

# Navigating the Climate Change Storm of ESG Withdrawal and Climate Change Commitment

written by Melissa (Mel) Sanderson | February 28, 2024

Given the recent hullabaloo around the decision of three major US financial institutions – JPMorgan, State Street and Pimco – to withdraw from Climate Action 100+ (CA+), one might think so. In addition, Blackrock announced it would remain engaged, but through its European-based offices. It appears the three financiers who have withdrawn are bowing to pressure from some Republican politicians claiming that CA+ activities are in violation of US antitrust and securities laws. But before we accept the perception that this is a death-knell for global ESG efforts, let's take a look at a few important factors about this group, its activities and relative effectiveness, as well as broader ESG "infrastructure."

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## CMI Masterclass: The Middle East's Escalating Investment Interest in Africa's Critical Minerals

written by Tracy Weslosky | February 28, 2024

The "CMI Masterclass: The Middle East's Escalating Investment

Interest in Africa's Critical Minerals" hosted by Tracy Weslosky, Director of the [Critical Minerals Institute](#) (CMI), brought together a panel of experts including CMI Directors Melissa "Mel" Sanderson, Jack Lifton, and Russell Fryer. The masterclass delved into the growing trend of Middle Eastern investment in Africa's critical minerals sector. The discussion opened with an exploration of why this trend is significant for investors and the global market. The panelists examined the reasons behind the Middle Eastern capital flow towards Africa's rich mineral resources, emphasizing its strategic importance in the global supply chain and the potential it holds for reshaping the critical minerals industry.

The conversation then shifted to the implications of this trend for American companies, particularly those committed to sustainability. A key question raised was whether Middle Eastern investments in Africa could influence or deter support from the American investment community. This part of the discussion also touched upon the competitive dynamics between China and the Middle East in Africa, considering their respective investment strategies and objectives.

Finally, the masterclass addressed the broader impacts of Middle Eastern investments in the sector, using the example of Robert Friedland's company, which received a significant investment from the Middle East. This case study led to a discussion on the potential positives and negatives of attracting Middle Eastern capital. While acknowledging the immediate financial benefits, the panelists debated the long-term implications of such investments. They explored the strategic, economic, and geopolitical ramifications, weighing the short-term gains against possible long-term challenges. This comprehensive analysis provided a nuanced understanding of the complex interplay between investment, sustainability, and global geopolitics in the critical minerals sector. To enjoy the full

# Ian Clifford on FuelPositive's first mover advantage in sustainable green ammonia production

written by InvestorNews | February 28, 2024

In a recent interview with host Tracy Weslosky, [FuelPositive Corporation](#)'s (TSXV: NHHH | OTCQB: NHHHF) Chairman and CEO Ian Clifford revealed groundbreaking developments in their mission to revolutionize the green ammonia production industry. Discussing FuelPositive's recent exclamation-worthy [news release](#) on creating the world's first decentralized, containerized Green Ammonia system, Ian highlights that their system has been validated by independent third parties and production is now scaling up.

Ammonia is an \$80 billion market and is incredibly important in agriculture. However, Ian said that traditional ammonia production is carbon-intensive. Having developed a system that eliminates carbon emissions from the production of ammonia, Ian explained how FuelPositive's green ammonia, produced onsite, could be a disruptor in the industry and is garnering a lot of interest from multiple sectors globally.

Ian also discussed how FuelPositive is well-positioned to take advantage of carbon credit markets. FuelPositive's green ammonia

production system creates valuable carbon credits allowing them to further invest in technology development and at the same time help end users reduce cost and offset the price of the system.

To access the complete interview, [click here](#)

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## About FuelPositive Corporation

FuelPositive is a Canadian technology company committed to providing commercially viable and sustainable, “cradle to cradle” clean technology solutions, including an on-farm/onsite, containerized Green Ammonia (NH<sub>3</sub>) production system that eliminates carbon emissions from the production of Green Ammonia.

By focusing on technologies that are clean, sustainable, economically advantageous and realizable, the Company aims to help mitigate climate change, addressing unsustainable agricultural practices through innovative technology and practical solutions that can be implemented now. The FuelPositive on-farm/onsite, containerized Green Ammonia production system is designed to produce pure, anhydrous ammonia for multiple applications, including fertilizer for farming, fuel for grain drying and internal combustion engines, a practical alternative for fuel cells and a solution for grid storage. Green Ammonia is also considered a key enabler of the hydrogen economy.

FuelPositive systems are designed to provide for Green Ammonia production on-farm/onsite, where and when needed. This eliminates wildly fluctuating supply chains and offers end-users clean fertilizer, energy and Green Ammonia supply security while

eliminating carbon emissions from the production process. The first customers will be farmers. Farmers use 80% of the traditional grey ammonia produced today as fertilizer.

To know more about FuelPositive Corporation, [click here](#)

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**As dynaCERT strives for cleaner air, a partnership through Cipher Neutron's deal with Strategic Resources**

# offers a greener steel

written by InvestorNews | February 28, 2024

There has long been a debate about the pace at which we should move away from fossil fuels. While many advocate for an immediate zero fossil fuel transition, the reality is much more complex. As [Dean Bristow argues](#), people in cold climates, covering most of North America, Europe, and parts of Asia, still rely on fossil fuels for warmth. Immediate alternatives, such as transitioning from coal to natural gas, are often dismissed, even though they can serve as crucial interim solutions.

An area of contention remains the transportation sector. Although electric vehicles (EVs) have gained traction, fully replacing all combustion engines with EVs remains a challenge due to infrastructural and [resource constraints](#). Meanwhile, [dynaCERT Inc.](#) (TSX: DYA | OTCQX: DYFSF) presents a compelling solution for reducing emissions from diesel engines. By producing hydrogen and oxygen on-demand, their technology, when added to diesel engines, improves combustion, reducing greenhouse gas emissions, particulate matter, and fuel consumption. This innovation is powered by distilled water and the vehicle's battery, making it an attractive interim measure until EV infrastructure becomes pervasive.

dynaCERT's HydraGEN™ system offers potential benefits not just from an environmental standpoint but also from a financial perspective. The system's ability to enhance combustion translates to less fuel consumption and a decrease in maintenance costs, such as engine oil replacements. Recent test results from the company indicate a significant reduction in various emissions, including up to 88.7% reduction in NOx and 55.3% in particulate matter.

Further emphasizing dynaCERT's commitment to cleaner energy

solutions, their partnership with Cipher Neutron Inc., a company focused on Anion Exchange Membrane (AEM) Electrolysers for Green Hydrogen production, has taken a significant stride. Earlier today ([August 16, 2023](#)), Cipher Neutron and [Strategic Resources Inc.](#) jointly announced [a collaboration](#) to explore supplying the BlackRock Project's metallurgical facility in Saguenay, Québec with AEM Electrolysers. These electrolysers are intended to produce Green Hydrogen, marking a step towards the transition to Green Steel production.

The BlackRock Project, spearheaded by Strategic Resources, is set to benefit immensely from this collaboration. Cipher Neutron's AEM Electrolysers are noted for their efficiency, cost-effectiveness, and environmental benefits. Given the project's location, the deployment of these electrolysers is strategically ideal. This venture promises to reduce greenhouse gas emissions further, with plans to deploy a significant number of AEM Green Hydrogen Electrolysers for Green Steel production.

Cipher Neutron's AEM technology represents a potential game-changer in the steel industry, which currently accounts for roughly 7% of global carbon dioxide emissions. By reducing emissions, this collaboration signifies a bold step in the transition towards a greener global economy.

In conclusion, the intersection of dynaCERT's innovations with the forward-thinking approach of Cipher Neutron and Strategic Resources showcases the potential of technology and collaboration in driving the world towards a greener future. As the transition continues, such integrated solutions may pave the way for a more sustainable and cleaner world.

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# Following the Nouveau Monde Highway to Battery Graphite

written by InvestorNews | February 28, 2024

I have some recurring themes that I tend to write about. I have no idea if people like them or not so I will continue along in my own little vacuum and hope that at least some readers out there find the same things interesting that I do.

One of those themes I like to revisit is clean, sustainable resource acquisition. By that I mean, we can't just pillage the earth for all the critical battery metals we require simply because it's a means to an end...well, we can, and currently we do. But I feel that at some point in time, there will be as much scrutiny on how we source these materials as there is on phasing out fossil fuels and reducing overall carbon emissions. At least I'd like to think that's the case, but who knows if policymakers will take that next step. To me, it seems the end goal of a greener economy is kind of pointless if we don't look at the whole picture.

Bottom line, in my opinion, we need to be just as concerned about where and how we are acquiring all the copious amounts of raw materials required to transition to a cleaner, greener future or we're simply trading in one problem for another. Whether companies are recognized for this today, or not for some time to come, I strongly believe they will eventually be rewarded.

That brings me to [Nouveau Monde Graphite Inc.](#) (NYSE: NMG | TSXV: NOU), a Québec-based company striving to become a key contributor to the sustainable energy revolution. The Company is working towards developing a fully integrated source of carbon-neutral battery anode material in Québec, Canada for the

lithium-ion battery and fuel cell markets, and other value-added graphite products. With excellent ESG standards, the Company aspires to become a strategic supplier to the world's leading battery and auto manufacturers, providing high-performing and reliable advanced materials while promoting sustainability and supply chain traceability.

The Company's activities are focused on the planned [Matawinie graphite mine](#) and the planned commercial value-added [Bécancour Battery Materials Plant](#), both of which are progressing concurrently toward commercial operations.

The Matawinie graphite property, owned 100% by the Company, consists of 246 mining claims spanning 13,214 hectares, located around 120 km north of Montréal, Québec. An updated feasibility study for this property indicates an annual processing rate of 2.55 million metric tonnes and average annual graphite production of 103,328 metric tonnes. In 2018, the Company began operating a demonstration plant in Saint-Michel-des-Saints to validate the quality and processes of its graphite products, and to serve as a foundation for its Phase-2 battery material plants. Nouveau Monde has initiated steps towards making the Matawinie Mine one of the first all-electric open-pit operations globally, working in collaboration with Caterpillar and governments to achieve electrification in mining and aiming to reduce over 300,000 tonnes of CO<sub>2</sub> emissions over the mine's lifespan.

