

# **BUILDING A SECURE, LOW COST, GREEN NICKEL™ USA DOMESTIC SUPPLY CHAIN FROM MINE TO BATTERY: THE SMART WAY**



**TALON METALS CORP. (TSX:TLO)**  
**RIO TINTO (KENNECOTT EXPLORATION COMPANY) JOINT VENTURE**  
*April 2021*

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# TECHNICAL REFERENCE

The mineral resource figures disclosed in this presentation are estimates and no assurances can be given that the indicated levels of nickel, copper, cobalt, platinum, palladium and gold will be produced. Such estimates are expressions of judgment based on knowledge, mining experience, analysis of drilling results and industry practices. Valid estimates made at a given time may significantly change when new information becomes available. While the Company believes that the resource estimates disclosed in this presentation are well established, by their nature resource estimates are imprecise and depend, to a certain extent, upon statistical inferences which may ultimately prove unreliable. If such estimates are inaccurate or are reduced in the future, this could have a material adverse impact on the Company.

***Mineral resources are not mineral reserves and do not have demonstrated economic viability. Inferred mineral resources are estimated on limited information not sufficient to verify geological and grade continuity or to allow technical and economic parameters to be applied. Inferred mineral resources are too speculative geologically to have economic considerations applied to them to enable them to be categorized as mineral reserves. There is no certainty that mineral resources can be upgraded to mineral reserves through continued exploration.***

Please see the technical report entitled “NI 43-101 Technical Report Updated Preliminary Economic Assessment (PEA) #3 of the Tamarack North Project – Tamarack, Minnesota” with an effective date of January 8, 2021 (the “**2021 PEA**”) prepared by independent “Qualified Persons” (as that term is defined in National Instrument 43-101 (“NI 43-101”)) Leslie Correia (Pr. Eng), Andre-Francois Gravel (P. Eng.), Tim Fletcher (P. Eng.), Daniel Gagnon (P. Eng.), Volodymyr Liskovych (P. Eng.), David Ritchie (P. Eng.), Oliver Peters (P. Eng.), Andrea Martin (P.E.) and Brian Thomas (P. Geo) for information on the QA/QC, data verification, analytical and testing procedures at the Tamarack Project. Copies are available on the Company’s website ([www.talonmetals.com](http://www.talonmetals.com)) or on SEDAR at ([www.sedar.com](http://www.sedar.com)). The laboratory used is ALS Minerals who is independent of the Company.

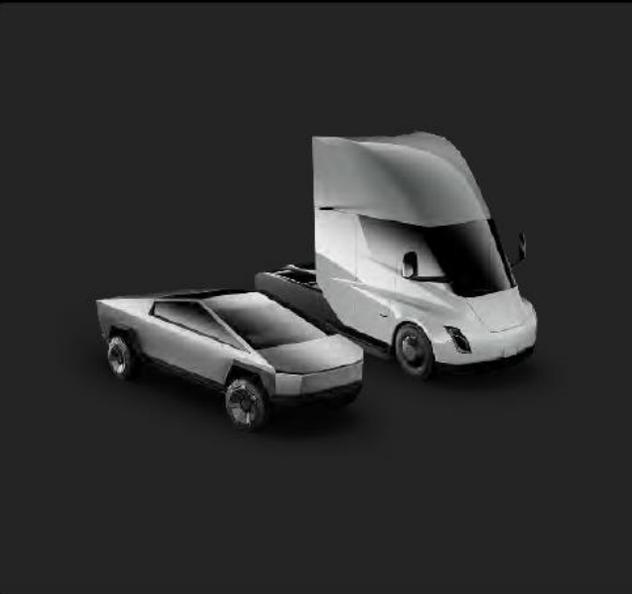
The 2021 PEA is preliminary in nature. The 2021 PEA includes inferred mineral resources. Inferred mineral resources are considered too speculative geologically to have economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the 2021 PEA will be realized.

