

Battery Metals for a Clean Energy Future / 为未来的清洁能源供应电池金属

Holly Millar, Director of Communications /
公关主管



TSX.V: GIGA | OTCQX: HNCKF | FSE: BRR2

SEPTEMBER 2021 / 2021年9月



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Forward looking statements / 前瞻性陈述

Certain statements in this Presentation are forward-looking statements, which reflect the expectations of management regarding the Turnagain Project. Forward-looking statements consist of statements that are not purely historical, including any statements regarding beliefs, plans, expectations or intentions regarding the future. Such statements include, but are not limited to, statements with respect to the future financial or operating performance of the Company and its mineral projects, the estimation of mineral resources and mineral prices, steps to be taken towards commercialization of the resource, the timing and amount of estimated future production and capital, operating and exploration expenditures, and the expectation that the risk level is lower than some other mining projects; that our project is similar in many ways and in some ways favourably comparable to other nickel projects; that battery companies will use much more nickel in future; that a price premium could accrue to a nickel mine that was genuinely carbon neutral; and that we can produce nickel with low net carbon emissions. Such statements are subject to risks and uncertainties that may cause actual results, performance or developments to differ materially from those contained in the statements. No assurance can be given that any of the events anticipated by the forward-looking statements will occur or, if they do occur, what benefits the Company will obtain from them. These forward-looking statements reflect management's current views and are based on certain expectations, estimates and assumptions which may prove to be incorrect, including the statements relating to future exploration and development of the Project and mineral resource and mineral reserve estimations relating to the Project. A number of risks and uncertainties could cause our actual results to differ materially from those expressed or implied by the forward-looking statements, including: (1) the mineral resource estimates relating to the Project could prove to be inaccurate for any reason whatsoever, (2) Giga is unable to finance the Project, (3) prices for nickel and cobalt or project costs could differ substantially and batteries may not in future depend on nickel (4) inferred and indicated resources may not materialize, (5) permits, environmental opposition, government regulation, cost overruns or any of many other factors may prevent the Company from commercializing the Turnagain Project, (6) additional but currently unforeseen work may be required to advance to the pre-feasibility stage, (7) risk may be higher than expected for a number of reasons, some foreseeable and others unforeseeable such as indigenous land claims, natural disaster, and many other possibilities; (8) despite our expectations that we are comparable to other nickel projects, on closer examination and upon project start-up we may find that our expected comparisons were not valid; and (9) even if the Project goes into production, there is no assurance that operations will be profitable or that we can reduce carbon emissions compared to other producers. These forward-looking statements are made as of the date of this Presentation and, except as required by applicable securities laws, the Company assumes no obligation to update these forward-looking statements, or to update the reasons why actual results differed from those projected in the forward-looking statements. Additional information about these and other assumptions, risks and uncertainties are set out in the "Risks and Uncertainties" section in the Company's most recent MD&A filed with Canadian security regulators.

About Giga Metals / 公司介绍



Giga Metals is listed on the TSX.V and OTCQX / Giga Metals 在多交所创业板和美国 OTCQX场外交易市场交易



World is in critical need of nickel to meet global battery demand / 全球亟需镍以满足全球电池的需求



Objective: build a **37,000 t/y year nickel** operation / 目标：建立一个**镍年产量3.7万吨**的项目



Owens **100% of the Turnagain nickel and cobalt deposit** / 拥有**Turnagain镍钴矿床100%的权益**



Seeking strategic partners to advance the project / 寻求战略合作伙伴推进项目



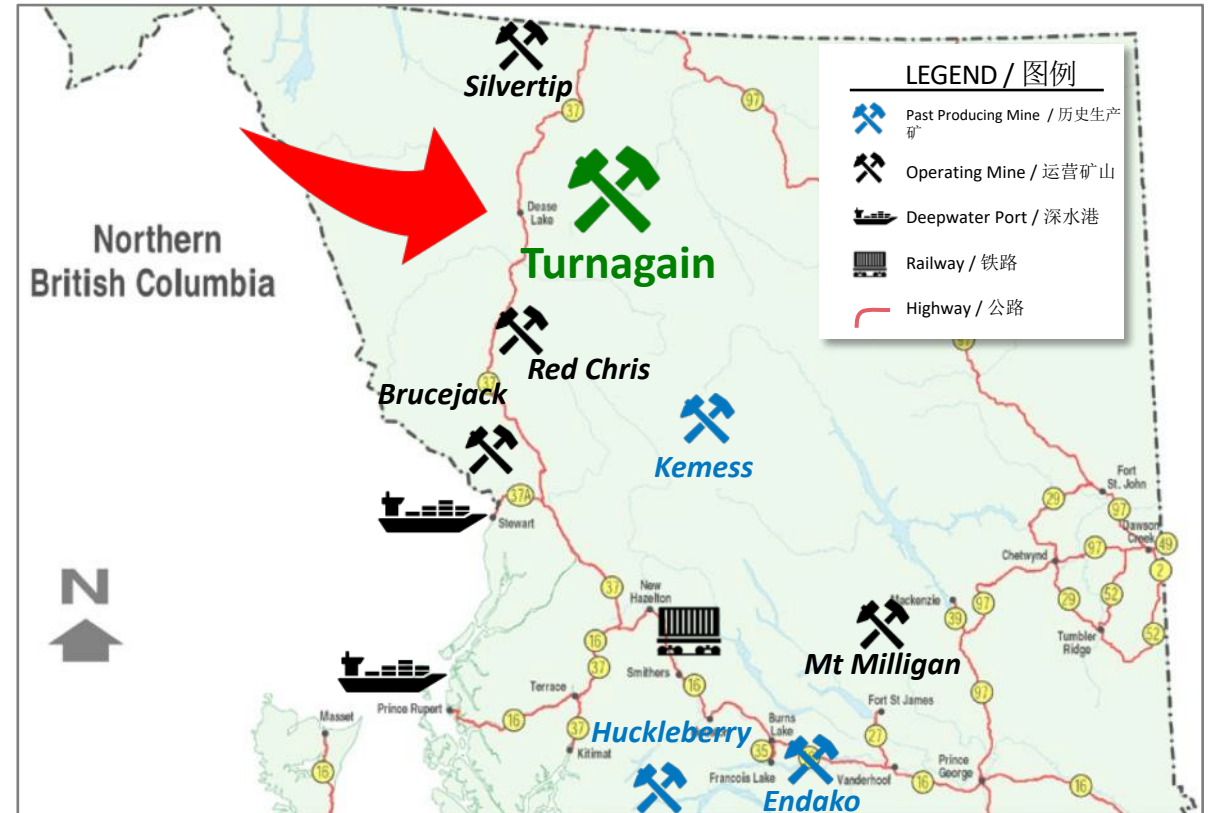
Updated Preliminary Economic Assessment (PEA) models **37 year mine life** / 更新初步经济评估模型，**矿山寿命调至37年**