At the same time, Nouveau Monde is progressing with its Battery Material Plant Project, producing spherical graphite at its Phase-1 facility, and leveraging a proprietary thermochemical purification process to yield graphite with purity levels surpassing 99.95%. The Company has a partnership with Olin Corporation for operational support and raw material supply, and has set up pilot plant purification modules at Olin's Bécancour,

Québec facility. Nouveau Monde owns land in Bécancour to build its own manufacturing plant, projected to produce approximately 46,000 tpa of advanced graphite materials. This is further strengthened by the Québec Government's battery hub strategy, which has attracted significant industrial players to the area. The Company's current commercial plans for its Phase-2 Bécancour Battery Material Plant are being advanced in line with a recent Feasibility Study.

Nouveau Monde's latest [quarterly operational update](#) provides valuable insights into the progress being made on both fronts. The Company announced significant advancements in the development of its fully integrated value chain, with the aim of becoming one of the largest natural graphite sources in North America. As the company approaches its Phase-2 development, emphasis is being placed on securing optimal multiyear sales agreements, finalizing technical parameters for the Bécancour Battery Material Plant, enhancing commercial visibility, and ensuring long-term shareholder value. Collaborative testing is ongoing at the Company's Phase-1 plants alongside potential customers, aiming to optimize process efficiency, inform Phase-2 facility plans, and mitigate risks. Significant partnerships have been established, including a technology collaboration with Caterpillar and a potential long-term agreement with Panasonic Energy. The Company secured US\$22 million in a [bought deal financing](#) in April to finish Q2 with a cash position of C\$59.8 million, while continuing to engage with governmental agencies to optimize project financing.

Despite a slower start to EV sales in 2023, the market saw a 36% YoY increase with further growth expected in the latter part of 2023. Benchmark Mineral Intelligence forecasts the global production capacity of lithium-ion batteries to reach 8,930 GWh by 2030, suggesting a significant growth in demand for battery materials, including graphite. Nouveau Monde's comprehensive

production model and strategic advantages, such as carbon-neutrality and regional benefits, place the company in a favorable position to cater to Western markets looking to decrease dependence on Chinese suppliers. It's not just enough to supply a critical material anymore, it needs to be done sustainably.

Nouveau Monde Graphite Inc. trades at a market cap of C\$235 million.

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# **The High Cost of Neglecting ESG in Critical Minerals Projects and Cobalt Companies ESG Survey**

written by Steve Mackowski | February 28, 2024

The article below provides some insight into the questions raised in the [Sustainability Program at PDAC 2023](#) and the price of “losing control” of a company’s Environmental, Social, and Governance (“ESG”) agenda as well as continues my series (now on part 4) on contacting Australian Stock Exchange-listed Critical Minerals companies to get their views on ESG.

## **ESG and Critical Minerals Development – The Price of Lost Control**

I was wondering how to answer a key question proffered in the Sustainability Program from PDAC 2023:

- How do you “Differentiate your company and attract investment through ESG performance and reporting?”

This is all around my previous concerns about losing control of the agenda by not being proactive with ESG; not being bold with ESG; others have taken control. This is pointedly identified in an article by Geoff Chambers, Chief Political Correspondent and Simon Benson, Political Editor in The Australian newspaper, Tuesday, March 7th, 2023. “[Investor Groups seek certainty on Labor safeguard mechanism](#)”. This is about an aggregation of some of the largest superannuation funds in Australia banding together to dictate woke ESG policy direction. Talk about lost control. This is the price of lost control. What that will eventually cost, I’ll try to discuss later, but to the point.

*“Australian investor groups representing members with \$US43 trillion in assets under management want the government to bolster the safeguard mechanism and avoid “greenwashing” by forcing heavy emitters to disclose time-bound climate transition plans.”*

I want you to think about “disclosure of time-bound climate transition plans”. Made me cringe!

1. You have to have a climate transition plan,
2. That plan is time-bound, and
3. The plan has to be disclosed.

And heaven forbid if this Investor Group (and its lobby groups) isn’t satisfied with the details in the plan. It gets worse.

*“Where technology is not yet available, carbon credits will play a vital role in helping facilities meet their obligations and remain competitive,...”*

The cost of this lost control of the ESG agenda? I find it impossible to predict the timing of when the whole Net Zero process falls apart and we wake up to some sort of new, post-climate apocalypse awakening, new-normal. But it will. But in the meantime, you have to be ready to “disclose time-bound climate transition plans” that are acceptable to the Investor Group. Sounds impossible? Does to me. That means your finance has dried up. That’s the cost of losing control. How long? Well, that depends.

## **Achieving Operational Net Zero**

So, you and I know that you cannot achieve net zero in your operations. You and I also know that you thought you only have two options going forward. One is to plug the gap by buying carbon credits. The other is to hope this whole movement will come to a true sense of realization and fall apart. Any thoughts on how you are going to include “not yet available technology” in your plan? There are also politicians who don’t want carbon credits allowed since “real” emissions reduction isn’t occurring.

You have to ask yourselves the question: “Am I prepared to regain control of the agenda?” If your answer is yes, then go back through my articles where I have told you what to do to demonstrate your ESG credentials. And if you need a good operating example, look at Ioneer Ltd posted in [Article 3](#) of this series. You need to get going. How much time (and hence money) do you have? Well, until the key part of the Net Zero program fails and its failure is seen as a death knell to the 2050 target. What is the key part?

## **The HR Dilemma**

Human Resources. The western world will come to a point where it

will realize that it has taken 2 generations to completely overwhelm our education system with anti-STEM, pro-end of the world cataclysmic theories where fossil fuels are bad, development is bad, the future of the planet is at risk. OK, we have a self-induced climate change awareness revolution. But see the irony here? Who is going to fix it? Where is [STEM](#)? By creating the environment for the outrage around climate change we have decimated the education system that is needed to provide the resources required to fix it.

The following article by Simon Packham, Foreign Affairs and Defence Correspondent, again from The Australian newspaper, Tuesday, March 6th, 2023. "[Submarines 'need 108 Ph.D. level nuclear scientists per year'](#)". Not sure if this situation rings true in the US, but it should certainly be ringing alarm bells for those people who think that developing approximately 10 times our current world outputs for rare earths, lithium, vanadium, cobalt, copper, etc is a simple walk in the park. Where are the Human Resources coming from? So, the answer to when is the announcement that the Net Zero program failed is the timeline of acceptance of the Human Resources issue.

Oh, the Price of the Lost Control? Your unrealized profits during this period. And more, much more.

## **ESG and ASX-listed Cobalt Companies**

The process of contacting key Australian Stock Exchange-listed Critical Minerals companies to get their views on ESG has continued this week. The table below for Cobalt will complete the first round of contacting key players. Future articles will hopefully cover the responses coming in, and possibly then contacting some of the lesser players. We will see how that goes. Previous articles 1-3 provide context for anyone who has missed that.

I have updated the Rare Earths reference table and am still to receive any responses. (***See Appendix A: ESG in Rare Earths development***)

I have updated the Lithium reference table to include the [response](#) of Ian Bucknell of Ioneer Ltd. (Thanks Ian.) (***See Appendix B: ESG in Lithium development.***)

I totally recommend people interested in ESG to read the Ioneer [2022 Sustainability and ESG Report](#). Their approach using the Towards Sustainable Mining (TSM) framework is first class and looks to have today's ESG needs well covered.

I have updated the Vanadium reference table and have received no responses to date. ***See Appendix C: ESG in Vanadium development***)

Below is the Cobalt reference table. In the next issue, we will allow access to the tables via links and similarly with the ESG responses from the queried companies.

## Cobalt Companies

Cobalt Company (Ticker link to Share Price History)	Web Site	Mkt Cap AUS\$ (Mar. 12, 2023)	ESG Response
A-Cap Energy Ltd ( <a href="#">ASX: ACB</a> )	<a href="http://www.acap.com.au">www.acap.com.au</a>	\$73.24M	Queried Mar 12
Aeon Metals Ltd ( <a href="#">ASX: AML</a> )	<a href="http://www.aeonmetals.com.au">www.aeonmetals.com.au</a>	\$25.33M	



Aus Tin Mining Ltd (ASX: ANW)	<a href="http://www.clararesources.com.au">www.clararesources.com.au</a>	\$14.22M	
Auroch Minerals Ltd (ASX: AOU)	<a href="http://www.aurochminerals.com">www.aurochminerals.com</a>	\$22.46M	
Ardea Resources Ltd (ASX: ARL)	<a href="http://www.ardearesources.com.au">www.ardearesources.com.au</a>	\$84.04M	Queried Mar 12
Artemis Resources Ltd (ASX: ARV)	<a href="http://www.artemisresources.com.au">www.artemisresources.com.au</a>	\$19.48M	
Anson Resources Ltd (ASX: ASN)	<a href="http://www.ansonresources.com">www.ansonresources.com</a>	\$253.56M	Queried Mar 12
Australian Mines Ltd (ASX: AUZ)	<a href="http://www.australianmines.com.au">www.australianmines.com.au</a>	\$21.04M	
Archer Materials Ltd (ASX: AXE)	<a href="http://www.archerx.com.au">www.archerx.com.au</a>	\$116.95M	Queried Mar 12
Blackstone Minerals Ltd (ASX: BSX)	<a href="http://www.blackstoneminerals.com.au">www.blackstoneminerals.com.au</a>	\$75.81M	Queried Mar 12