The mineral resource estimate contained in this presentation was prepared by or under the supervision of Mr. Brian Thomas (P. Geo.), who is a geologist independent of Talon and an employee of Golder Associates Ltd. In addition, Mr. Thomas has reviewed the sampling, analytical and test data underlying such information and has visited the site and reviewed and verified the QA/QC procedures used at the Tamarack North Project and found them to be consistent with industry standards. Dr. Etienne Dinel, Vice President, Exploration of Talon, is a Qualified Person within the meaning of NI 43-101. Dr. Dinel is satisfied that the analytical and testing procedures used are standard industry operating procedures and methodologies, and he has reviewed, approved and verified the technical information in this presentation, including sampling, analytical and test data underlying the technical information.

Lengths in this presentation are drill intersections and not necessarily true widths. True widths cannot be consistently calculated for comparison purposes between holes because of the irregular shapes of the mineralized zones.

# THE US WILL NEED NICKEL TO PRODUCE NICKEL BASED BATTERY CATHODE FOR LONG RANGE AND MASS SENSITIVE ELECTRIC VEHICLES

## Diversified Cathode Approach

				
				
<p><b>IRON BASED</b> LONG CYCLE LIFE</p>	<p><b>NICKEL + MANGANESE</b> LONG RANGE</p>		<p><b>HIGH NICKEL</b> MASS SENSITIVE</p>	

Tesla Battery Day, September 22, 2020

# NEW NICKEL PRODUCTION OPTIONS OUTSIDE OF THE USA:

## (1) LATERITES + HPAL: INDONESIA

“Indonesia wants to take a central position in the value-added links in the EV supply chain — from mining the ore, to refining it, to manufacturing the batteries and eventually to building the cars. And because Indonesia controls the raw input, it turns out it has a lot of leverage.”

*Indonesia plays hardball with its nickel  
30 March 2021 , Author: James Guild, RSIS*

Very large High Pressure Acid Leach (HPAL) Indonesian facilities



# NEW NICKEL PRODUCTION OPTIONS OUTSIDE OF THE USA: (2) LATERITES + NPI + SMELTING + HYDROMET : INDONESIA

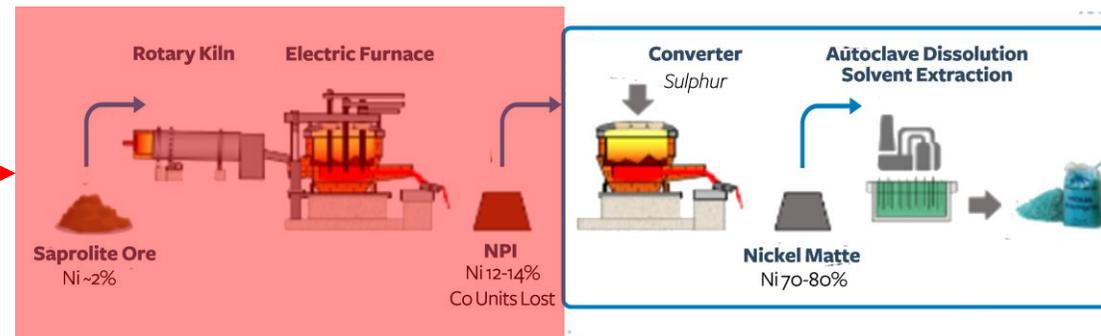
“Tsingshan, the world’s largest nickel producer, announced last week that it will supply nickel matte based on converted nickel pig iron (NPI)\* from its operations at Indonesia Morowali Industrial Park (IMIP) to Chinese companies Huayou and CNGR Advanced Materials, which will be further processed to produce battery-grade nickel sulphate.”



