INFORMATICS JOURNALS

Online ISSN : 3049-3455

Mineral Metal Energy Oil Gas and Aggregate

Contents available at: www.informaticsjournals.co.in/index.php/2MEOGA

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Part 1: Public/Private Equity Participation in Exploration: Why the Creation and Sustenance of Junior Mineral, Oil, and Gas Companies is Critical for the Supply of Battery Minerals, Gold, Oil, and Gas in the Future

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Abstract

The junior mining industry navigates a landscape marked by a unique blend of challenges and opportunities, driven by various macroeconomic factors. This sector, known for its dynamism and potential for high rewards, is now at an interesting juncture, influenced heavily by global economic trends, technological advancements and shifting market dynamics. One of the most significant factors impacting the junior mining industry is the fluctuation of commodity prices. Notably, gold has seen a surge in value, primarily due to its status as a safe-haven asset amid economic uncertainties. The policies set forth by major economies, especially the United States, will profoundly impact the mining sector. The demand for safe-haven assets like gold often rises in response to economic and foreign policy decisions.

Keywords: *Critical Minerals 2025, Exploration, Feasibility Report, Financing, Government Encouragement, Investment, Junior Mining Company, Oil and Gas 2025, Policies, Risk Mitigation, Strategic Partnerships*

Watch: Junior Mining and Consolidation Frenzy: Next wave of junior mining profits incoming? | Chairman's briefing (Open in the QR Code)

1.0 The Setting

Globally, the junior mining market is populated with about 2,500 companies with market capitalisations of under $500M, approximately half of which have market capitalisations of less than $10M[1-2]. These "junior" companies are typically focused on the early stages of mining development (exploration, discovery, resource definition and scoping), where the bulk of their efforts are directed at drilling and other exploration activities to define potentially mineable resources in the ground better. Junior mining companies have been exploring for new mineral deposits since the 1990s, and have expanded into many countries around the world. These companies focus on finding new natural resource projects. They make money by issuing new shares. Junior mining companies are also known as exploration companies. They play a vital role in the mining industry by providing the groundwork for future exploration projects.

Small or medium-sized exploration and mining companies in the early stages of mineral deposit development are commonly known as junior miners in the mining and natural resources sector. These companies are actively involved in pursuing new mineral resources, encompassing precious metals, rare earth elements and base metals.

Junior mining companies have been internationalising since the 1990s. They often start as private companies and then go public to raise capital. "Junior" Companies in the exploration stage do not have any desktop studies or resource estimates completed and are considered to be entirely speculative as their success relies entirely on making a new mineral discovery through drill programs. The most upside (and by far the greatest risk) comes from buying a junior when they are in the exploration stage. Great drill assay results can send a junior's share price skyrocketing but the reverse can also be true. Junior explorers, the green field plays, are the riskiest plays by far. One set of bad drill results can reduce the stock price to rubble, that is until the company finds another project to work on. **If you're buying into this kind of play make sure the company has another fallback project in its portfolio.**

1.1 What They Do

- Junior mining companies search for new deposits of precious metals and minerals.
- They act as an exploration pipeline for major mining companies.
- They help develop resources and create opportunities for future supply and demand.