Castillo Copper Ltd (ASX: CCZ)	<a href="http://www.castillocopper.com">www.castillocopper.com</a>	\$18.19M	
Celsius Resources Ltd (ASX: CLA)	<a href="http://www.celsiusresources.com.au">www.celsiusresources.com.au</a>	\$22.29M	
Cobalt Blue Holdings Ltd (ASX: COB)	<a href="http://www.cobaltblueholdings.com">www.cobaltblueholdings.com</a>	\$122.25M	Queried Mar 12
Corazon Mining Ltd (ASX: CZN)	<a href="http://www.corazon.com.au">www.corazon.com.au</a>	\$8.79M	
Fe Ltd (ASX: FEL)	<a href="http://www.cufe.com.au">www.cufe.com.au</a>	\$25.83M	
Golden Deepes Ltd (ASX: GED)	<a href="http://www.goldendeeps.com">www.goldendeeps.com</a>	\$10.97M	
Greenstone Resources Ltd (ASX: GSR)	<a href="http://www.greenstoneresources.com.au">www.greenstoneresources.com.au</a>	\$25.36M	Queried Mar 12
GME Resources Ltd (ASX: GME)	<a href="http://www.gmeresources.com.au">www.gmeresources.com.au</a>	\$64.25M	Queried Mar 12
Havilah Resources Ltd (ASX: HAV)	<a href="http://www.havilah-resources-projects.com">www.havilah-resources-projects.com</a>	\$106.07M	Queried Mar 12

Hammer Metals Ltd (ASX: HMX)	<a href="http://www.hammermetals.com.au">www.hammermetals.com.au</a>	\$49.28M	Queried Mar 12
Jervois Global Ltd (ASX: JRV)	<a href="http://www.jervoisglobal.com">www.jervoisglobal.com</a>	\$332.68M	Queried Mar 12
Metalicity Ltd (ASX: MCT)	<a href="http://www.metalicity.com.au">www.metalicity.com.au</a>	\$5.19M	
Meteoric Resources NL (ASX: MEI)	<a href="http://www.meteoric.com.au">www.meteoric.com.au</a>	\$168.34M	Queried Mar 12
Marquee Resources Ltd (ASX: MQR)	<a href="http://www.marqueeresources.com.au">www.marqueeresources.com.au</a>	\$7.66M	
Platina Resources Ltd (ASX: PGM)	<a href="http://www.platinaresources.com.au">www.platinaresources.com.au</a>	\$11.22M	
Riedel Resources Ltd (ASX: RIE)	<a href="http://www.riedelresources.com.au">www.riedelresources.com.au</a>	\$9.60M	
St George Mining Ltd (ASX: SGQ)	<a href="http://www.stgm.com.au">www.stgm.com.au</a>	\$54.48M	Queried Mar 12
Trek Metals Ltd (ASX: TKM)	<a href="http://www.trekmetals.com.au">www.trekmetals.com.au</a>	\$26.20M	

# Appendix A: ESG in Rare Earths Development

Rare Earths Company (Ticker link to Share Price History)	Web Site	Mkt Cap AUS\$ (Mar. 12, 2023)	ESG Response
Alpha Hpa Ltd ( <a href="#">ASX: A4N</a> )	<a href="http://www.Alphahpa.com.au">www.Alphahpa.com.au</a>	\$574.95M	Queried Feb 15
ABX Group Ltd ( <a href="#">ASX: ABX</a> )	<a href="http://www.abxgroup.com.au">www.abxgroup.com.au</a>	\$25.71M	
Alkane Resources Ltd ( <a href="#">ASX: ALK</a> )	<a href="http://www.alkane.com.au">www.alkane.com.au</a>	\$392.21M	Queried Feb 15
Alchemy Resources Ltd ( <a href="#">ASX: ALY</a> )	<a href="http://www.alchemyresources.com.au">www.alchemyresources.com.au</a>	\$13.25M	
American Rare Earths Ltd ( <a href="#">ASX: ARR</a> )	<a href="http://www.americanrareearths.com.au">www.americanrareearths.com.au</a>	\$91.51M	Queried Feb 15
Arafura Rare Earths Ltd ( <a href="#">ASX: ARU</a> )	<a href="http://www.arultd.com">www.arultd.com</a>	\$1.23B	Queried Feb 15

Austin Metals Limited ( <a href="#">ASX: AYT</a> )	<a href="http://www.austinmentals.com.au">www.austinmentals.com.au</a>	\$4.54M	
Australian Mines Ltd ( <a href="#">ASX: AUZ</a> )	<a href="http://www.australianmines.com.au">www.australianmines.com.au</a>	\$21.04M	
Australian United Mining Ltd ( <a href="#">ASX: AYM</a> )	<a href="http://www.australianunitedmining.com.au">www.australianunitedmining.com.au</a>	\$5.53M	
Australian Strategic Materials Ltd ( <a href="#">ASX: ASM</a> )	<a href="http://www.asm-au.com">www.asm-au.com</a>	\$230.89M	Queried Feb 15
Encounter Resources Ltd ( <a href="#">ASX: ENR</a> )	<a href="http://www.encounterresorces.com.au">www.encounterresorces.com.au</a>	\$46.22M	
Enova Mining Ltd ( <a href="#">ASX: ENV</a> )	<a href="http://www.enovamining.com">www.enovamining.com</a>	\$4.69M	
Hastings Technology Metals Ltd ( <a href="#">ASX: HAS</a> )	<a href="http://www.hastingstechmetals.com">www.hastingstechmetals.com</a>	\$360.41M	Queried Feb 15

Iluka Resources Ltd ( <a href="#">ASX: ILU</a> )	<a href="http://www.iluka.com">www.iluka.com</a>	\$4.43B	Queried Feb 15
Ionic Rare Earths Ltd ( <a href="#">ASX: IXR</a> )	<a href="http://www.ionicre.com.au">www.ionicre.com.au</a>	\$126.41M	Queried Feb 15
Krakatoa Resources Ltd ( <a href="#">ASX: KTA</a> )	<a href="http://www.ktaresources.com">www.ktaresources.com</a>	\$12.13M	
Legacy Iron Ore Ltd ( <a href="#">ASX: LCY</a> )	<a href="http://www.legacyiron.com.au">www.legacyiron.com.au</a>	\$115.32M	Queried Feb 15
Lindian Resources Ltd ( <a href="#">ASX: LIN</a> )	<a href="http://www.lindianresources.com.au">www.lindianresources.com.au</a>	\$268.88M	Queried 15 Feb
Lanthanein Resources Ltd ( <a href="#">ASX: LNR</a> )	<a href="http://www.lanthanein.com">www.lanthanein.com</a>	\$17.16M	
Lynas Rare Earths Ltd ( <a href="#">ASX: LYC</a> )	<a href="http://www.lynasrareearths.com">www.lynasrareearths.com</a>	\$6.43B	Queried Feb 15
Minbos Resources Ltd ( <a href="#">ASX: MNB</a> )	<a href="http://www.minbos.com">www.minbos.com</a>	\$115.53M	Queried Feb 15

Mount Ridley Mines Ltd ( <a href="#">ASX: MRD</a> )	<a href="http://www.mtridleymines.com.au">www.mtridleymines.com.au</a>	\$11.68M	
Northern Minerals Ltd ( <a href="#">ASX: NTU</a> )	<a href="http://www.northernminerals.com.au">www.northernminerals.com.au</a>	\$223.92M	Queried Feb 15
Nova Minerals Ltd ( <a href="#">ASX: NVA</a> )	<a href="http://www.novaminerals.com.au">www.novaminerals.com.au</a>	\$93.91M	Queried Feb 15
Orion Metals Ltd ( <a href="#">ASX: ORM</a> )	<a href="http://www.orionmetals.com.au">www.orionmetals.com.au</a>	\$16.35M	
Peak Rare Earths Ltd ( <a href="#">ASX: PEK</a> )	<a href="http://www.peakrareearths.com">www.peakrareearths.com</a>	\$116.65M	Queried Feb 15
Platina Resources Ltd ( <a href="#">ASX: PGM</a> )	<a href="http://www.platinaresources.com.au">www.platinaresources.com.au</a>	\$11.22M	
Prospect Resources Ltd ( <a href="#">ASX: PSC</a> )	<a href="http://www.prospectresources.com.au">www.prospectresources.com.au</a>	\$99.39M	
Petratherm Ltd ( <a href="#">ASX: PTR</a> )	<a href="http://www.petratherm.com.au">www.petratherm.com.au</a>	\$13.04M	

RareX Ltd ( <a href="#">ASX: REE</a> )	<a href="http://www.clancyexploration.com">www.clancyexploration.com</a>	\$28.39M	
Sunshine Gold Ltd ( <a href="#">ASX: SHN</a> )	<a href="http://www.shngold.com.au">www.shngold.com.au</a>	\$10.47M	
Stavelly Minerals Ltd ( <a href="#">ASX: SVY</a> )	<a href="http://www.stavelly.com.au">www.stavelly.com.au</a>	\$60.49M	
Tempus Resources Ltd ( <a href="#">ASX: TMR</a> )	<a href="http://www.tempusresources.com.au">www.tempusresources.com.au</a>	\$12.47M	
Todd River Resources Ltd ( <a href="#">ASX: TRT</a> )	<a href="http://www.trrltd.com.au">www.trrltd.com.au</a>	\$9.46M	
Venus Metals Corporation Ltd ( <a href="#">ASX: VMC</a> )	<a href="http://www.venusmetals.com.au">www.venusmetals.com.au</a>	\$26.71M	
Vital Metals Ltd ( <a href="#">ASX: VML</a> )	<a href="http://www.vitalmetals.com.au">www.vitalmetals.com.au</a>	\$122.57M	Queried Feb 15

## Appendix B: ESG in Lithium



# Development

Lithium Company (Ticker link to Share Price History)	Web Site	Mkt Cap AUS\$ (Mar. 12, 2023)	ESG Response
Aurora Energy Metals Ltd ( <a href="#">ASX: 1AE</a> )	<a href="http://www.auroraenergymetals.com">www.auroraenergymetals.com</a>	\$12.28M	
Australasian Metals Ltd ( <a href="#">ASX: A8G</a> )	<a href="http://www.australasiangold.com">www.australasiangold.com</a>	\$8.07M	
Ardiden Ltd ( <a href="#">ASX: ADV</a> )	<a href="http://www.ardiden.com.au">www.ardiden.com.au</a>	\$18.82M	
Argosy Minerals Ltd ( <a href="#">ASX: AGY</a> )	<a href="http://www.argosyminerals.com.au">www.argosyminerals.com.au</a>	\$920.38M	Queried Feb 26
Allkem ( <a href="#">ASX: AKE</a> )	<a href="http://www.allkem.co">www.allkem.co</a>	\$7.26B	Queried Feb 26
Arrow Minerals Ltd ( <a href="#">ASX: AMD</a> )	<a href="http://www.arrowminerals.com">www.arrowminerals.com</a>	\$10.47M	
Anson Resources Ltd ( <a href="#">ASX: ASN</a> )	<a href="http://www.ansonresources.com">www.ansonresources.com</a>	\$253.56M	