青山控股  
TSINGSHAN

Roskill March 9, 2021

The proposed feedstock (NPI) produces 4.92x the CO<sub>2</sub> using 3.43x the energy per contained nickel (see red box below) compared to nickel from the traditional smelting process **BEFORE** further processing (blue outline)\*



\*Energy Consumption and Greenhouse Gas Emissions of Nickel Products, Department of Materials Science and Engineering, Royal Institute of Technology, published 29 October 2020

# THE USA HAS BEEN PRODUCING NICKEL RESPONSIBLY SINCE 2013: *FOR A CANADIAN NICKEL SMELTER*

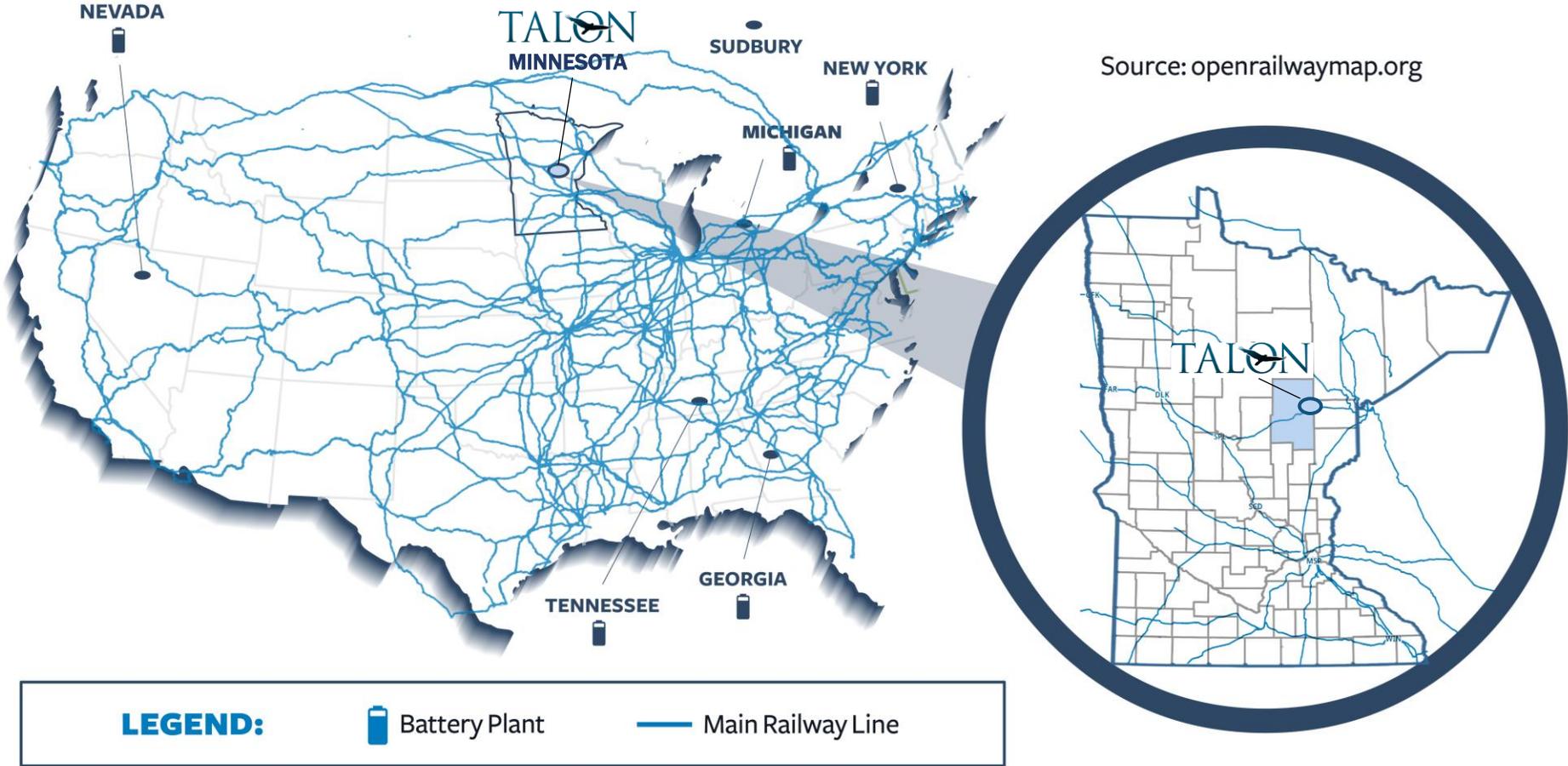
EAGLE NICKEL-COPPER MINE, MICHIGAN  
EXPECTED TO CLOSE IN 2026  
*WHEN A GLOBAL NICKEL DEFICIT IS EXPECTED*