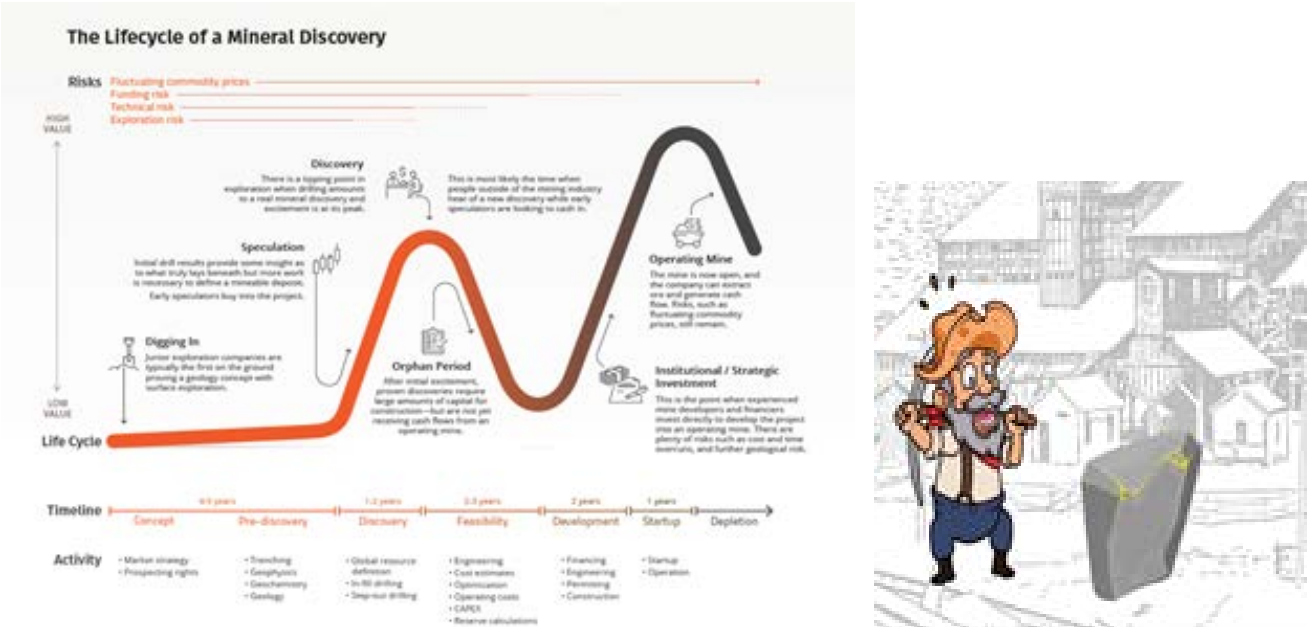


Figure 1. The first activity in an unexplored deposit comes from the junior miners (see "Digging in" the figure).

1.2 Characteristics

- They are small, early-stage companies with small market capitalisations.
- Their stocks are often volatile and less liquid.
- They are often considered growth stocks.
- They frequently rely on venture capital to secure financing.

1.3 How They Operate

- They often partner with larger mining firms to explore existing mining regions or develop new industries.
- They can enter and operate in high-risk destinations.

2.0 What is a Junior Mining Company?

A junior mining company is a small, early-stage mining company in search of new deposits of oil and gas, gold, silver, uranium, or other precious metals and/or minerals. They provide the groundwork for the future supply and demand of attractive exploration projects and heavily contribute to the exploration and development of the mining industry. Junior mining companies:

- Are typically lower market cap ($1 million to $500 million) and thinly traded exploration companies.
- Stocks tend to be volatile and less liquid.
- Are often considered growth stocks.
- Frequently rely on venture capital to secure financing.
- Typically engaged in mineral exploration and development.
- The main goal is to discover significant deposits and develop resources.
- Seek potential opportunities by acquiring properties that can yield large resource deposits.
- Are speculative by nature.
- Often start as private companies and then go public to raise capital for exploration.
- Usually highly leveraged companies with smaller market capitalisations and smaller asset bases.
- Are typically high-risk.

2.1 What challenges will Junior mining companies face in 2025 and the future?

- **Accessing Capital**: Due to the high-risk nature of exploration projects, access to capital for junior mining companies is challenging. Competing for well-priced capital requires miners to better dem-