Located in an Attractive Mining Jurisdiction / 位于诱人的矿业辖区

LOCATION ADVANTAGES / 位置优势

- Strong ESG practices / 良好的ESG执行
- Access to a deep-water Pacific port and North American rail / 可连通至太平洋深水港和北美铁路



Base map from BC Ministry of Transport and Infrastructure / 卑诗省交通和基础设施部的基础地图

Project Highlights / 项目亮点

RESOURCE / 资源量

MEASURED & INDICATED / 测定和指示

2.36 Mt Ni (5B lb.), 141 kt Co / 236万吨镍（50亿磅），14.1万吨钴

GRADE / 品位

0.22% Ni / 镍, 0.013% Co / 钴

INFERRED / 推断

2.48 Mt Ni (5B lb.), 148 kt Co / 248万吨镍（50亿磅），14.8万吨钴

GRADE / 品位

0.22% Ni / 镍, 0.013% Co / 钴

PROCESSING / 加工

HIGH-GRADE CONCENTRATE / 高品位精矿

Traditional processing or direct leaching / 传统加工或直接浸出

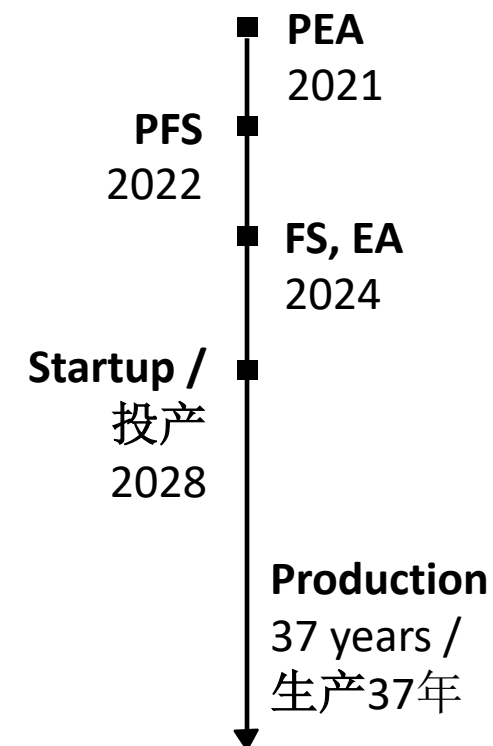
SIMPLE FLOWSHEET / 工艺流程简单

Crush – grind – froth flotation / 破碎-研磨-浮选

LOW CARBON / 低碳

Carbon sequestration research shows pathway to carbon-neutrality / 碳封存研究表明了通往碳中和的途径

POTENTIAL TIMELINE / 潜在时间轴



18% Ni Concentrate Product / 品位18%的镍精矿

- Multiple testwork campaigns: 15 to 21% Ni. / 多个测试工作：镍含量15-21%¹
- Low impurities such as arsenic, mercury, cadmium / 杂质少，如砷、汞、镉等
- Suitable for PEA Base Case – smelting / 适用于初步经济评估基准情况 - 冶炼
- Suitable for direct pressure oxidation to produce refined nickel end products such as battery chemicals / 适用于直接加压氧化生产精炼镍终端产品，如电池化学品
 - Sherritt, BHP, Vale have built direct refining operations / 谢里特、必和必拓、淡水河谷都建立了直接精炼业务
- Project has **flexible options** for concentrate sale/treatment / 项目有灵活的精矿销售/处理方案

Average of 5 Locked-Cycle Tests / 五个闭路循环测试的平均值 ¹	
Ni / 镍	19.7%
Co / 钴	1.2%
Cu / 铜	0.46%
Fe / 铁	32%
S / 硫	26%
Mg / 镁	4.4%
SiO ₂ / 二氧化硅	6.4%
Pt+Pd / 铂金+钯金	3 g/t