# ONLY ONE\* USA NICKEL PROJECT REMAINS: TAMARACK, MINNESOTA



THE TAMARACK HIGH GRADE NICKEL PROJECT 54 MILES WEST OF DULUTH, MINNESOTA



\*High-grade nickel on infrastructure that can produce Green Nickel™ for batteries the SMART way

# WHAT WE HAVE, HERE, IN THE USA, TODAY: ONE REMAINING, UNDEVELOPED HIGH-GRADE NICKEL PROJECT ON INFRASTRUCTURE

If the Tamarack Nickel Project was in production in 2020, it could have produced all the nickel that was used in plug-in electric vehicles sold across the United States



We already have:

Tamarack North Project NI 43-101 Mineral Resource Estimate (Effective Date: January 8, 2021)\*

	Classification	%Ni Cut-Off	Tonnes (000)	Ni (%)	Cu (%)	Co (%)	Pt (g/t)	Pd (g/t)	Au (g/t)	NiEq (%)
Total	Indicated Resource	0.5	3,926	1.91	1.02	0.05	0.41	0.26	0.20	2.62
Total	Inferred Resource	0.5	7,163	1.11	0.68	0.03	0.26	0.16	0.14	1.57

*\*Estimate basis:*

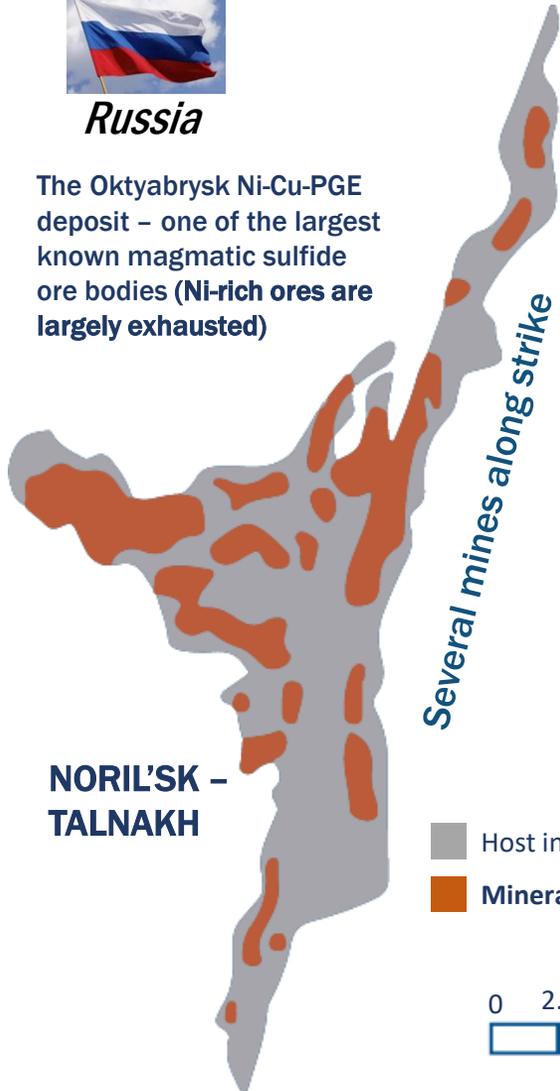
0.5% Ni cut-off.  
No modifying factors have been applied to the estimates.  
Tonnage estimates are rounded to the nearest 1,000 tonnes.  
Metallurgical recovery factored into the reporting cut-off.  
NiEq grade based on base case metal prices of \$8.00/lb Ni, \$3.00/lb Cu, \$25.00/lb Co, \$1,000/oz Pt, \$1,000/oz Pd and \$1,300/oz Au using the following formula:  $NiEq\% = Ni\% + Cu\% \times \$3.00/\$8.00 + Co\% \times \$25.00/\$8.00 + Pt [g/t]/31.103 \times \$1,000/\$8.00/22.04 + Pd [g/t]/31.103 \times \$1,000/\$8.00/22.04 + Au [g/t]/31.103 \times \$1,300/\$8.00/22.04$ . No adjustments were made for recovery or payability.