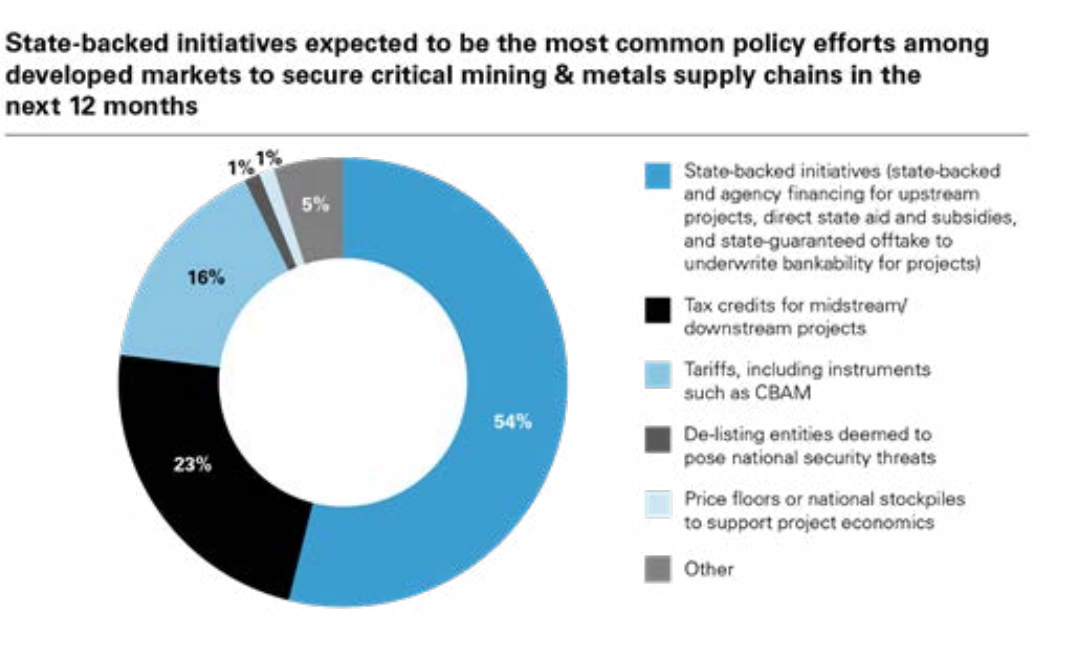


Figure 2. Geopolitics, which dominated mining and metals sentiment in 2024, promises to further fragment markets in 2025. Junior miners are evenly poised.

onstrate their achievement of both financial and non-financial considerations. Junior mining companies must reshape portfolios and investments to align with their strategy and capitalise on changing demand, including minerals for batteries.

- **Productivity and Costs**: Demand is up but so are the costs of inputs, shipping, talent and decarbonisation programs. Reducing costs and improving productivity is a balancing act for junior miners who must achieve short-term gains while creating long-term value. There is a need for improved geological modelling to alleviate uncertainty. Analytics must be used to enable predictive maintenance and improve reliability. Operational discipline helps deliver consistent results while integrated operating models that align with markets enable rapid response to change. Productivity initiatives (people-centred, enabled by technology) help junior miners to achieve improvements.
- **Climate and Environmental Pressures**: The mining industry is a significant contributor to global greenhouse gas emissions. There is increasing pressure for junior miners to decarbonise operations and adopt greener technology in their supply chain. Water usage is a challenge, as this already scarce resource is heavily used in the mining process. Junior mining companies that can demonstrate their contribution to a sustainable future will have a competitive advantage. To stay competitive, companies must address climate, and environmental challenges in their corporate strategies, reporting and high-level decision-making.
- **Social Issues**: Shareholders/stakeholders are increasingly focused on the social and community impact of mining. There is a move to ensure that communities are treated fairly and with respect, particularly in remote mining sites. There is a push to ensure that mining companies leave a lasting positive legacy when mining operations cease. To stay competitive, junior mining companies must address these social challenges.
- **Health and Safety Concerns**: Mining is a risky business for on-the-ground employees. They're faced with airborne hazards, ground instability, water accumulation, dust inhalation, hearing damage, whole-body vibration, over-exposure to Ultraviolet (UV) radiation, harmful chemical exposure, thermal/heat stress and more. Junior mining companies are called to solve/mitigate the likelihood of these risks. Possible solutions include digitalisation and connectivity (using smartphones/wearables, geo-location tools, etc.).
- **Demand Insecurity**: As the transition from non-renewable to renewable energy evolves, demand for specific commodities changes. Junior mining companies need to be aware of the possibility of substitution on long lead projects. They need to build a flexible business that can handle fluctuations from unstable prices, uncertain demands and the possibility of product substitution. They must optimise their risk by using scenario modelling to predict the impact on demands. It's wise to implement offtake agreements (an agreement to purchase all or a substantial part of the output or product produced by a project) to deal with the likelihood of price volatility.
- **Skills Shortage**: There is a talent shortage in the mining industry, sparking production cuts and shipment delays. The challenge is attracting and retaining employees in a sector that is unattractive to younger generations, is perceived as damaging to the environment and requires dirty/hard physical labour. Junior mining companies must focus on an inclusive culture with solid career paths open to everyone. They need to improve working conditions, benefits, culture and the opportunity for remote work/training.
- **Commodities Markets**: These are evolving, a consequence of both changing demand and the advent of digitalisation. Junior mining companies need to adapt quickly or face being left behind. They can create value by using their knowledge of demand and supply dynamics. It's wise to rely on digital and online platforms in markets that are highly competitive and transparent, focusing your efforts on differentiating your company from the competition by providing a superior customer experience (ie: one-click ordering platforms, automating approvals/information flows) and creating strong relationships with upstream suppliers.