Mixed Hydroxide Precipitate (MHP) / 混合氢氧化物沉淀物

- Testwork on concentrates from 4 to 10% Ni, inferior to current concentrate / 对镍含量4-10%的精矿进行测试工作，含量低于目前的精矿
- Testwork proved amenability from oxidation to MHP recovery / 测试工作证明了从氧化到MHP回收的适应性
- MHP quality produced in laboratory is superior to commercially available materials / 实验室生产的MHP质量优于市面上的材料

MHP Grades for Commercial Product and Turnagain Results / 商业产品和Turnagain精矿的MHP品位				
	Ni+Co / 镍+钴 %	Mg / 镁 %	Mn / 锰 %	Cu+Fe / 铜+铁 %
HPAL Commercial Product (3 Projects) / HPAL商业产品（三个项目）	40-43	1.8 – 2.8	2.8 – 6.1	0.1 – 0.2
HPAL Commercial Product (Average 3 Projects) / HPAL商业产品（平均三个项目）	41	2.3	4.6	0.14
New Indonesia Project (expected) / 新的印度尼西亚项目（预计）	44	0.4	7.3	0.27
Turnagain MHP (May 2008) / Turnagain MHP（2008年5月）	49	1.4	0.2	<0.1

Safe, Modern Tailings Management / 安全的 现代化尾矿管理



Efficient valley location minimizes dam construction / 高效，山谷位置令大坝建设工作量降到最低水平



Dam construction by **centerline method**, constructed from inert quarried rock or mined waste hard rock / 用中心线法建造大坝，用惰性采石场岩石或开采的废弃硬岩建造



Tailings to be sub-aerial (**dry beach**), allowing mineral carbonation / 尾矿为亚气态（干沙滩），允许矿物碳化



Low seismic risk / 低地震风险



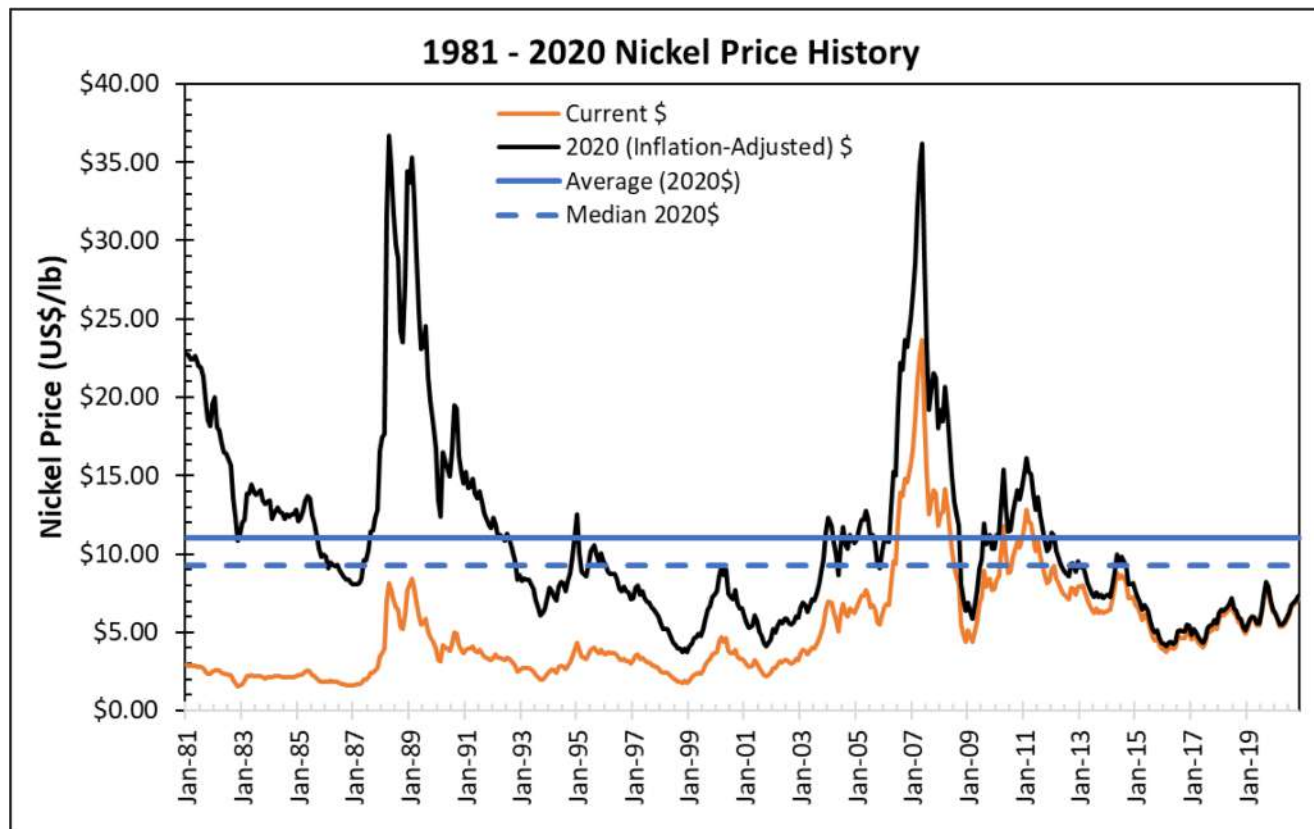
Relatively low precipitation (~0.6 m/y), **excellent water balance** / 降水相对较少（~0.6米/年），水分平衡良好



