The ESG Strategy for Vanadium Companies and PDAC 2023's Sustainability Program

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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.

Vanadium Company (Ticker link to Share Price History)	**Web Site**	**Mkt Cap AUS$ (Mar 2 2023)**	**ESG Response**
Aura Energy Ltd (ASX: AEE)	www.auraenergy.com.au	$157.43M	Queried Mar 4
Australian Vanadium Ltd (ASX: AVL)	www.australianvanadium.com.au	$144.00M	Queried Mar 4

Golden Deeps Ltd (ASX: GED)	www.goldendeeps.com	$9.36M	
Liontown Resources Ltd (ASX: LTR)	www.ltresources.com.au	$3.14B	Queried Mar 4
Neometals Ltd (ASX: NMT)	www.neometals.com.au	$454.35M	Queried Mar 4
Protean Energy Ltd (ASX: POW)	www.proteanenergy.com	$5.2M	
Pursuit Minerals Ltd (ASX: PUR)	www.pursuitminerals.com.au	$24.76M	Queried Mar 4
QEM Ltd (ASX: QEM)	www.qldem.com.au	$28.36M	Queried Mar 4
Red Dirt Metals Ltd (ASX: RDT)	www.reddirtmetals.com.au	$167.00M	Queried Mar 4
Sabre Resources Ltd (ASX: SBR)	www.sabreresources.com	$9.02M	
Santa Fe Minerals Ltd (ASX: SFM)	www.santafeminerals.com.au	$5.46M	
SI6 Metals Ltd (ASX: SI6)	www.si6metals.com	$4.49M	
Surefire Resources.NL (ASX: SRN)	www.surefireresources.com.au	$30.99M	Queried Mar 4
Syrah Resources Ltd (ASX: SYR)	www.syrahresources.com.au	$1.30B	Queried Mar 4
Technology Metals Australia Ltd (ASX: TMT)	www.tmtlimited.com.au	$61.90M	Queried Mar 4
Tivan Limited (ASX: TVN)	www.tivan.com.au	$118.12M	Queried Mar 4
Triton Minerals Ltd (ASX: TON)	www.tritonminerals.com	$38.72M	Queried Mar 4

Venus Metals Corporation Ltd (ASX: VMC)	www.venusmetals.com.au	$29.19M	Queried Mar 4
Vanadium Resources Ltd (ASX: VR8)	www.vr8.global	$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_2 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 (ASX: A4N)	www.Alphahpa.com.au	$630.31M	Queried Feb 15
ABX Group Ltd (ASX: ABX)	www.abxgroup.com.au	$29.07M	
Alkane Resources Ltd (ASX: ALK)	www.alkane.com.au	$428.14M	Queried Feb 15
Alchemy Resources Ltd (ASX: ALY)	www.alchemyresources.com.au	$18.85M	
American Rare Earths Ltd (ASX: ARR)	www.americanrareearths.com.au	$100.53M	Queried Feb 15
Arafura Rare Earths Ltd (ASX: ARU)	www.arultd.com	$1.15B	Queried Feb 15
Austin Metals Limited (ASX: AYT)	www.austinmentals.com.au	$4.54M	
Australian Mines Ltd (ASX: AUZ)	www.australianmines.com.au	$23.37M	

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

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

Tempus Resources Ltd (ASX: TMR)	www.tempusresources.com.au	$12.47M	
Todd River Resources Ltd (ASX: TRT)	www.trrltd.com.au	$9.46M	
Venus Metals Corporation Ltd (ASX: VMC)	www.venusmetals.com.au	$27.60M	
Vital Metals Ltd (ASX: VML)	www.vitalmetals.com.au	$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 (ASX: 1AE)	www.auroraenergymetals.com	$14.12M	
Australasian Metals Ltd (ASX: A8G)	www.australasiangold.com	$8.59M	
Ardiden Ltd (ASX: ADV)	www.ardiden.com.au	$18.82M	
Argosy Minerals Ltd (ASX: AGY)	www.argosyminerals.com.au	$1.03B	Queried Feb 26
Allkem (ASX: AKE)	www.allkem.co	$7.88B	Queried Feb 26
Arrow Minerals Ltd (ASX: AMD)	www.arrowminerals.com	$8.57M	

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

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

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

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

Woomera Mining Ltd (ASX: WML)	www.woomeramining.com.au	$11.47M	
Zenith Minerals Ltd (ASX: ZNC)	www.zenithminerals.com.au	$77.38M	