# WHAT WE ARE WORKING ON: EVIDENCE OF DISTRICT SCALE POTENTIAL



**Russia**

The Oktyabrysk Ni-Cu-PGE deposit – one of the largest known magmatic sulfide ore bodies (Ni-rich ores are largely exhausted)



**NORIL'SK – TALNAKH**

■ Host intrusion  
■ Mineralization



The Tamarack Intrusive Complex (TIC) –  
First discovery drill hole: 2008



**USA**

**Tamarack Resource**

Tamarack North  
Tamarack South

**NECK Zone**

Hole 16TK0236 intersected 1.1m grading 2.55% Ni, 4.32% Cu, 0.004% Co, 3.59 g/t PGE's and 0.82 g/t Au starting at 1044.45 meters  
**(4 km away from resource)**  
See the Company's press release dated November 21, 2016

**264 Zone**

Hole 18TK0264 intersected 0.25m grading **9.95% Ni**, 5.74% Cu at 539m **(3km away from resource)** See the Company's press release dated June 21, 2018

- **Geophysics, Drilling**

**221 Zone**

Hole 15TK0229 intersected 1.63m grading **9.33% Ni**, 5.14% Cu at 702m **(1.6km away from resource)** See the Company's press release dated September 1, 2015

- **Geophysics, Drilling**

**Tamarack Zone**

Hole 13TK0171 intersected 7.34m grading **8.3% Ni**, 2.95% Cu at 573m **(Open to the east)**

See the Company's Updated PEA of the Tamarack North Project, March 2020

- **Geophysics, Drilling**

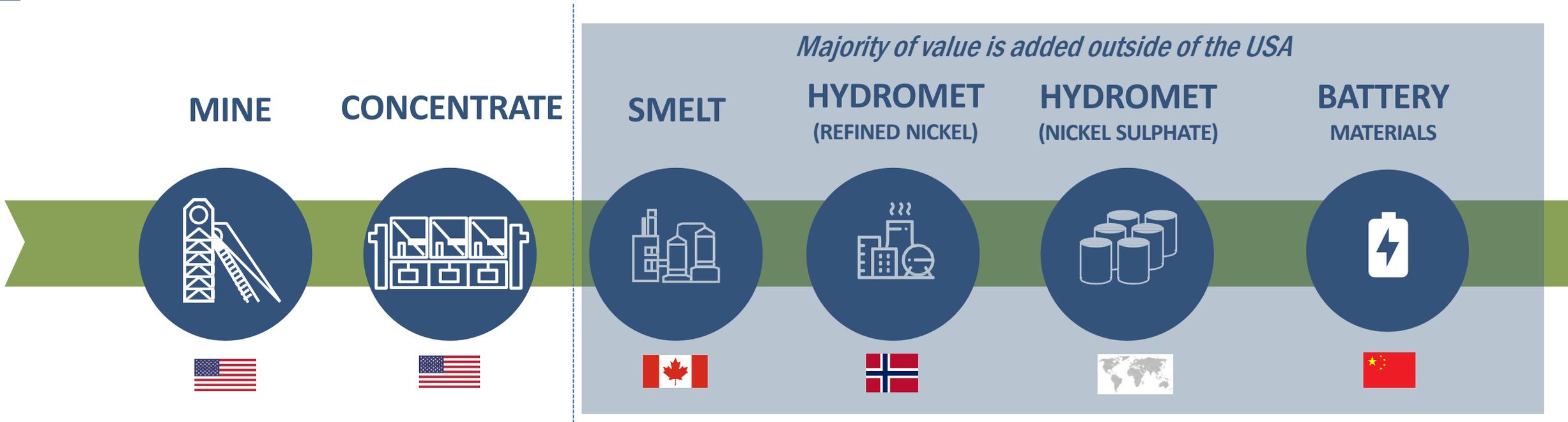
**164 Zone**

Hole 12TK0164 intersected 2.89m grading **3.67% Ni**, 1.97% Cu at 473m **(1.1km away from resource)**