CO₂ sequestration in tailings through mineral carbonation / 通过矿物碳化在尾矿中封存二氧化碳



Nickel Prices are Historically Volatile / 历史上镍价大幅波动



Price history is not an indicator of future prices. / 历史价格并不指示未来价格

Inflated prices may not reflect underlying market fundamentals. / 上涨的价格可能不反映标的市场基本面

Current dollars inflated to 2020 using compounded inflation. / 使用复合通胀率将当前美元换算到2020年

Li-ion Batteries - the Fastest Growing Source of Demand for Nickel / 锂离子电池 - 镍需求增长最快的来源

Lithium-ion batteries alone could require **1.5 to 2.5 Mt/y¹** of new battery-grade nickel by 2040. / 到2040年，仅锂离子电池就可能需要**150万至250万/年¹**的新电池级镍。

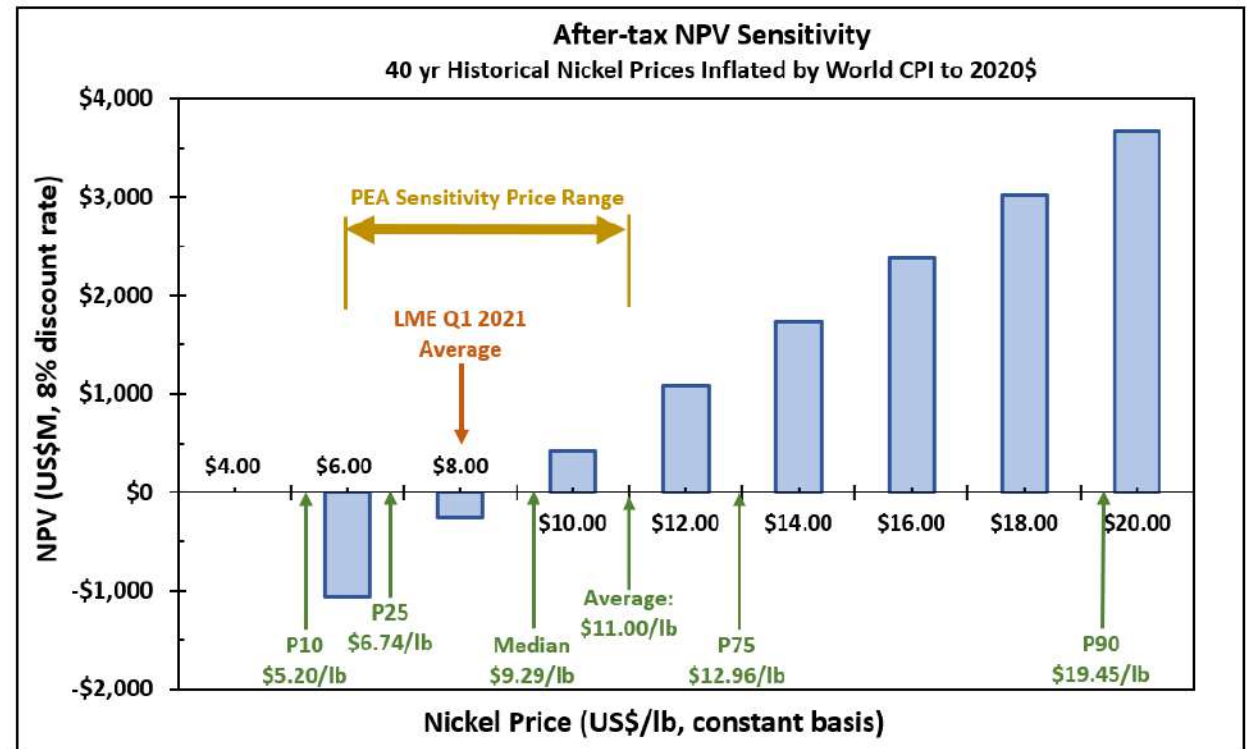
That's equivalent to **40-70 new large mines by 2040.** / 这相当于到2040年需要**40-70个新的大型矿山**。



1. [Turnagain PEA \(effective date Oct 28, 2020\)](#) ; Roskill (Study on future demand and supply security of nickel for electric vehicle batteries, 2021) / [Turnagain初步经济评估（生效日期为2020年10月28日）](#) ; Roskill（电动汽车电池用镍的未来需求和供应安全研究，2021年）。