Australian Vanadium Ltd ( <a href="#">ASX: AVL</a> )	<a href="http://www.australianvanadium.com.au">www.australianvanadium.com.au</a>	\$153.60M	
BMG Resources Ltd ( <a href="#">ASX: BMG</a> )	<a href="http://www.bmgl.com.au">www.bmgl.com.au</a>	\$4.63M	
Benz Mining Corp ( <a href="#">ASX: BNZ</a> )	<a href="http://www.benzmining.com">www.benzmining.com</a>	\$49.49M	
Boadicea Resources Ltd ( <a href="#">ASX: BOA</a> )	<a href="http://www.boadicea.net.au">www.boadicea.net.au</a>	\$7.11M	
Cullen Resources Ltd ( <a href="#">ASX: CUL</a> )	<a href="http://www.cullenresources.com.au">www.cullenresources.com.au</a>	\$6.56M	
Core Lithium Ltd ( <a href="#">ASX: CX0</a> )	<a href="http://www.corelithium.com.au">www.corelithium.com.au</a>	\$1.75B	Queried Feb 26
De Grey Mining Ltd ( <a href="#">ASX: DEG</a> )	<a href="http://www.degremining.com.au">www.degremining.com.au</a>	\$2.19B	Queried Feb 26
Devex Resources Ltd ( <a href="#">ASX: DEV</a> )	<a href="http://www.devexresources.com.au">www.devexresources.com.au</a>	\$101.96M	
Dart Mining NL ( <a href="#">ASX: DTM</a> )	<a href="http://www.dartmining.com.au">www.dartmining.com.au</a>	\$6.86M	

European Metals Holdings Ltd ( <a href="#">ASX: EMH</a> )	<a href="http://www.europeanmet.com">www.europeanmet.com</a>	GBP72.64M	
Essential Metals Ltd ( <a href="#">ASX: ESS</a> )	<a href="http://www.essmetals.com.au">www.essmetals.com.au</a>	\$127.12M	
European Lithium Ltd ( <a href="#">ASX: EUR</a> )	<a href="http://www.europeanlithium.com">www.europeanlithium.com</a>	\$111.84M	
EV Resources Ltd ( <a href="#">ASX: EVR</a> )	<a href="http://www.evresources.com.au">www.evresources.com.au</a>	\$14.04M	
Global Lithium Resources Ltd ( <a href="#">ASX: GL1</a> )	<a href="http://www.globallithium.com.au">www.globallithium.com.au</a>	\$320.83M	
Galan Lithium Ltd ( <a href="#">ASX: GLN</a> )	<a href="http://www.galanlithium.com.au">www.galanlithium.com.au</a>	\$349.95M	
Hannans Ltd ( <a href="#">ASX: HNR</a> )	<a href="http://www.hannans.com">www.hannans.com</a>	\$31.33M	
Hawkstone Mining Ltd ( <a href="#">ASX: HWK</a> )	<a href="http://www.hawkstonemining.com.au">www.hawkstonemining.com.au</a>	\$134.34M	

Infinity Lithium Corporation Ltd ( <a href="#">ASX: INF</a> )	<a href="http://www.infinitylithium.com">www.infinitylithium.com</a>	\$48.57M	
Ioneer Ltd ( <a href="#">ASX: INR</a> )	<a href="http://www.ioneer.com">www.ioneer.com</a>	\$672.22M	<a href="#">Reply Feb 28</a>
Jindalee Resources Ltd ( <a href="#">ASX: JRL</a> )	<a href="http://www.jindalee.net">www.jindalee.net</a>	\$154.92M	
Korab Resources Ltd ( <a href="#">ASX: KOR</a> )	<a href="http://www.korabresources.com.au">www.korabresources.com.au</a>	\$8.08M	
Krakatoa Resources Ltd ( <a href="#">ASX: KTA</a> )	<a href="http://www.ktaresources.com">www.ktaresources.com</a>	\$12.13M	
Li-S Energy Ltd ( <a href="#">ASX: LIS</a> )	<a href="http://www.lis.energy">www.lis.energy</a>	\$39.02M	
Lithium Australia Ltd ( <a href="#">ASX: LIT</a> )	<a href="http://www.lithium-au.com">www.lithium-au.com</a>	\$46.41M	
Lake Resources NL ( <a href="#">ASX: LKE</a> )	<a href="http://www.lakeresources.com.au">www.lakeresources.com.au</a>	\$838.27M	Queried Feb 26
Lanthanein Resources Ltd ( <a href="#">ASX: LNR</a> )	<a href="http://www.lanthanein.com">www.lanthanein.com</a>	\$17.16M	

Lepidico Ltd ( <a href="#">ASX: LPD</a> )	<a href="http://www.lepidico.com">www.lepidico.com</a>	\$74.47M	
Lithium Power International Ltd ( <a href="#">ASX: LPI</a> )	<a href="http://www.lithiumpowerinternational.com">www.lithiumpowerinternational.com</a>	\$201.54M	
Latin Resources Ltd ( <a href="#">ASX: LRS</a> )	<a href="http://www.latinresources.com.au">www.latinresources.com.au</a>	\$242.64M	
Liontown Resources Ltd ( <a href="#">ASX: LTR</a> )	<a href="http://www.ltresources.com.au">www.ltresources.com.au</a>	\$3.42B	Queried Feb 26
Mineral Resources Ltd ( <a href="#">ASX: MIN</a> )	<a href="http://www.mineralresources.com.au">www.mineralresources.com.au</a>	\$16.04B	Queried Feb 26
Metals Australia Ltd ( <a href="#">ASX: MLS</a> )	<a href="http://www.metalsaustralia.com.au">www.metalsaustralia.com.au</a>	\$26.13M	
Marquee Resources Ltd ( <a href="#">ASX: MQR</a> )	<a href="http://www.marqueeresources.com.au">www.marqueeresources.com.au</a>	\$7.66M	
Morella Corporation Ltd ( <a href="#">ASX: 1MC</a> )	<a href="http://www.morellacorp.com">www.morellacorp.com</a>	\$54.88M	
Neometals Ltd ( <a href="#">ASX: NMT</a> )	<a href="http://www.neometals.com.au">www.neometals.com.au</a>	\$370.34M	Queried Feb 26

Nova Minerals Ltd ( <a href="#">ASX: NVA</a> )	<a href="http://www.novaminerals.com.au">www.novaminerals.com.au</a>	\$93.91M	
Piedmont Lithium Inc ( <a href="#">ASX: PLL</a> )	<a href="http://www.piedmontlithium.com">www.piedmontlithium.com</a>	\$1.62B	Queried Feb 26
Pilbara Minerals Ltd ( <a href="#">ASX: PLS</a> )	<a href="http://www.pilbaraminerals.com.au">www.pilbaraminerals.com.au</a>	\$11.93B	Queried Feb 26
Power Minerals Ltd ( <a href="#">ASX: PNN</a> )	<a href="http://www.pepinnini.com.au">www.pepinnini.com.au</a>	\$29.98M	
Poseidon Nickel Ltd ( <a href="#">ASX: POS</a> )	<a href="http://www.poseidon-nickel.com.au">www.poseidon-nickel.com.au</a>	\$110.29M	
Prospect Resources Ltd ( <a href="#">ASX: PSC</a> )	<a href="http://www.prospectresources.com.au">www.prospectresources.com.au</a>	\$99.39M	
Red Dirt Metals Ltd ( <a href="#">ASX: RDT</a> )	<a href="http://www.reddirtmetals.com.au">www.reddirtmetals.com.au</a>	\$171.29M	
Rio Tinto Ltd ( <a href="#">ASX: RIO</a> )	<a href="http://www.riotinto.com">www.riotinto.com</a>	\$173.05B	Queried Feb 26
Reedy Lagoon Corporation Ltd ( <a href="#">ASX: RLC</a> )	<a href="http://www.reedylagonn.com.au">www.reedylagonn.com.au</a>	\$3.70M	

Strike Resources Ltd ( <a href="#">ASX: SRK</a> )	<a href="http://www.strikeresources.com.au">www.strikeresources.com.au</a>	\$20.43M	
Sayona Mining Ltd ( <a href="#">ASX: SYA</a> )	<a href="https://sayonamining.com.au/about/">https://sayonamining.com.au/about/</a>	\$2.00B	Queried Feb 26
Taruga Minerals Ltd ( <a href="#">ASX: TAR</a> )	<a href="http://www.targunaminerals.com.au">www.targunaminerals.com.au</a>	\$11.30M	
Tempest Minerals Ltd ( <a href="#">ASX: TEM</a> )	<a href="http://www.tempestminerals.com">www.tempestminerals.com</a>	\$12.81M	
Traka Resources Ltd ( <a href="#">ASX: TKL</a> )	<a href="http://www.trakaresources.com">www.trakaresources.com</a>	\$5.20M	
Todd River Resources Ltd ( <a href="#">ASX: TRT</a> )	<a href="http://www.trrltd.com.au">www.trrltd.com.au</a>	\$9.46M	
Venus Metals Corporation Ltd ( <a href="#">ASX: VMC</a> )	<a href="http://www.venusmetals.com.au">www.venusmetals.com.au</a>	\$26.71M	
Vulcan Energy Resources Ltd ( <a href="#">ASX: VUL</a> )	<a href="http://www.v-er.com">www.v-er.com</a>	\$902.21M	Queried Feb 26
Woomera Mining Ltd ( <a href="#">ASX: WML</a> )	<a href="http://www.woomeramining.com.au">www.woomeramining.com.au</a>	\$12.43M	