- **Geophysics, Drilling**

# WHAT WILL HAPPEN TO TAMARACK NICKEL

## IF WE DON'T CREATE AN INTEGRATED GREEN NICKEL™ USA SUPPLY CHAIN



“It’s insanely complicated. It’s a small world journey of, ‘I am a nickel atom, what happens to me?’ And it is crazy. You’re going around the world three times, it’s the equivalent of digging the ditch, filling the ditch and digging the ditch again, it’s total madness basically.”

*Elon Musk, Battery Day, September 22, 2020*

# WHAT WE ARE PLANNING FOR TAMARACK NICKEL

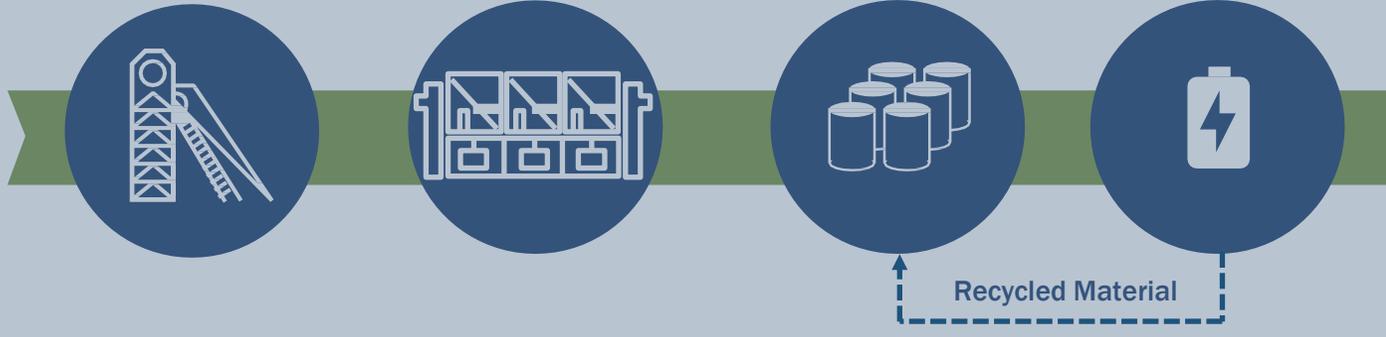
 *All value added in the USA*

MINE

CONCENTRATE

HYDROMET  
(NICKEL SULPHATE)

BATTERY  
MATERIALS



“With Green Nickel™ people should feel good about the end-product they are getting from the process. So when you purchase an electric vehicle, you know that you are truly doing your part to protect our environment.”

*Joni Torgerson, CMWPIT, Senior Environmental Scientist,  
Talon Metals Corp. Tamarack, Minnesota*