Nickel Price Sensitivity Analysis / 镍价灵敏度分析

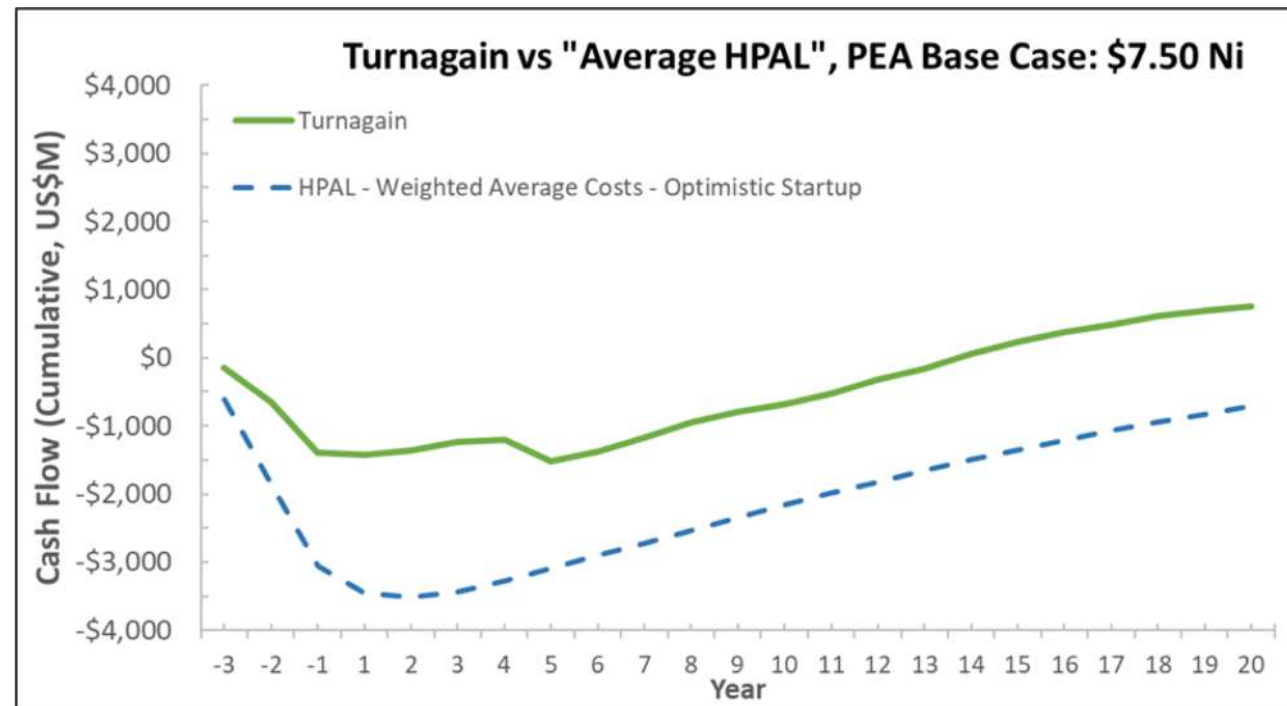
- PEA Base Case nickel price of \$7.50/pound / 初步经济评估基准情况下镍价为\$ 7.50/磅
- Post-tax NPV of -\$443M / 税后净现值为\$4.43亿
- Skewed nickel price distributions result in larger upside benefit than downside risk / 倾斜的镍价分布导致上行收益大于下行风险
- 10th, 25th, 50th, 75th, 90th percentile pricing reflected / 反映了第10、25、50、75、90个百分点的定价



Cumulative Cash Flow Comparison with HPAL / 与HPAL的累计现金流比较

PEA Base Case nickel price of \$7.50/pound / 初步经济评估基准情况下镍价为\$ 7.50/磅:

Turnagain project has a pre-tax IRR of 6.3% and an after-tax IRR of 4.9%. / Turnagain项目的税前内部收益率为6.3%，税后内部收益率为4.9%



Comparison with Laterite Projects / 与红土矿的比较

TURNAGAIN

- Open pit mine in hard rock / 硬岩中的露天矿
- Deep deposit minimizes mine deforestation / 深层矿床最大限度地减少了矿区的森林砍伐
- Low erosion potential, pit water used/treated / 侵蚀潜力低，使用/处理坑道水
- Northern location reduces biodiversity impacts / 北部位置减少了对生物多样性的影响



Gibraltar Copper Mine, BC (Canadian Mining Journal) / 卑诗省
Gibraltar 铜矿 (加拿大矿业杂志)

PROSPECTIVE LATERITE / 有前景的红土矿

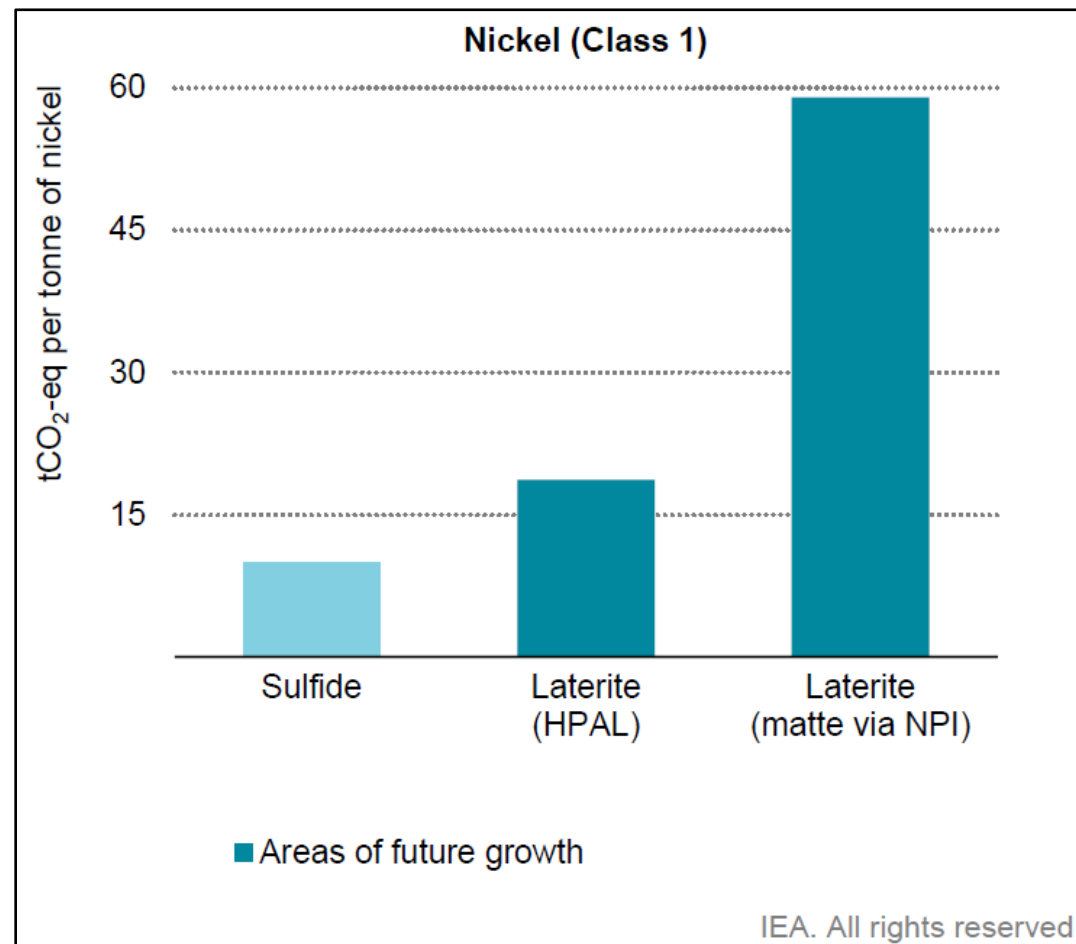
- Strip mining soft deposits / 剥离开采中柔软的矿床
- Thin deposits increase mine deforestation / 薄的矿床增加了矿区的森林砍伐
- High erosion potential, river/ocean contamination / 高侵蚀潜力，河流/海洋污染
- Tropical location increases biodiversity impacts / 热带地区增加了对生物多样性的影响