- **Stringent Regulations** around drilling, licensing, environmental safety, operational practices and worker safety increase the time, cost and effort needed for compliance. Legal expenses, penalties and damage to reputation when in violation of rules and guidelines are a concern.

There is an ever-changing number of risks and opportunities faced by the junior mining sector. Environmental and social concerns, uncertain demand, changing costs of production, difficulty accessing capital and shortage of skilled workers are all challenging issues. Junior mining companies must be willing to transform to deliver value and create a sustainable future for mining[2-4].

2.2 How It Has Been

Investing in junior miners presents an alluring opportunity for individuals seeking potentially remarkable returns. These companies primarily operate in unexplored or underutilised regions, presenting the possibility of discovering substantial mineral deposits that could result in substantial profits. Moreover, junior miners often possess the advantage of a lower market capitalisation, meaning that even modest positive developments can exert a sizable influence on their stock prices.

Conversely, it is imperative to acknowledge that investing in junior miners comes with inherent risks. Exploration and mining activities are highly speculative and can be subject to various uncertainties. Junior miners encounter challenges, including geographical risks, operational difficulties, and regulatory hurdles. Additionally, they may lack the financial resources and infrastructure of larger mining companies, making them more susceptible to market fluctuations and economic downturns. When considering investments in junior miners, thorough due diligence and meticulous research are vital. Investors should evaluate factors like the company's management team, the quality of their mineral assets, track record, and financial stability. Furthermore, analysing the jurisdiction in which the company operates holds significance as political stability, mining regulations and community relations can profoundly impact a junior miner's prospects.

There is a critical need for investment in Greenfields mineral exploration in many countries to discover the significant volumes of new mineral resources to meet the growing needs of clean energy, defence, medical applications, development, construction and other industries. Mineral exploration is a long-term, high-risk activity which needs to attract equity capital in a globally competitive marketplace. Junior mining stocks didn't have a great 2024 with 659 winners and 1,250 losers.

2.3 Oil and Gas Juniors

A "junior oil and gas company" refers to a small, emerging company primarily focused on exploring and developing oil and gas deposits, typically producing less than 10,000 barrels per day, with a low market capitalisation and high-risk profile, often aiming to either be acquired after making a significant discovery or raise capital to develop new fields themselves; essentially, a smaller player in the oil and gas industry compared to larger established companies.

Key characteristics of a junior oil and gas company are:

- **Low Production Volume:**

Generally produces a relatively small amount of oil and gas compared to larger companies.

- **Exploration Focus:**

Primarily focused on searching for new oil and gas reserves.