Zenith Minerals Ltd ( <a href="#">ASX: ZNC</a> )	<a href="http://www.zenithminerals.com.au">www.zenithminerals.com.au</a>	\$75.62M	
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## Appendix C: ESG in Vanadium Development

Vanadium Company (Ticker link to Share Price History)	Web Site	Mkt Cap AUS\$ (Mar 12, 2023)	ESG Response
Aura Energy Ltd ( <a href="#">ASX: AEE</a> )	<a href="http://www.auraenergy.com.au">www.auraenergy.com.au</a>	\$170.43M	Queried Mar 4
Australian Vanadium Ltd ( <a href="#">ASX: AVL</a> )	<a href="http://www.australianvanadium.com.au">www.australianvanadium.com.au</a>	\$153.60M	Queried Mar 4
Golden Deeps Ltd ( <a href="#">ASX: GED</a> )	<a href="http://www.goldendeeps.com">www.goldendeeps.com</a>	\$10.97M	
Liontown Resources Ltd ( <a href="#">ASX: LTR</a> )	<a href="http://www.ltresources.com.au">www.ltresources.com.au</a>	\$3.42B	Queried Mar 4
Neometals Ltd ( <a href="#">ASX: NMT</a> )	<a href="http://www.neometals.com.au">www.neometals.com.au</a>	\$370.34M	Queried Mar 4
Protean Energy Ltd ( <a href="#">ASX: POW</a> )	<a href="http://www.proteanenergy.com">www.proteanenergy.com</a>	\$5.2M	
Pursuit Minerals Ltd ( <a href="#">ASX: PUR</a> )	<a href="http://www.pursuitminerals.com.au">www.pursuitminerals.com.au</a>	\$26.12M	Queried Mar 4
QEM Ltd ( <a href="#">ASX: QEM</a> )	<a href="http://www.qldem.com.au">www.qldem.com.au</a>	\$28.38M	Queried Mar 4
Red Dirt Metals Ltd ( <a href="#">ASX: RDT</a> )	<a href="http://www.reddirtmetals.com.au">www.reddirtmetals.com.au</a>	\$171.29M	Queried Mar 4



Sabre Resources Ltd ( <a href="#">ASX: SBR</a> )	<a href="http://www.sabreresources.com">www.sabreresources.com</a>	\$8.45M	
Santa Fe Minerals Ltd ( <a href="#">ASX: SFM</a> )	<a href="http://www.santafeminerals.com.au">www.santafeminerals.com.au</a>	\$4.95M	
SI6 Metals Ltd ( <a href="#">ASX: SI6</a> )	<a href="http://www.si6metals.com">www.si6metals.com</a>	\$8.22M	
Surefire Resources.NL ( <a href="#">ASX: SRN</a> )	<a href="http://www.surefireresources.com.au">www.surefireresources.com.au</a>	\$28.46M	Queried Mar 4
Syrah Resources Ltd ( <a href="#">ASX: SYR</a> )	<a href="http://www.syrahresources.com.au">www.syrahresources.com.au</a>	\$1.17B	Queried Mar 4
Technology Metals Australia Ltd ( <a href="#">ASX: TMT</a> )	<a href="http://www.tmtlimited.com.au">www.tmtlimited.com.au</a>	\$58.75M	Queried Mar 4
Tivan Limited ( <a href="#">ASX: TVN</a> )	<a href="http://www.tivan.com.au">www.tivan.com.au</a>	\$113.85M	Queried Mar 4
Triton Minerals Ltd ( <a href="#">ASX: TON</a> )	<a href="http://www.tritonminerals.com">www.tritonminerals.com</a>	\$45.63M	Queried Mar 4
Venus Metals Corporation Ltd ( <a href="#">ASX: VMC</a> )	<a href="http://www.venusmetals.com.au">www.venusmetals.com.au</a>	\$26.71M	Queried Mar 4
Vanadium Resources Ltd ( <a href="#">ASX: VR8</a> )	<a href="http://www.vr8.global">www.vr8.global</a>	\$33.91M	Queried Mar 4

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## The ESG Strategy for Vanadium Companies and PDAC 2023's

# Sustainability Program

written by Steve Mackowski | February 28, 2024

With the Prospectors & Developers Association of Canada (“PDAC”) convention back in Toronto, Canada, I’ll discuss the four days Sustainability Sessions agenda as I view Environmental, Social, and Governance (“ESG”). I’ll include these comments in each weekly update of my “ESG and Critical Minerals Development” series. See after the Vanadium table.

The process of contacting key Australian Stock Exchange-listed Critical Minerals companies to get their views on ESG continued this week. I am looking to assuage the concerns of some of our stakeholders as to the ESG credentials of those Australia-based organizations that are in a position to supply and add value to the Critical Minerals shortage the world is now facing. The questions are not designed as a platform for investment decisions, but as an important step towards letting you know what their values are, what their achievements have been, and where they see our industry heading. The reference table will include the company name, the ASX Ticker code, their website reference, their current Market Capitalization, and their response to the ESG questionnaire.

The reference table will include all of the Australia-based companies that qualify for the [Australian Critical Minerals Strategy](#).

The questions were:

1. A brief description of your activities
2. How do you define ESG?
3. What should stakeholders be aware of in your approach to ESG?

4. How do you see ESG becoming an important function in the future?
5. Do you have any ESG lessons learned that you may wish to share?

I have updated the Rare Earths reference table and am still to receive any responses. (**See Appendix A: ESG in Rare Earths development**)

I have updated the Lithium reference table to include the [response](#) of Ian Bucknell of Ioneer Ltd. (Thanks Ian.) (**See Appendix B: ESG in Lithium development.**)

I recommend for people interested in ESG, they should read the Ioneer [2022 Sustainability and ESG Report](#). Their approach using the Towards Sustainable Mining (TSM) framework is first class and looks to have today's ESG needs well covered.

Below is the Vanadium reference table. In the next issue will be the Cobalt table. Each issue will allow access to the tables via links and similarly with the ESG responses from the queried companies.

<b>Vanadium Company (Ticker link to Share Price History)</b>	<b>Web Site</b>	<b>Mkt Cap AUS\$ (Mar 2 2023)</b>	<b>ESG Response</b>
Aura Energy Ltd ( <a href="#">ASX: AEE</a> )	<a href="http://www.auraenergy.com.au">www.auraenergy.com.au</a>	\$157.43M	Queried Mar 4
Australian Vanadium Ltd ( <a href="#">ASX: AVL</a> )	<a href="http://www.australianvanadium.com.au">www.australianvanadium.com.au</a>	\$144.00M	Queried Mar 4
Golden Deep Ltd ( <a href="#">ASX: GED</a> )	<a href="http://www.goldendeeps.com">www.goldendeeps.com</a>	\$9.36M	

Liontown Resources Ltd ( <a href="#">ASX: LTR</a> )	<a href="http://www.ltresources.com.au">www.ltresources.com.au</a>	\$3.14B	Queried Mar 4
Neometals Ltd ( <a href="#">ASX: NMT</a> )	<a href="http://www.neometals.com.au">www.neometals.com.au</a>	\$454.35M	Queried Mar 4
Protean Energy Ltd ( <a href="#">ASX: POW</a> )	<a href="http://www.proteanenergy.com">www.proteanenergy.com</a>	\$5.2M	
Pursuit Minerals Ltd ( <a href="#">ASX: PUR</a> )	<a href="http://www.pursuitminerals.com.au">www.pursuitminerals.com.au</a>	\$24.76M	Queried Mar 4
QEM Ltd ( <a href="#">ASX: QEM</a> )	<a href="http://www.qldem.com.au">www.qldem.com.au</a>	\$28.36M	Queried Mar 4
Red Dirt Metals Ltd ( <a href="#">ASX: RDT</a> )	<a href="http://www.reddirtmetals.com.au">www.reddirtmetals.com.au</a>	\$167.00M	Queried Mar 4
Sabre Resources Ltd ( <a href="#">ASX: SBR</a> )	<a href="http://www.sabreresources.com">www.sabreresources.com</a>	\$9.02M	
Santa Fe Minerals Ltd ( <a href="#">ASX: SFM</a> )	<a href="http://www.santafeminerals.com.au">www.santafeminerals.com.au</a>	\$5.46M	
SI6 Metals Ltd ( <a href="#">ASX: SI6</a> )	<a href="http://www.si6metals.com">www.si6metals.com</a>	\$4.49M	
Surefire Resources.NL ( <a href="#">ASX: SRN</a> )	<a href="http://www.surefireresources.com.au">www.surefireresources.com.au</a>	\$30.99M	Queried Mar 4
Syrah Resources Ltd ( <a href="#">ASX: SYR</a> )	<a href="http://www.syrahresources.com.au">www.syrahresources.com.au</a>	\$1.30B	Queried Mar 4
Technology Metals Australia Ltd ( <a href="#">ASX: TMT</a> )	<a href="http://www.tmtlimited.com.au">www.tmtlimited.com.au</a>	\$61.90M	Queried Mar 4
Tivan Limited ( <a href="#">ASX: TVN</a> )	<a href="http://www.tivan.com.au">www.tivan.com.au</a>	\$118.12M	Queried Mar 4
Triton Minerals Ltd ( <a href="#">ASX: TON</a> )	<a href="http://www.tritonminerals.com">www.tritonminerals.com</a>	\$38.72M	Queried Mar 4

Venus Metals Corporation Ltd ( <a href="#">ASX: VMC</a> )	<a href="http://www.venusmetals.com.au">www.venusmetals.com.au</a>	\$29.19M	Queried Mar 4
Vanadium Resources Ltd ( <a href="#">ASX: VR8</a> )	<a href="http://www.vr8.global">www.vr8.global</a>	\$31.49M	Queried Mar 4

Again, as an aside, if I was responsible for responding to the above query, I would also publish that response to the ASX and include it on the website for an ongoing reference.

