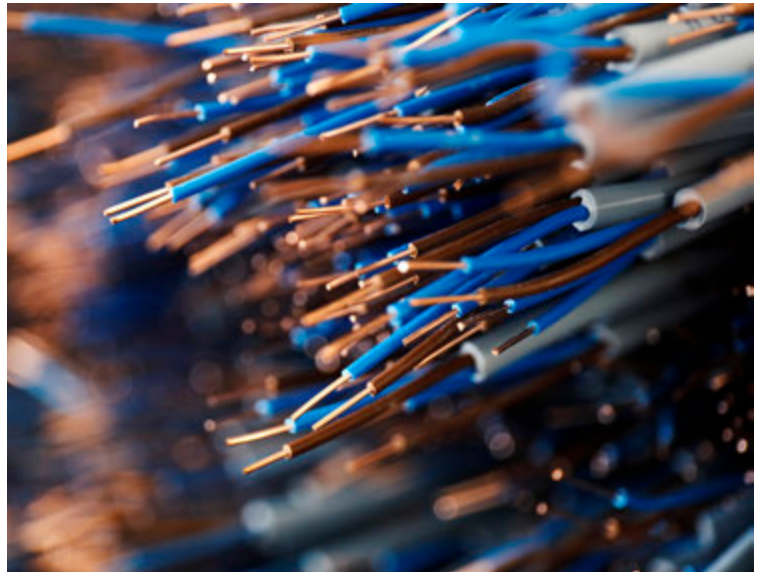
When working in such countries, businesses are likely to struggle with longer bureaucratic processes as well as difficulties with managing relationships with government officials and departments against a backdrop of fragile political conditions and differing expectations around conducting business.

The challenge is finding the fine balance between maintaining good working relationships with government officials and departments, and avoiding any conduct that could be perceived as falling foul of some very low thresholds under international bribery and corruption laws.

Facilitation payments

Facilitation payments, sometimes known as “grease payments,” are payments made to government officials to expedite a routine action. Such payments are illegal in an ever-growing number of jurisdictions, but still remain a common, and expected, part of doing business in some countries where low-level government officials receive low salaries.

They are prevalent when bureaucratic procedures cause delays to government and administrative actions, and are also often requested in connection with the transport of goods, for example at ports in order to facilitate the timely clearance through



customs and avoid long delays.

The COVID-19 pandemic and successive lockdowns are likely to have exacerbated delays in government processes as well as the movement of goods, and therefore heightened the risk of facilitation payments being made. These pressures are likely to be intensified by the increased demand for minerals, and the incentives for companies to be the first to capitalize on opportunities.

Robust procedures can be put in place to ensure that the pressures and opportunities presented by the transition to clean energy do not result in corrupt payments being incentivized to “get the job done quickly.”

Third-party risk

Mining & metals projects necessarily involve various multinational parties in complex supply chains, and this goes hand-in-hand with bribery and corruption risks.

Engaging third parties gives rise to these risks, as businesses can be held criminally liable under international bribery laws for bribes paid by those acting for them or on their behalf. These risks are increased when dealing in higher-risk regions, such as those that are likely to be key to mineral production for green technologies.

As new entrants come into

the market as part of the energy transition, businesses should be mindful of the risks presented by their agents, contractors and representatives, ensure they are suitable and that robust controls are in place to monitor and manage their conduct.

Third-party risks can appear in the logistics chain, which will often involve multiple third parties. Risks will be higher where multiple borders are crossed, or multiple modes of transport are used to move a product from pit to port. Logistics chains are particularly vulnerable to facilitation payments.

A high degree of reliance on third-party agents to interact with governments, whether in relation to the logistics chain or otherwise, where the interests and the extent of the role of those agents is unclear, is also likely to give rise to bribery risk.

There are also risks associated with on-boarding new partners where old partners are no longer able to fulfill a particular role.

Due diligence on acquisitions

The opportunities presented for the mining & metals sector by the transition to clean energy are likely to result in an increased interest in investment and acquisition.

Given the high risks from a financial crime perspective, it is

important that pre-deal due diligence is carried out on an intended target or investment opportunity in order to fully scope out the types and levels of risk presented, as well as highlight any issues capable of being identified at the due diligence stage.

This extends further than checking whether an anti-bribery and corruption policy exists; it is important to know how typical financial crime risks are managed and reach a view on whether those risk-management tools are likely to have been effective. This enables the potential investor to be fully informed of the risks presented by the transaction—which may become their risks before long—and of the likelihood of issues cropping up post-deal.

Managing risks

Bribery and corruption risks in the mining & metals sector will not vanish with the transition to clean energy. However, there are many things that can be done to manage these risks so that businesses can operate within the parameters set by international bribery and corruption laws.

With careful planning, strong systems and controls, and dedicated oversight, bribery and corruption risks can be mitigated.