- **High Risk, High Reward:**

Considered a high-risk investment due to the uncertainty of exploration success, but can offer potentially large returns if a significant discovery is made.

- **Small Market Capitalisation:**

Typically has a low market value compared to established oil and gas companies.

- **Capital Intensive:**

Requires significant capital investment to fund exploration and development activities.

The confusion of factors that determined oil and gas prices this year seems likely to continue in 2025. A confluence of conditions drove prices higher in 2022, notably the outbreak of war in Ukraine, restrained investment by US shale companies, and OPEC price cuts to offset weaker demand from China.

In the year 2024 continued OPEC cuts and renewed conflict in the Middle East pushed the oil price to a peak of $95 a barrel, but it has fallen back under $88 in Q4 as continued high production has coincided with a weaker economic climate. Cartel cuts have been counterbalanced by greater US output, and China's recovery in late 2024 has shed light on demand.

The intentions of OPEC are uncertain in 2025. Saudi output has so far been restrained, but other members, including Russia, Iran, Venezuela, Iraq and Nigeria have been stepping up production. Supply may, however, be threatened by further unrest in Ukraine.

3.0 Oil and Gas Outlook

The oil and gas outlook for 2025 is expected to be characterised by a rise in the supply and a decline in the demand, resulting in lower prices[4-6].

3.1 Supply

- The International Energy Agency (IEA) projects that global oil supply will increase by 1.8 million barrels per day (b/d) in 2025.
- The EIA expects oil and liquid fuel production to average 104.4 million b/d in 2025.
- OPEC+ producers are expected to increase production, but less than their stated target.

3.2 Demand

- The EIA expects global demand to average 104.1 million b/d in 2025, which is lower than pre-pandemic trends.
- Bank of America analysts predict that oil prices will average $65 per barrel in 2025 due to slowing demand.

3.3 Prices

- The EIA expects Brent crude oil prices to average $74 per barrel in 2025, and then fall to $66 per barrel in 2026.



Figure 3. A snapshot of the oil and gas industry as of early 2025.

- The EIA expects U.S. crude prices to average $70 per barrel in 2025, and then fall to $62 per barrel in 2026.

3.4 Investment

- Rystad Energy projects that global upstream investments will decline by 2% in 2025.
- Wood Mackenzie predicts that oil and gas companies will face a difficult capital allocation balancing act in 2025[6].

As 2025 begins, the market could be expected to experience interest-rate cuts, clarifying some of the previous uncertainty about the US Federal Reserve's stance on rate cuts. In addition to the 75- to 100-basis-point reduction in 2024, the Fed foresees the scope for a total of close to 150-basis-point rate cut in 2025 and 2026.5 Moreover, some energy policy changes can be expected under a new US administration following the 2024 US elections. Additionally, there is still global uncertainty regarding the trajectory of OPEC+ cuts and potential disruptions to energy trade flows. Despite these uncertainties, the oil and gas industry's capital discipline, increasing customer centricity and investments in new technologies are poised to drive a robust 2025[7-8].

4.0 A Case

The junior Canadian oil and natural gas exploration and development company Coelacanth Energy (TSXV: CEI) is scaling operations in the prolific Montney region in BC with a clear growth trajectory, making it a compelling



Figure 4. Outlook of the oil and gas mining industry.

Figure 5. Scan the QR code to read the full story of Coelacanth Energy (TSXV: CEI).

case for investors seeking entry at the ground level, as told by the company's president and CEO, Rob Zakresky. Zakresky highlighted Coelacanth Energy's strategic plan to expand from its current output of 1,000 barrels per day to more than 10,000 barrels per day by the end of 2025.

"We believe we're going to be able to create significant value over the next three to five years," Zakresky said, inviting investors to share in this growth journey. Coelacanth Energy's landholdings in the Montney region are located in the Two Rivers area with access to a highly productive portion of the basin, strategically ensuring its ability to tap into the natural gas and oil resources within its properties. Zakresky said Montney is still in the early stages of development, presenting extensive opportunities for growth and energy supply contributions both locally and globally.