## PDAC 2023 – The World’s Premier Mineral Exploration & Mining Convention

### Sustainability Program

“[The Sustainability Program](#) aims to facilitate multi-stakeholder dialogue and peer-learning on key issues related to responsible exploration and mining.”

“The Sustainability Program features presentations and dialogue that examine the innovative ways in which mineral exploration and mining companies are working to improve their sustainability performance, presenting challenges and successes, as well as lessons learned. Topics discussed at the Sustainability Program are both current and critical to the continued improvement of the performance in the industry.”

**Sunday, March 5, 2023**

- Operationalizing the “S” in ESG: Does it matter to investors?
- Negotiating agreements in early exploration: Best practice MOU’s and EA’s

## **Monday, March 6, 2023**

- Differentiate your company and attract investment through ESG performance and reporting
- Leveraging agreements for Indigenous economic inclusion: Practical implementation
- The amazing race to decarbonize
- Is the future nuclear? Community and industry perspectives

## **Tuesday, March 7, 2023**

- Planning for sustainable mineral development 101
- Navigation complex waters: Tools for security, conflict and human rights
- Changing global rules? The impact of EU's raw materials strategy

## **Wednesday, March 8, 2023**

- Addressing sexual harassment: Exploring obligations, risks and solutions in Canadian mining

Looking at the articles to be presented they can also be considered as sub-sets of the 5 questions that I have forwarded to the ASX listed Critical Mineral companies. I would be very interested if any of you attend PDAC 2023 and are part of the Sustainability Program. Could you comment as to their articles and the appropriateness and coverage of my questions?

# **ESG and Critical Mineral Development**

## Question 2: How do you define ESG?

I want to get something off my chest that has been brewing for the last few years. I am so disappointed in our Corporate world. They have lost control of the ESG agenda. Instead of leading, they have stayed mute and allowed the left-wing woke brigade to establish their agenda. Let me explain.

In my career building management systems in the resources industry, I used a term called SEQ management. That was Safety, Environment, and Quality. Done properly, it totally covered the now ESG agenda, but with a key difference. And what is the difference, you may ask? Simple. We were in control of the agenda. You see, I see ESG (then SEQ) not as your social license, since that is undefinable, but as your social credentials.

Environmentally, you certify your systems to the ISO standard. In Safety and Health, again the ISO standards are available. The Quality systems look after your production processes. Supported by improvement groups working on the key issues, you are set up to handle any issue that may arise. Or that you may want to stay in front of. You are in control. But you may say that the new issues such as climate change, inclusion, or equality are not covered. Well, they are. Climate change is controlled by having the lowest power consumption in your industry group. You may wish to include CO<sub>2</sub> emissions equivalent if you wish, and it makes economic sense to do that. Inclusion can be treated under your health management systems and processes. Equality can be dealt with similarly.

Had the Corporate world been in front of SEQ then the ESG wave would have stayed a ripple, instead of a tsunami, as some folks see it. And you would be in front of it, instead of seeing it reactively as a challenge. Still, it's with us now. Get in front

and be public about your results. Have a read of the Ioneer report referenced earlier. It can be done.

## Appendix A: ESG in Rare Earths development

Rare Earths Company (Ticker link to Share Price History)	Web Site	Mkt Cap AUS\$ (Mar 5, 2023)	ESG Response
Alpha Hpa Ltd ( <a href="#">ASX: A4N</a> )	<a href="http://www.Alphahpa.com.au">www.Alphahpa.com.au</a>	\$630.31M	Queried Feb 15
ABX Group Ltd ( <a href="#">ASX: ABX</a> )	<a href="http://www.abxgroup.com.au">www.abxgroup.com.au</a>	\$29.07M	
Alkane Resources Ltd ( <a href="#">ASX: ALK</a> )	<a href="http://www.alkane.com.au">www.alkane.com.au</a>	\$428.14M	Queried Feb 15
Alchemy Resources Ltd ( <a href="#">ASX: ALY</a> )	<a href="http://www.alchemyresources.com.au">www.alchemyresources.com.au</a>	\$18.85M	
American Rare Earths Ltd ( <a href="#">ASX: ARR</a> )	<a href="http://www.americanrareearths.com.au">www.americanrareearths.com.au</a>	\$100.53M	Queried Feb 15
Arafura Rare Earths Ltd ( <a href="#">ASX: ARU</a> )	<a href="http://www.arultd.com">www.arultd.com</a>	\$1.15B	Queried Feb 15
Austin Metals Limited ( <a href="#">ASX: AYT</a> )	<a href="http://www.austinmentals.com.au">www.austinmentals.com.au</a>	\$4.54M	
Australian Mines Ltd ( <a href="#">ASX: AUZ</a> )	<a href="http://www.australianmines.com.au">www.australianmines.com.au</a>	\$23.37M	



Australian United Mining Ltd ( <a href="#">ASX: AYM</a> )	<a href="http://www.australianunitedmining.com.au">www.australianunitedmining.com.au</a>	\$5.53M	
Australian Strategic Materials Ltd ( <a href="#">ASX: ASM</a> )	<a href="http://www.asm-au.com">www.asm-au.com</a>	\$260.06M	Queried Feb 15
Encounter Resources Ltd ( <a href="#">ASX: ENR</a> )	<a href="http://www.encounterresources.com.au">www.encounterresources.com.au</a>	\$51.55M	
Enova Mining Ltd ( <a href="#">ASX: ENV</a> )	<a href="http://www.enovamining.com">www.enovamining.com</a>	\$4.69M	
Hastings Technology Metals Ltd ( <a href="#">ASX: HAS</a> )	<a href="http://www.hastingstechmetals.com">www.hastingstechmetals.com</a>	\$310.03M	Queried Feb 15
Iluka Resources Ltd ( <a href="#">ASX: ILU</a> )	<a href="http://www.iluka.com">www.iluka.com</a>	\$4.64B	Queried Feb 15
Ionic Rare Earths Ltd ( <a href="#">ASX: IXR</a> )	<a href="http://www.ionicre.com.au">www.ionicre.com.au</a>	\$143.12M	Queried Feb 15
Krakatoa Resources Ltd ( <a href="#">ASX: KTA</a> )	<a href="http://www.ktaresources.com">www.ktaresources.com</a>	\$13.11M	
Legacy Iron Ore Ltd ( <a href="#">ASX: LCY</a> )	<a href="http://www.legacyiron.com.au">www.legacyiron.com.au</a>	\$92.26M	Queried Feb 15
Lindian Resources Ltd ( <a href="#">ASX: LIN</a> )	<a href="http://www.lindianresources.com.au">www.lindianresources.com.au</a>	\$220.20M	Queried 15 Feb
Lanthanein Resources Ltd ( <a href="#">ASX: LNR</a> )	<a href="http://www.lanthanein.com">www.lanthanein.com</a>	\$18.17M	

Lynas Rare Earths Ltd ( <a href="#">ASX: LYC</a> )	<a href="http://www.lynasrareearths.com">www.lynasrareearths.com</a>	\$7.06B	Queried Feb 15
Minbos Resources Ltd ( <a href="#">ASX: MNB</a> )	<a href="http://www.minbos.com">www.minbos.com</a>	\$100.12M	Queried Feb 15
Mount Ridley Mines Ltd ( <a href="#">ASX: MRD</a> )	<a href="http://www.mtridleymines.com.au">www.mtridleymines.com.au</a>	\$15.57M	
Northern Minerals Ltd ( <a href="#">ASX: NTU</a> )	<a href="http://www.northernminerals.com.au">www.northernminerals.com.au</a>	\$210.21M	Queried Feb 15
Nova Minerals Ltd ( <a href="#">ASX: NVA</a> )	<a href="http://www.novaminerals.com.au">www.novaminerals.com.au</a>	\$113.85M	Queried Feb 15
Orion Metals Ltd ( <a href="#">ASX: ORM</a> )	<a href="http://www.orionmetals.com.au">www.orionmetals.com.au</a>	\$16.35M	
Peak Rare Earths Ltd ( <a href="#">ASX: PEK</a> )	<a href="http://www.peakrareearths.com">www.peakrareearths.com</a>	\$135.40M	Queried Feb 15
Platina Resources Ltd ( <a href="#">ASX: PGM</a> )	<a href="http://www.platinaresources.com.au">www.platinaresources.com.au</a>	\$10.66M	
Prospect Resources Ltd ( <a href="#">ASX: PSC</a> )	<a href="http://www.prospectresources.com.au">www.prospectresources.com.au</a>	\$94.76M	
Petratherm Ltd ( <a href="#">ASX: PTR</a> )	<a href="http://www.petratherm.com.au">www.petratherm.com.au</a>	\$14.61M	
RareX Ltd ( <a href="#">ASX: REE</a> )	<a href="http://www.clancyexploration.com">www.clancyexploration.com</a>	\$30.71M	
Sunshine Gold Ltd ( <a href="#">ASX: SHN</a> )	<a href="http://www.shngold.com.au">www.shngold.com.au</a>	\$14.24M	
Stavely Minerals Ltd ( <a href="#">ASX: SVY</a> )	<a href="http://www.stavely.com.au">www.stavely.com.au</a>	\$73.38M	

Tempus Resources Ltd ( <a href="#">ASX: TMR</a> )	<a href="http://www.tempusresources.com.au">www.tempusresources.com.au</a>	\$12.47M	
Todd River Resources Ltd ( <a href="#">ASX: TRT</a> )	<a href="http://www.trrltd.com.au">www.trrltd.com.au</a>	\$9.46M	
Venus Metals Corporation Ltd ( <a href="#">ASX: VMC</a> )	<a href="http://www.venusmetals.com.au">www.venusmetals.com.au</a>	\$27.60M	
Vital Metals Ltd ( <a href="#">ASX: VML</a> )	<a href="http://www.vitalmetals.com.au">www.vitalmetals.com.au</a>	\$140.35M	Queried Feb 15