Nickel Mine in Sulawesi / 苏拉威西岛上的镍矿
(Chinadialogue.net, Ian Morse)

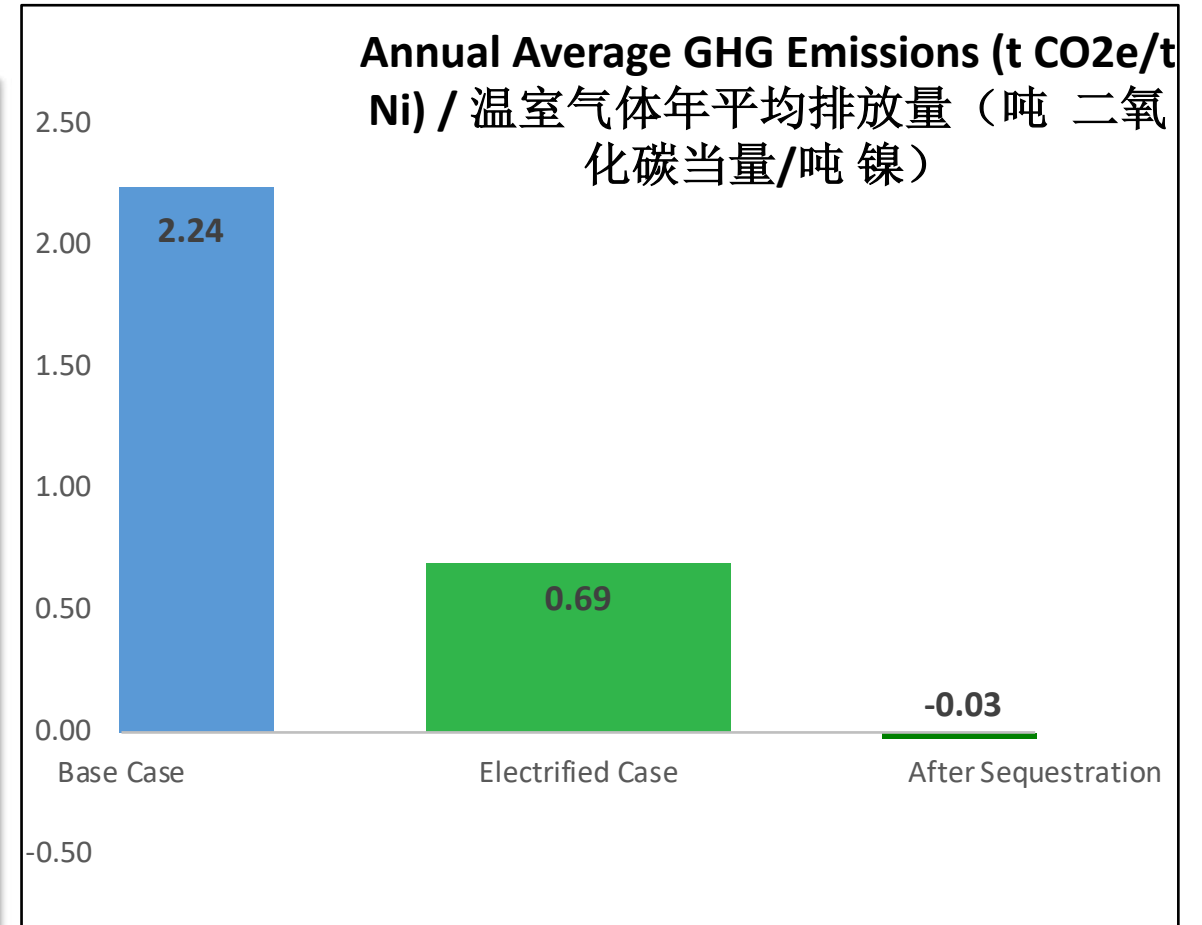
Carbon Intensity of Nickel Processing / 镍加工的碳强度