5.0 Investment Streams of Junior Mining Companies

Junior mining companies, characterised by their exploration and development focus, often have distinct financial reporting elements. Such companies incur significant exploration costs, development expenses, and capital expenditures which are crucial to their growth and operational viability. Understanding these components within their financial statements ensures that investors are well informed about the company's current stage and financial obligations[8].

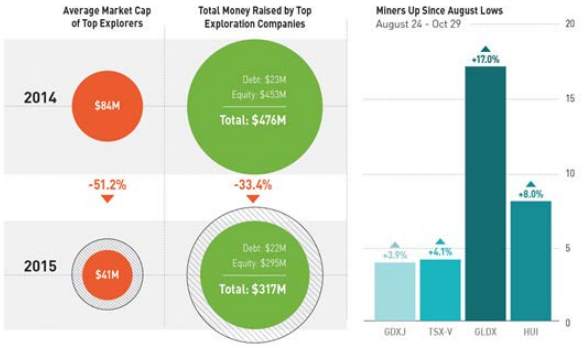


Figure 6. In 2014-15 while the market cap was lost, so was the debt-to-equity ratio. Things have turned around since.

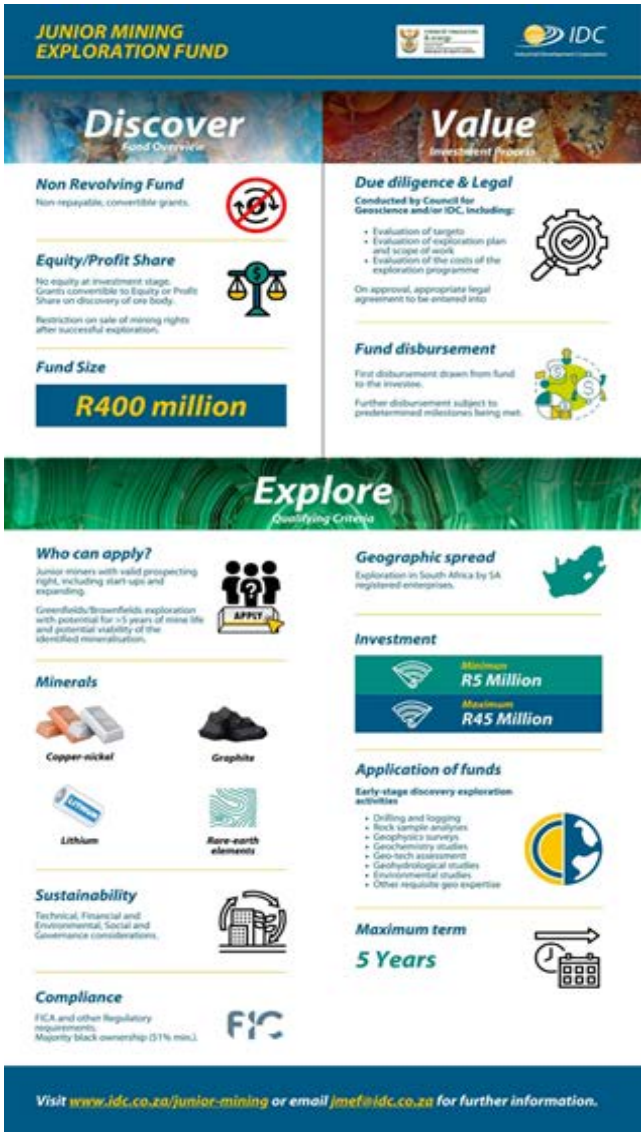


Figure 7. How different funds for Junior mining investment are designed.

Share-based compensation is a standard practice in the mineral exploration sector. By offering stock options and other equity incentives, companies align management's interests with those of the shareholders. This approach helps attract and retain top talent while minimising immediate cash outflows. Furthermore, it fosters a performance-driven culture, as employees are motivated to enhance shareholder value, aligning their success with the company's growth.