## Appendix B: ESG in Lithium development

Lithium Company (Ticker link to Share Price History)	Web Site	Mkt Cap AUS\$ (Feb. 25, 2023)	ESG Response
Aurora Energy Metals Ltd ( <a href="#">ASX: 1AE</a> )	<a href="http://www.auroraenergymetals.com">www.auroraenergymetals.com</a>	\$14.12M	
Australasian Metals Ltd ( <a href="#">ASX: A8G</a> )	<a href="http://www.australasiangold.com">www.australasiangold.com</a>	\$8.59M	
Ardiden Ltd ( <a href="#">ASX: ADV</a> )	<a href="http://www.ardiden.com.au">www.ardiden.com.au</a>	\$18.82M	
Argosy Minerals Ltd ( <a href="#">ASX: AGY</a> )	<a href="http://www.argosyminerals.com.au">www.argosyminerals.com.au</a>	\$1.03B	Queried Feb 26
Allkem ( <a href="#">ASX: AKE</a> )	<a href="http://www.allkem.co">www.allkem.co</a>	\$7.88B	Queried Feb 26
Arrow Minerals Ltd ( <a href="#">ASX: AMD</a> )	<a href="http://www.arrowminerals.com">www.arrowminerals.com</a>	\$8.57M	

Anson Resources Ltd ( <a href="#">ASX: ASN</a> )	<a href="http://www.ansonresources.com">www.ansonresources.com</a>	\$229.97M	
Australian Vanadium Ltd ( <a href="#">ASX: AVL</a> )	<a href="http://www.australianvanadium.com.au">www.australianvanadium.com.au</a>	\$135.27M	
BMG Resources Ltd ( <a href="#">ASX: BMG</a> )	<a href="http://www.bmg1.com.au">www.bmg1.com.au</a>	\$5.56M	
Benz Mining Corp ( <a href="#">ASX: BNZ</a> )	<a href="http://www.benzmining.com">www.benzmining.com</a>	\$52.05M	
Boadicea Resources Ltd ( <a href="#">ASX: BOA</a> )	<a href="http://www.boadicea.net.au">www.boadicea.net.au</a>	\$7.03M	
Cullen Resources Ltd ( <a href="#">ASX: CUL</a> )	<a href="http://www.cullenresources.com.au">www.cullenresources.com.au</a>	\$7.06M	
Core Lithium Ltd ( <a href="#">ASX: CX0</a> )	<a href="http://www.corelithium.com.au">www.corelithium.com.au</a>	\$1.77B	Queried Feb 26
De Grey Mining Ltd ( <a href="#">ASX: DEG</a> )	<a href="http://www.degreymining.com.au">www.degreymining.com.au</a>	\$2.31B	Queried Feb 26
Devex Resources Ltd ( <a href="#">ASX: DEV</a> )	<a href="http://www.devexresources.com.au">www.devexresources.com.au</a>	\$98.44M	
Dart Mining NL ( <a href="#">ASX: DTM</a> )	<a href="http://www.dartmining.com.au">www.dartmining.com.au</a>	\$7.31M	
European Metals Holdings Ltd ( <a href="#">ASX: EMH</a> )	<a href="http://www.europeanmet.com">www.europeanmet.com</a>	GBP69.45M	
Essential Metals Ltd ( <a href="#">ASX: ESS</a> )	<a href="http://www.essmetals.com.au">www.essmetals.com.au</a>	\$132.45M	
European Lithium Ltd ( <a href="#">ASX: EUR</a> )	<a href="http://www.europeanlithium.com">www.europeanlithium.com</a>	\$97.14M	
EV Resources Ltd ( <a href="#">ASX: EVR</a> )	<a href="http://www.evresources.com.au">www.evresources.com.au</a>	\$11.23M	

Global Lithium Resources Ltd ( <a href="#">ASX: GL1</a> )	<a href="http://www.globallithium.com.au">www.globallithium.com.au</a>	\$336.85M	
Galan Lithium Ltd ( <a href="#">ASX: GLN</a> )	<a href="http://www.galanlithium.com.au">www.galanlithium.com.au</a>	\$359.09M	
Hannans Ltd ( <a href="#">ASX: HNR</a> )	<a href="http://www.hannans.com">www.hannans.com</a>	\$35.42M	
Hawkstone Mining Ltd ( <a href="#">ASX: HWK</a> )	<a href="http://www.hawkstonemining.com.au">www.hawkstonemining.com.au</a>	\$148.99M	
Infinity Lithium Corporation Ltd ( <a href="#">ASX: INF</a> )	<a href="http://www.infinitylithium.com">www.infinitylithium.com</a>	\$50.89M	
Ioneer Ltd ( <a href="#">ASX: INR</a> )	<a href="http://www.ioneer.com">www.ioneer.com</a>	\$744.91M	<a href="#">Reply Feb 28</a>
Jindalee Resources Ltd ( <a href="#">ASX: JRL</a> )	<a href="http://www.jindalee.net">www.jindalee.net</a>	\$148.61M	
Korab Resources Ltd ( <a href="#">ASX: KOR</a> )	<a href="http://www.korabresources.com.au">www.korabresources.com.au</a>	\$7.71M	
Krakatoa Resources Ltd ( <a href="#">ASX: KTA</a> )	<a href="http://www.ktaresources.com">www.ktaresources.com</a>	\$13.11M	
Li-S Energy Ltd ( <a href="#">ASX: LIS</a> )	<a href="http://www.lis.energy">www.lis.energy</a>	\$48.94M	
Lithium Australia Ltd ( <a href="#">ASX: LIT</a> )	<a href="http://www.lithium-au.com">www.lithium-au.com</a>	\$46.44M	
Lake Resources NL ( <a href="#">ASX: LKE</a> )	<a href="http://www.lakeresources.com.au">www.lakeresources.com.au</a>	\$852.02M	Queried Feb 26
Lanthanein Resources Ltd ( <a href="#">ASX: LNR</a> )	<a href="http://www.lanthanein.com">www.lanthanein.com</a>	\$18.17M	

Lepidico Ltd ( <a href="#">ASX: LPD</a> )	<a href="http://www.lepidico.com">www.lepidico.com</a>	\$143.97M	
Lithium Power International Ltd ( <a href="#">ASX: LPI</a> )	<a href="http://www.lithiumpowerinternational.com">www.lithiumpowerinternational.com</a>	\$220.31M	
Latin Resources Ltd ( <a href="#">ASX: LRS</a> )	<a href="http://www.latinresources.com.au">www.latinresources.com.au</a>	\$242.64M	
Liontown Resources Ltd ( <a href="#">ASX: LTR</a> )	<a href="http://www.ltresources.com.au">www.ltresources.com.au</a>	\$3.58B	Queried Feb 26
Mineral Resources Ltd ( <a href="#">ASX: MIN</a> )	<a href="http://www.mineralresources.com.au">www.mineralresources.com.au</a>	\$17.17B	Queried Feb 26
Metals Australia Ltd ( <a href="#">ASX: MLS</a> )	<a href="http://www.metalsaustralia.com.au">www.metalsaustralia.com.au</a>	\$26.82M	
Marquee Resources Ltd ( <a href="#">ASX: MQR</a> )	<a href="http://www.marqueeresources.com.au">www.marqueeresources.com.au</a>	\$9.49M	
Morella Corporation Ltd ( <a href="#">ASX: 1MC</a> )	<a href="http://www.morellacorp.com">www.morellacorp.com</a>	\$73.18M	
Neometals Ltd ( <a href="#">ASX: NMT</a> )	<a href="http://www.neometals.com.au">www.neometals.com.au</a>	\$436.78M	Queried Feb 26
Nova Minerals Ltd ( <a href="#">ASX: NVA</a> )	<a href="http://www.novaminerals.com.au">www.novaminerals.com.au</a>	\$113.85M	
Piedmont Lithium Inc ( <a href="#">ASX: PLL</a> )	<a href="http://www.piedmontlithium.com">www.piedmontlithium.com</a>	\$1.68B	Queried Feb 26
Pilbara Minerals Ltd ( <a href="#">ASX: PLS</a> )	<a href="http://www.pilbaraminerals.com.au">www.pilbaraminerals.com.au</a>	\$12.53B	Queried Feb 26
Power Minerals Ltd ( <a href="#">ASX: PNN</a> )	<a href="http://www.pepinnini.com.au">www.pepinnini.com.au</a>	\$30.34M	

Poseidon Nickel Ltd ( <a href="#">ASX: POS</a> )	<a href="http://www.poseidon-nickel.com.au">www.poseidon-nickel.com.au</a>	\$113.35M	
Prospect Resources Ltd ( <a href="#">ASX: PSC</a> )	<a href="http://www.prospectresources.com.au">www.prospectresources.com.au</a>	\$94.76M	
Red Dirt Metals Ltd ( <a href="#">ASX: RDT</a> )	<a href="http://www.reddirtmetals.com.au">www.reddirtmetals.com.au</a>	\$175.74M	
Rio Tinto Ltd ( <a href="#">ASX: RIO</a> )	<a href="http://www.riotinto.com">www.riotinto.com</a>	\$181.74B	Queried Feb 26
Reedy Lagoon Corporation Ltd ( <a href="#">ASX: RLC</a> )	<a href="http://www.reedylagonn.com.au">www.reedylagonn.com.au</a>	\$5.10M	
Strike Resources Ltd ( <a href="#">ASX: SRK</a> )	<a href="http://www.strikeresources.com.au">www.strikeresources.com.au</a>	\$21.85M	
Sayona Mining Ltd ( <a href="#">ASX: SYA</a> )	<a href="https://sayonamining.com.au/about/">https://sayonamining.com.au/about/</a>	\$2.04B	Queried Feb 26
Taruga Minerals Ltd ( <a href="#">ASX: TAR</a> )	<a href="http://www.targunaminerals.com.au">www.targunaminerals.com.au</a>	\$10.80M	
Tempest Minerals Ltd ( <a href="#">ASX: TEM</a> )	<a href="http://www.tempestminerals.com">www.tempestminerals.com</a>	\$11.14M	
Traka Resources Ltd ( <a href="#">ASX: TKL</a> )	<a href="http://www.trakaresources.com">www.trakaresources.com</a>	\$4.34M	
Todd River Resources Ltd ( <a href="#">ASX: TRT</a> )	<a href="http://www.trrltd.com.au">www.trrltd.com.au</a>	\$9.46M	
Venus Metals Corporation Ltd ( <a href="#">ASX: VMC</a> )	<a href="http://www.venusmetals.com.au">www.venusmetals.com.au</a>	\$27.60M	
Vulcan Energy Resources Ltd ( <a href="#">ASX: VUL</a> )	<a href="http://www.v-er.com">www.v-er.com</a>	\$867.78M	Queried Feb 26

Woomera Mining Ltd ( <a href="#">ASX: WML</a> )	<a href="http://www.woomeramining.com.au">www.woomeramining.com.au</a>	\$11.47M	
Zenith Minerals Ltd ( <a href="#">ASX: ZNC</a> )	<a href="http://www.zenithminerals.com.au">www.zenithminerals.com.au</a>	\$77.38M	

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# John Putters of Visionstate on the path to profitability for WANDA and its portfolio companies

written by InvestorNews | February 28, 2024

In this InvestorIntel interview, host Tracy Weslosky talks to [Visionstate Corp.](#)'s (TSXV: VIS) CEO John Putters about the increase in sales and diversification of its client base for its WANDA family of facility management software, as well as its investment in portfolio companies.