REDUCE DEPENDENCE  
ON IMPORTS



REDUCE  
EMISSIONS



REDUCE  
ENERGY  
CONSUMPTION



MAXIMIZE RECOVERY  
OF METALS



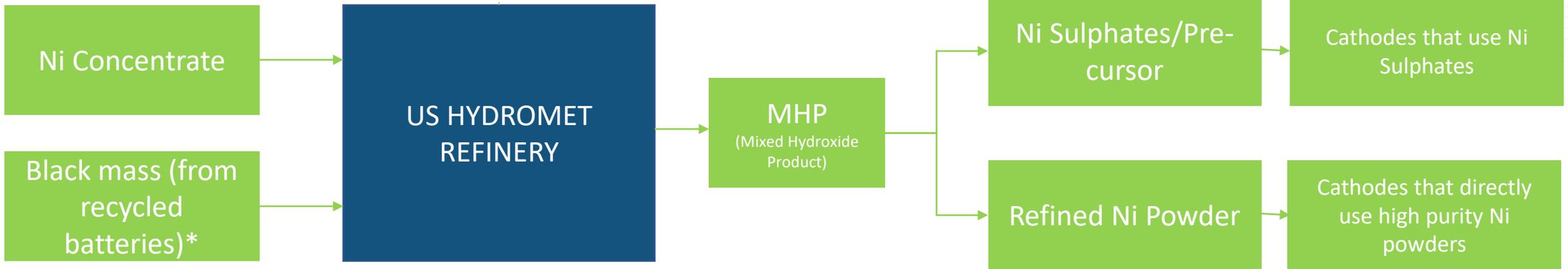
REDUCE  
OPERATING  
COSTS



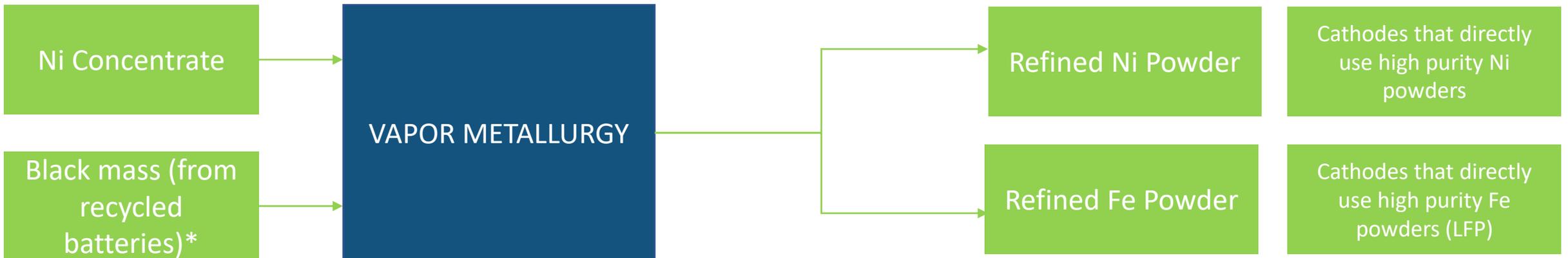
REDUCE  
TRANSPORTATION  
COSTS

# CREATING AN INTEGRATED, GREEN SUPPLY CHAIN: OPTIONS UNDER DEVELOPMENT

## Option 1: Hydromet



## Option 2: From Metal to Battery



*\*Dual feedstock design is the subject of research and development*

# LAUNCHING THE FIRST TRACEABLE, GREEN NICKEL™ SUPPLY CHAIN FROM MINE TO BATTERY – THE SMART WAY

SMALL – MINE-MANUFACTURE – ACCOUNTABLE – RESPONSIBLE – TRANSPARENT



- ✓ **S** SMALL FOOTPRINT: HIGH-GRADE/UNDERGROUND - CAN EASILY BE CONCENTRATED WITH LOW METAL LOSSES
- ✓ **M**INE-TO-MANUFACTURE: INTEGRATED NICKEL SUPPLY CHAIN FROM MINE-TO-BATTERY
- ✓ **A**CCOUNTABLE: REDUCE GLOBAL WARMING POTENTIAL AT EACH STEP IN THE PROCESS FROM THE MINE THROUGH TO THE BATTERY, NOT JUST AT THE MINE
- ✓ **R**ESPONSIBLE: PRODUCE NICKEL FROM 100% GREEN POWER, WITH AN ELECTRIC MINE FLEET, NO TAILINGS DAM AND A FOCUS ON CARBON CAPTURE AND STORAGE
- ✓ **T**RANSPARENT: WE ARE CREATING BATTERY NICKEL'S FIRST TRANSPARENT AND TRACEABLE SUPPLY CHAIN FROM THE MINE THROUGH TO THE EV CUSTOMER