Businesses should think about creating specific policies and procedures around dealings with government officials and how to react to particular scenarios. These should be tailored to the country in question, given that each will have its own systems and therefore present unique challenges.

It will be particularly important to avoid making payments, including facilitation payments, to government officials (directly or indirectly) while also thinking about the circumstances in which travel, food or accommodations for government officials might be legitimately provided and justified.

Targeted additional training to members of staff that are most likely to be placed in situations where actions they take could fall foul of the very low tests under international bribery and corruption laws is also advisable.

Businesses should undertake careful due diligence into third parties before they are engaged, followed by continued monitoring of the work they are performing and scrutiny of invoices before payment. All of this should be conducted by employees with



60%

of the world's cobalt is currently produced by The Democratic Republic of the Congo (DRC).

the skills and experience to spot potential bribery and corruption issues.

Future opportunity and current risk

Enhanced cooperation between agencies at an international level has helped to facilitate the enforcement of anti-corruption laws around the world, with a significant proportion of enforcement actions in bribery and corruption occurring in the mining industry.

In addition, it is no longer one or two of the usual suspects seeking to prosecute bribery; an increasing number of enforcement agencies around the world are looking to take action against perceived wrongdoers.

As we race toward a greener future, it is important to bear in mind that we have not left bribery and corruption risks behind. They are as relevant as ever, and the threat of enforcement is very real.

Businesses operating in the sector should therefore ensure they spend time focusing on considered and careful bribery risk assessment and management, creating the systems and controls that can effectively mitigate risks, at the same time as allowing operations to run smoothly.



Southern Africa's PGMs are on the rise

PGMs are helping to ensure that Southern African mining remains relevant and is contributing to the global clean and green transition—White & Case partners **Gary Felthun, Allan Taylor, and Rebecca Campbell** discuss.

Platinum group metals (PGMs) have been the main contributor to a major uplift in Southern African mining production in 2021—the biggest bounce in six years after disruption caused by the pandemic and a significant production decrease in 2020.

The recovery coincides with the transition by automotive manufacturers from combustion engines to electric vehicles. It may have been expected that this would risk the loss of a powerful driver of demand for the Southern African PGM. But in a reversal of fortunes, PGMs are helping to ensure that the region remains relevant and is contributing to the global clean and green transition.

Along with a price boom, there seems to be a new wave of investment interest in PGMs, but this relies, to a large extent, on demand-side stability.

Demand drivers and supply constraints

Among the rarest metals on earth, PGMs, which include platinum, palladium, rhodium, ruthenium, iridium and osmium, are well known for their catalytic properties. This makes them resistant to corrosion, wear and tarnish, and gives them excellent high-temperature characteristics, high mechanical strength, good ductility and stable electrical properties.

A significant driving force behind the PGM boom is the automotive sector. With 78 million cars being



7%

EVs are expected to account for at least 7 percent of the global road vehicle fleet in 2030

produced in 2020, the need for autocatalysts and the PGMs used to make them is significant. The more stringent emissions regulations that have been put in place in Europe, China and India—driving the increase in the use of autocatalysts in vehicles—have started to impact the subsequent demand for PGMs.

Ultimately, the expected growth in battery electric vehicles (EVs), which do not use autocatalysts, may result in some reduction in demand for PGMs. However, this transition will take time and, during the transition phase, combustion engine vehicle emissions are expected to become even more heavily regulated by governments worldwide.

Approximately three million EVs were sold in 2020, representing less than 5 percent of global sales. EVs are expected to account for at least 7 percent of the global road vehicle fleet in 2030, showing continuing strong demand in more traditional modes of transport.

While current demand hinges on autocatalysts, PGMs are making rapid progress in the new end-use sectors of the hydrogen economy: fuel cells; lithium batteries; low-loss computing; and food technology.

Their particular combination of chemical and physical properties makes PGMs valuable to the end-market for a range of industrial, medical and electronic applications—not just for investment but for real, functional use. In many of their applications, substitutes for PGMs are either not feasible or are considered to be inferior in

performance. As such, demand for PGMs is expected to continue even as prices rise.

Fuel cell technologies are also becoming increasingly prominent across many sectors, including transport, as part of the global push to improve air quality and reduce global warming. Additionally, the anticipated growth in demand for electrolysis capacity to produce green hydrogen presents significant demand potential in the longer term. Together with the use of platinum in automotive fuel cells, PGMs will play a key role in the hydrogen economy and therefore contribute to the energy transition process.

With environmental stewardship identified as one of the main sources of sustained demand, PGMs will form a significant part of the conversation as green energy metals of the future at the UN Climate Change Conference in November, alongside lithium, cobalt and copper.

Despite this increased demand, there are considerable factors that are limiting PGM supply. While new projects have been announced and will hopefully come online, the process is slow and the funding environment risk-averse, even amid soaring commodity prices.