In addition to exploration and development costs, junior mining companies must allocate significant resources towards stock promotion. The success of a public exploration company is intricately tied to share issuances, and the company's stock must be promoted effectively to achieve favourable issuance prices. Investors must scrutinise these promotion expenditures as they are instrumental in securing new funding and sustaining shareholder value. By closely monitoring these expenditures, investors can better assess the company's strategic approach to capital raising and the potential impact on their investment. To make informed decisions and maximise returns, consider consulting with experts who specialise in evaluating the financial health and promotional strategies of junior mining companies.

Table 1. Australia's top mine financing companies

Australia's Top 5 Mine Financing Companies
Five top Australian equity financiers for junior miners include: BHP Ventures, Rio Tinto Exploration, Sandfire Resources Limited, Northbridge Capital, and Sprott Resource Partners; these established mining companies often provide funding to smaller exploration companies with promising projects, especially in the early stages of development, allowing them to access capital for exploration and development activities. Key points about these financiers: **BHP Ventures and Rio Tinto Exploration:** These are the venture capital arms of major mining giants BHP and Rio Tinto, respectively, with a significant track record of investing in junior miners with promising projects across various commodities. **Sandfire Resources Limited:** A mid-tier mining company with a focus on copper projects, also actively invests in junior explorers with copper potential. **Northbridge Capital:** A dedicated resource-focused investment firm known for providing funding to junior mining companies at various development stages. **Sprott Resource Partners:** A global resource investment firm with a strong presence in the Australian market, often providing funding to junior miners with high-potential exploration projects.

Table 2. USA's top oil and gas financing companies

USA's Top Oil and Gas Financing Companies
BlackRock Inc, KKR and Co Inc, Brookfield Asset Management Inc, Tailwater Capital LLC, and 3i Group Plc are among the top 5 private equity investors in the oil and gas industry in 2021 by deal volume. In terms of the geographic split, 9 out of the world's top 10 private equity investors in the oil & gas industry are headquartered in North America, and the remaining 1 is based in Europe. They employed a total of 208,575 people in 2021. The Kayne Anderson-Black Knight deal was one of the major deals in the oil & gas sector in 2021. Vinson and Elkins LLP served as legal advisors to Black Knight Energy LLC. Black Knight Energy LLC, an oil and gas company, has received an equity commitment of $500 million from funds managed by Kayne Anderson Capital Advisors LP including Kayne Private Energy Income Fund II LP and Kayne Anderson Energy Fund VIII LP, alongside Black Knight's management team. The deal was completed in Q2 2021. The KKR-SK E&S deal was another major deal in the oil & gas sector in 2021. Simpson, Thacher and Bartlett served as legal advisors to KKR. KKR & Co Inc (KKR), a private equity firm, has made an investment of KRW2.4 trillion ($2 billion) in SK E and S Co Ltd, a diversified energy company. The deal was completed in Q4 2021. The Saudi Arabian-Aramco Oil deal was another major deal in the oil and gas sector in 2021. HSBC Bank plc served as a financial advisor, while Latham and Watkins served as a legal advisor to EIG. Saudi Arabian Oil Co (Saudi Aramco), a petroleum and natural gas company, has completed the sale of a 49% equity stake in Aramco Oil Pipelines Co to a consortium led by EIG Global Energy Partners (EIG) for a sale consideration of $12.4 billion. Saudi Aramco holds a 51% stake in Aramco Oil Pipelines. The deal was completed in Q2 2021.

Large mining companies often provide equity funding to juniors through their venture funds. They all have proper governance in place to select and fund the junior mining companies. Tables 1 and 2 provide Australia's top mine financing companies and the USA's top oil and gas financing companies, respectively.

(End of the article. References and reading section is in the following part titled: Public /Private Equity Participation in Exploration: Why the creation and sustenance of junior mineral, oil, and gas companies is critical for the supply of battery minerals, gold, oil, and gas in the future: Investment Basics, Government actions, and Policy support).