John tells Tracy the need for facilities maintenance software increased dramatically during Covid, and "we're seeing a dramatic increase not only these sales but the adoption of our software across many different sectors." As a result of increased sales, he continues, "based on the last six months in terms of growth and installations, we fully expect to be profitable by the end of our fiscal year 2023, which would end September 30th in 2023, and we're well on that path."

In the interview John also talks about Visionstate's portfolio companies, including Freedom Cannabis Inc., a Canadian producer of cannabis products, that signed a definitive agreement to



acquire the assets of Calgary-based Boaz Pharmaceuticals and recently set a record for monthly revenue at \$2 million. "They're growing fast and they're one of the dominant companies now in the Canadian landscape in terms of their sales on the retail side of things," John says. "The reason why Visionstate invested in them is because we worked with them on IOT [Internet of Things] technology... and we're working with them to expand that throughout the cannabis sector." The goal, John explains, is for Freedom Cannabis to become a public company, providing Visionstate with liquidity.

To access the full InvestorIntel interview, [click here](#)

Don't miss other InvestorIntel interviews. Subscribe to the InvestorIntel YouTube channel by [clicking here](#).

### **About Visionstate Corp.**

Visionstate Corp. (TSXV: VIS) is a growth-oriented company that invests in the research and development of promising new technology in the realm of the Internet of Things, big data and analytics, and sustainability. Through Visionstate Inc., it helps businesses improve operational efficiencies, reduce costs and elevate customer satisfaction with its state-of-the-art devices that track and monitor guest activities and requests. The footprint of its WANDA™ smart device now extends to hospitals, airports, shopping centres and other public facilities across and beyond North America. Through building up a collection of synergistic technologies, Visionstate Corp. will continue to innovate, reduce environmental impact and transform consumer experiences.

To learn more about Visionstate Corp., [click here](#)

**Disclaimer:** *Visionstate Corp. is an advertorial member of InvestorIntel Corp.*

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Any projections given are principally intended for use as objectives and are not intended, and should not be taken, as assurances that the projected results will be obtained by the Company. The assumptions used may not prove to be accurate and a potential decline in the Company’s financial condition or results of operations may negatively impact the value of its securities. Prospective investors are urged to review the Company’s profile on [Sedar.com](https://www.sedar.com) and to carry out independent investigations in order to determine their interest in investing in the Company.

If you have any questions surrounding the content of this interview, please contact us at +1 416 792 8228 and/or email us direct at [info@investorintel.com](mailto:info@investorintel.com).

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# When it comes to ESG, it's Rule Britannia

written by Melissa (Mel) Sanderson | February 28, 2024

The world is writing about the passing of Queen Elizabeth II, and indirectly so am I. What does her death have to do with ESG? I'll answer that question in a moment, but here's a clue: it has to do with policy and direct and indirect influence on corporate behavior.

First, let's set the stage. A couple of recent surveys highlight disparities in ESG performance metrics among US companies and between US companies and the world, indicating that particularly US companies still have room to improve.

A 2021 study by [Navex](#) indicated strong ESG adoption across public and private companies, with 81% of participants saying their company had ESG programs in place while 63% of companies had increased focus and spending on ESG over 2020. But when asked to evaluate the effectiveness of corporate programs by focus, the results dropped precipitously. Only 50% of participants rated their corporate programs as very effective in the environmental arena, 39% highly effective in governance, and 37% effective in social matters. Despite these results (or perhaps due to them), 87% said their brand reputation was or is impacted by the company's ESG performance.

European companies, however, are out-performing US counterparts both in voluntarily initiated ESG programs and in formal program implementation with 86% of French and German companies scoring well, 82% of UK companies and only 74% of US companies.

In addition to the operational level, European companies also lead in providing strategic guidance on ESG by forming dedicated Board committees to oversee policies and operations. Although the UK's governance code, for instance, requires FTSE 100 companies to have audit, remuneration and nomination committees, there is no such stipulation for environmental, social and governance practices. Nonetheless, according to [a recent Bloomberg article](#), 54% of FTSE 100 companies voluntarily have structured Board committees on ESG, while (according to Deloitte) only 13% of S&P 500 companies have done so. What this suggests is that European companies have embraced the strategic importance of ESG much more fulsomely than have US counterparts.

Or, as Maria Hughes, director at UK-based Mattison Public Relations said: "If you are a FTSE 100 company without an ESG committee at board level, then you are now in a shrinking minority."

So, with all that said, what about the passing of Queen Elizabeth II and the accession to the throne of King Charles III? Well, as Prince of Wales, Charles was ahead of the global wave supporting and advocating for sustainable development and ESG principles. For over 50 years he developed and launched several important international initiatives, often in cooperation with organizations such as the United Nations. One such group, [the Sustainable Market Initiative](#), has had broad but relatively shallow corporate support. According to their website 500+ CEOs pledged support for the so-called Terra Carta (a Bill of Rights for the Earth); 15+ CEO-led Task Forces have been established with 150+ global CEO members, and 47 global organizations have been awarded the Terra Carta Seal. Sadly, so far no mining companies are on that list.

Now that Charles is King, he is likely to redouble his efforts to advance sustainability and ESG, using one of the most

important bully pits in the world – the British monarchy. And now that he is King, those efforts might attract broader and deeper support including – hopefully – from the global mining industry.

As for the US, companies have been improving but have a way to go. Particularly given new incentives from the USG and increasing scrutiny from investors and the public, US companies may rise to the challenge.

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# Mining our way to the Green Revolution

written by Stephen Lautens | February 28, 2024

The widespread commitment to living “greener” has never been greater. The ecological movement was a fringe concept in the 1960s when some scientists and futurists began to make dire predictions about limits to growth and pending ecological disasters. Sixty years on, with increasingly wild weather, droughts, and melting polar ice, the ecological fringe has become mainstream, not just in popular culture but also in boardrooms.

Paradoxically, communist China has proven to be a vivid example of the perils of capitalism in a hurry. While the industrial revolution in the West took place over two and a half centuries, China’s industrial revolution compressed its rush to catch up and join 21st century affluence into the last two or three decades. The result has been the ability to observe their ecological disaster unfold at ten times the speed. Willing to

sacrifice the environment for industrial dominance and general prosperity – as the West did for centuries – China rapidly [polluted](#) their rivers with toxins, the land with heavy metals, and their air with thick, sulfur-laden smog.

Some business leaders in the West see this as the “China advantage” and continue to advocate for the loosening of environmental and other regulations here to “stay competitive,” even as China itself is realizing that its polluting ways are not sustainable in the long run as they poison their country.

China is in the very early stages of balancing prosperity and sustainability. In 2021 [China's own carbon market](#) became fully operational. Many other developing countries in Africa, South America and Asia are facing the same conundrum and represent many points along the long road to economic advancement. Politicians there are often too willing to allow foreign companies to create ecological and social disasters to line their own pockets. Before we get too smug, the same battles have occurred here in the not too distant past and even continue today with “cut the red tape” politicians who push back against environmental regulations, motivated by either ideology or their donor lists.

For many, getting to a greener tomorrow is portrayed as an assault on our lifestyle and standard of living. While we have a long way to go before we make the shift away from oil, it has become widely accepted that oil will eventually have to go if we are to get to a carbon-neutral world. Oil production and consumption have increased with world population, but the search for new energy technologies and materials alternatives has never been more serious.

And therein lies the problem.

Electric vehicles rely on rare earths and other battery

materials. These critical minerals are mined and processed, but for years there has been a concerted and sustained opposition to mining as an industry. This opposition has been on the basis of both disruption of local populations and the potential for ecological disaster. Someone once observed the truth that mining is the destructive use of land, although in the past few decades there have been added additional layers of regulatory oversight and restrictions. There are still jurisdictions around the world that turn a blind eye (for a price) to environmental sloppiness by local or international miners, but western countries are increasingly extending strict environmental (and anti-corruption) rules to overseas operations. Securities regulations require environmental assessments and investors and auditors expect regular and glowing ESG disclosure.

[Experts have been warning](#) that there are significant shortages coming of the necessary critical minerals required for green, carbon-neutral energy sources and technology. Even ignoring geopolitical supply issues, the world simply does not currently produce enough basic materials like nickel and copper to supply the near-term electric vehicle demands, let alone more exotic materials like rare earths for EV magnets, batteries, solar panels, wind turbines, and the consumer electronics we cannot live without.

The bottom line is the green revolution is going to take a lot more mining and mineral processing. The only way we will ever reach a greener, carbon-neutral future will be through the mining and processing of critical minerals. It has to be done responsibly and intelligently, but it has to be done, and it has to be done quickly to meet the coming demand. China learned that sacrificing the environment for speed results in disaster, but a balance has to be found if we are going to have the materials needed to get to a green future before it is too late.

Sometimes the only way out is through.