According to the World Platinum Investment Council, 2021 will be the third consecutive year with a deficit in supply. Supply is projected to be broadly flat for the next three to four years, resulting in continued expectations around buoyant pricing.

In addition, Johnson Matthey's

latest PGMs Market Report notes that the palladium and rhodium markets will remain in deficit, despite all-time-high prices being recorded, with palladium climbing above US\$3,000 per ounce and rhodium repeatedly surging to US\$30,000 earlier this year.

According to the report, mining alone will not produce enough supply of PGMs to meet demand—approximately 25 percent of supply is from recycled materials—which may in turn drive prices even higher.

Implications for the Southern Africa mining sector

This growth has significant implications for the Southern Africa mining sector, which accounts for more than 60 percent of world PGM production. Russia produces a further 26 percent, and most of the rest comes from Canada and the US.

In particular, South Africa produces more than 80 percent of the world's platinum, more than 30 percent of the world's palladium (Russia accounts for about 45 percent)



US\$3,000

Price for palladium climbed above US\$3,000 per ounce earlier in 2021

and approximately 80 percent of the world's rhodium.

For the first time since 2010, PGMs overtook coal as the most significant contributor to mining-industry revenue in South Africa, reaching ZAR 190 billion last year. Their performance continues to surge in 2021.

Mineral sales for March 2021 in South Africa reached a record ZAR 75 billion, with 41 percent of that generated by PGMs according to the latest data, while platinum supply for Zimbabwe in Q1 2021 showed 11 percent growth compared to the same period in 2020. Additionally, the Zimbabwe Statistics Agency reported that PGM exports for March 2021 increased by 202 percent to US\$168.9 million—their highest export earning since 2009.

This uptick has translated into real opportunities for Southern African PGM miners, especially those that have been highly acquisitive during the last two years and focused on geographic diversification. While recycling from secondary markets is an attractive

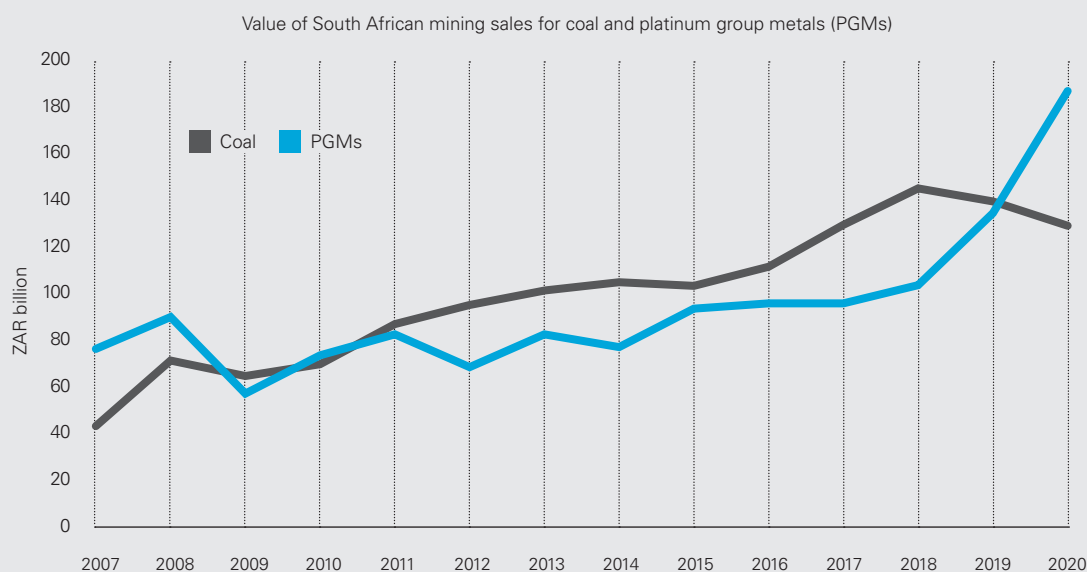
alternative, platinum producer Implats has suggested there will be a shift back to the South African production base, which will enable the PGM majors to capitalize on continuing strong demand.

Helping to drive this demand are new products such as PGM exchange-traded funds or novel investment products such as Norilsk's Global Palladium Fund, showing how investors are looking for different ways to obtain PGMs' physical and derivative exposure.

All of these conditions, together with the push toward a hydrogen economy, make for a positive and exciting outlook for a sector that might otherwise have struggled to find its place amid the expected rise of EVs.

With automotive manufacturers and other end-users of PGMs being increasingly focused on the ESG performance of their entire supply chains, and debt and equity investors continuously raising the bar in the ESG realm too, the sector is well positioned to capture future investment, especially as the global economic recovery gathers pace.

In 2020, PGM sales outperformed coal sales for the first time since 2010



Source: Stats SA, mining production and sales

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