- For metals or battery chemicals, sulphide projects have lower carbon intensities / 对于金属或电池化学品，硫化物项目的碳强度较低
 - Upgrading of ores to concentrates / 将矿石升级为精矿
 - Sulphur is a fuel for smelting / 硫是冶炼的一种燃料
- HPAL variable depending on power and acid sources / HPAL会因电力和酸源而不同
- Conversion of ferronickel or NPI to matte is very high carbon intensity / 镍铁或NPI转化为冰铜需要非常高的碳强度

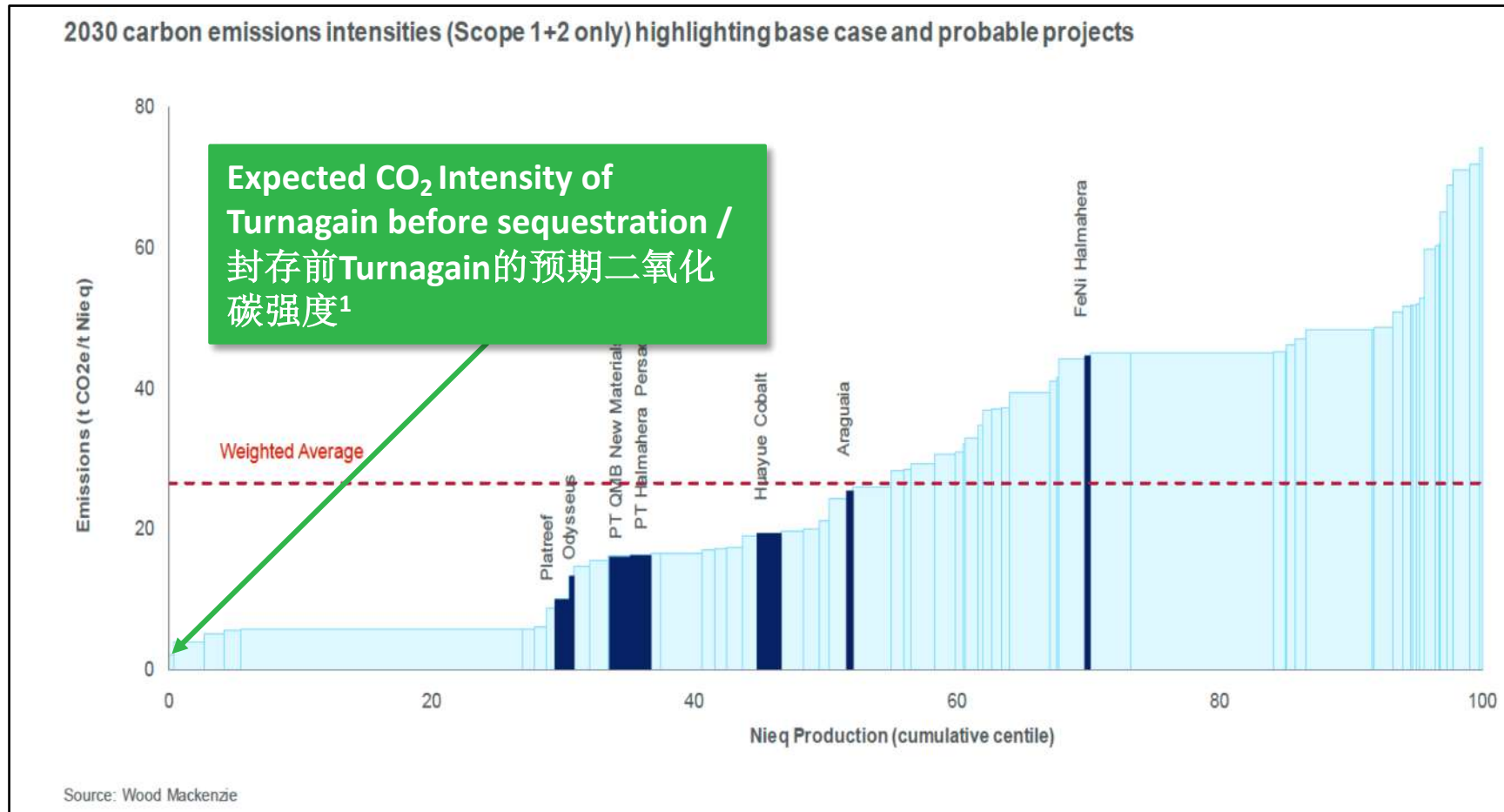


Carbon Neutrality at Turnagain / 在Turnagain 实现碳中和

- Tailings at Turnagain will sequester CO₂ / Turnagain尾矿将封存二氧化碳
- Reaction with Turnagain minerals creates carbonates, locking away CO₂ for millennia / 与Turnagain的矿物发生反应，产生碳酸盐，将二氧化碳封存上千年
- Testing by Dr. Greg Dipple (University of British Columbia) demonstrated stable sequestration rates of 27 to 34 t/ha/y / Greg Dipple博士（卑诗大学）的测试表明，封存率稳定在27至34吨/公顷/年。
- 900 kt of CO₂ could be sequestered over the mine life (0.72 tonnes CO₂ per tonne nickel produced) at the lower rates / 在较低的比率下，在矿山寿命期间可以封存90万公吨的二氧化碳（每生产一吨镍可以封存0.72吨二氧化碳）



Emission Intensity of Probable Nickel Projects / 可能的镍矿项目的排放强度



Why Invest in Giga Metals? / 为何投资Giga Metals?



40-70 new Turnagain-scale projects needed in next 20 years / 未来20年内需要40-70个新的类似Turnagain规模的项目



Large deposit: avg. of 33,000 t/y Ni for 37 years / 大型矿床: 37年矿山寿命期间平均每年生产3.3万吨镍



High-grade concentrate for standard processing or pressure oxidation / 用于标准加工或压力氧化的高品位精矿

Ethical nickel for batteries will be in short supply. Where will nickel supply for North American & European EVs come from? / 道德来源的电池用镍将供不应求。北美和欧洲的电动汽车的镍供应将来自哪里?

Board of Directors / 董事会



Anthony Milewski, Chairman of the Board / 董事会主席

Mr. Milewski is the Chairman of Nickel 28. He spent his career in various aspects of the mining industry, including as a company director, advisor, founder and investor. In particular, he has been active in battery metals including investing in cobalt and actively trading physical cobalt. Anthony was a member of the London Metals Exchange Cobalt Committee and has previously worked at Pala Investments, Firebird Management, and Renaissance Capital. / Milewski现任Nickel 28的董事会主席，职业生涯中从事过采矿业各个方面的工作，包括担任公司董事、顾问、创始人和投资者。特别是，他一直活跃在电池金属领域，包括投资钴和积极交易实物钴，曾是伦敦金属交易所钴委员会的成员，之前曾在Pala Investments、Firebird Management和Renaissance Capital工作。



Mark Jarvis, CEO & Director / 首席执行官兼董事

Mr. Jarvis has more than 30 years of experience in exploration and development of mineral resources, both in oil & gas and metals. After a career financing exploration projects as a stockbroker, he moved to the corporate side of the business in 1996. He joined the board of Ultra Petroleum as Director and was responsible for Corporate Finance and at the time when Ultra had a large unconventional gas prospect that ultimately became 3 TCF of proved reserves. / Jarvis先生在勘探和开发矿产资源方面有30多年的经验，包括石油、天然气和金属，曾以股票经纪人的身份为勘探项目融资，之后于1996年转到矿企工作，加入了Ultra Petroleum的董事会，担任董事，负责公司融资，当时Ultra有一个大型的非常规天然气前景，最终成为三万亿立方英尺的探明储量。



Martin Vydra, P.Eng., President & Director / 专业工程师，总裁兼董事

Mr. Vydra is a former executive with Sherritt International. Martin is widely recognized as an expert in nickel and cobalt extraction, processing and refining including the development and application of advanced technologies to maximize the recovery of valuable metals such as nickel and cobalt from a variety of feeds. While at Sherritt, his technical accomplishments spanned four continents and over 20 operations. / Vydra曾在谢里特国际担任高管，被公认为是镍和钴提取、加工和精炼方面的专家，包括开发和应用先进技术，从各种原料中最大限度地回收镍和钴等有价值的金属。在谢里特工作期间，他的技术成就应用于四大洲的20多个项目中。



Robert Morris, Director / 董事

Mr. Morris is a former senior executive with Vale S.A., the largest nickel producer in the world, and most recently as Executive Vice President with global accountability for sales and marketing of Vale's base metals portfolio, including Nickel, Copper, Cobalt and Precious Metals. He was an officer of the company and member of the senior management committee. His knowledge of the rapidly evolving market for nickel and cobalt products is extensive and includes marketing battery materials to battery manufacturers. / Morris先生曾是全球最大的镍生产商淡水河谷公司的高管，最近曾担任执行副总裁，负责淡水河谷基本金属组合的全球销售和营销，包括镍、铜、钴和贵金属，曾是该公司的一名官员和高级管理委员会的成员。他对迅速发展的镍和钴产品市场有广泛的了解，包括向电池制造商推销电池材料。



Lyle Davis, P.Eng. MBA, Director / 专业工程师、工商管理硕士、董事

Mr. Davis is a director and CEO of Condor Resources Inc., a copper and gold exploration company active in Latin America. He previously worked in the corporate finance practices of Ernst & Young, and in a similar capacity at C.M. Oliver, a brokerage firm. Before that, Mr. Davis was with the Vancouver Stock Exchange. He is a member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta. / Davis先生目前担任活跃在拉丁美洲的一家铜和黄金勘探公司Condor Resources Inc.的董事和首席执行官，曾在安永会计师事务所的企业融资部门工作，并在经纪公司C.M. Oliver担任过类似职务，在此之前曾在温哥华证券交易所工作，现在是阿尔伯塔省专业工程师、地质学家和地球物理学家协会的成员。

Share Structure / 股权结构

Stock Exchanges / 股票交易所	
TSX Venture / 多交所创业板	GIGA
OTCQX Market / OTCQX市场	HNCKF
Frankfurt / 法兰克福证券交易所	BRR2
Share Capital (April 27,2021) / 股份资本（2021年4月27日）	
Shares Outstanding / 发行在外股票	85,028,428
Warrants / 认股权证	15,571,982
Options / 期权	6,500,000
Fully-diluted / 完全摊薄后股数	107,600,410
Market Capitalization / 市值	
Share Price (August 20, 2021) / 股价（2021年8月20日）	C\$0.40 / 0.40加元
Market Capitalization / 市值	C\$34 M / 3400万加元



Turnagain Camp

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