

Electra Battery Materials

ONSHORING THE EV SUPPLY CHAIN

Trent Mell, CEO

June 1, 2023

5K tonnes
of cobalt contained
production per year

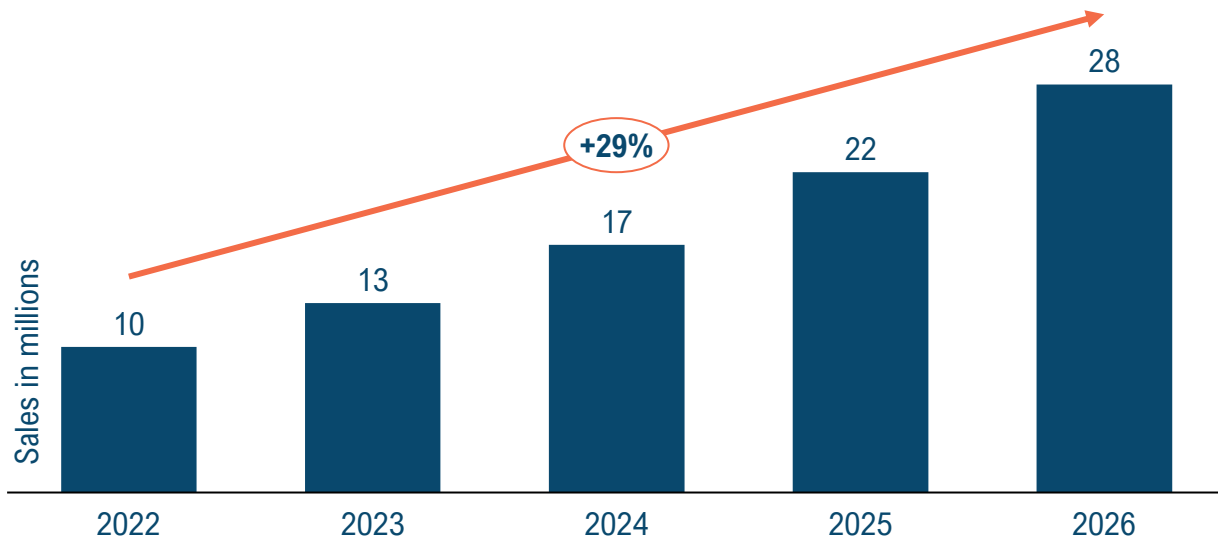
51%
lower CO₂ emissions
than Chinese peers*

About Electra Battery Materials

- Multi-prong strategy to onshore EV supply chain
- Benefitting from Inflation Reduction Act and favorable outlook
- Fully-permitted refinery with low-carbon footprint
- Differentiated by low carbon emissions and technical expertise
- Three-year off-take agreement with LG Energy Solution
- Refinery complex located in Ontario
- Attracting global interest

Developing first mover advantage

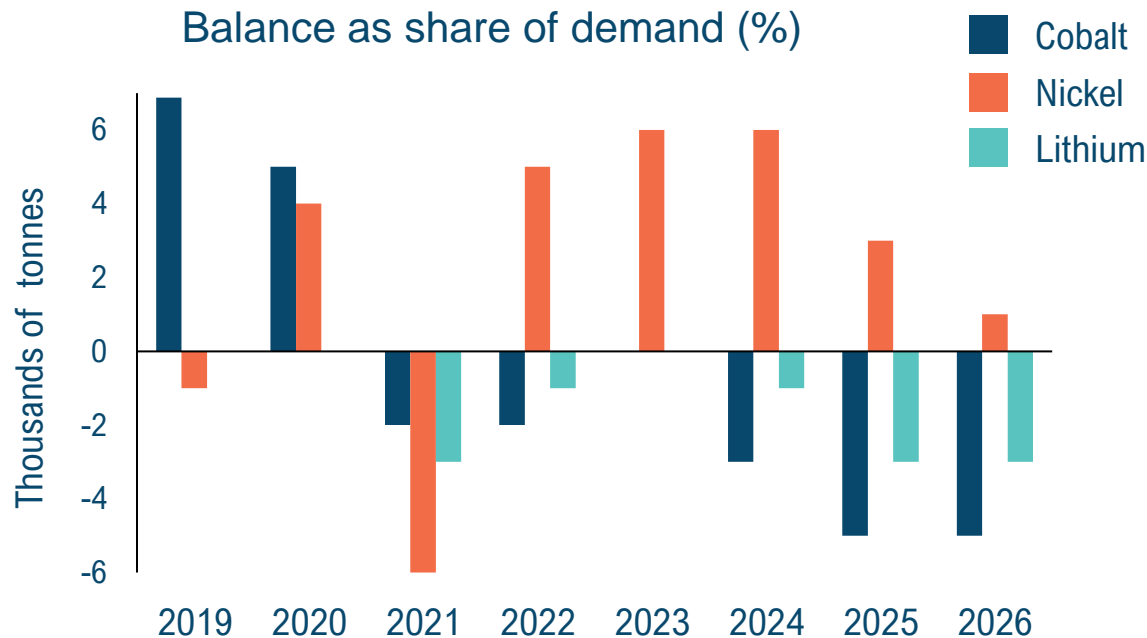
Outlook for EV sales is bullish*



**Sales to grow higher
with incentives from
Inflation Reduction Act**

Growth predicated on availability of critical minerals needed for batteries

Imbalance of critical minerals is looming

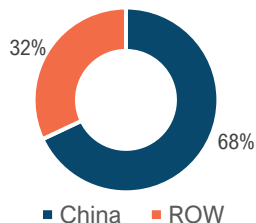


**Cobalt deficit
supply anticipated
beginning in 2024**

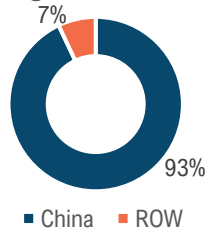
Demand imbalance to worsen with passage of Inflation Reduction Act

The onshoring opportunity

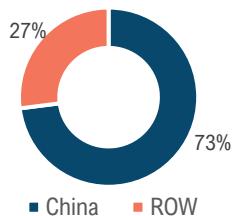
Nickel Processing



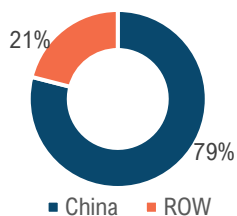
Manganese Processing



Cobalt Processing



Battery Cells Manufacturing



- China dominates processing of EV battery materials*
- North American OEMs are looking to reduce reliance on battery materials processed in China
- Governments are looking to reduce the geo-political risks by supporting development of domestic supply
- U.S. Inflation Reduction Act prohibits EVs from containing any critical minerals sourced from China and Russia to qualify for US\$7,500 vehicle credit

Electra is commissioning North America's only cobalt sulfate refinery

Executing a multiprong strategy in Ontario

- Constructing a cobalt sulfate refinery
- Launched black mass trial
- Leveraging low-carbon footprint and technical expertise
- Plans to expand production
- Signed MOU with Three Fires Group to recycle battery waste



Focused on providing North American supply of battery materials

First cobalt sulfate refinery in North America

- Fully-permitted facility
- 5,000 tonnes of cobalt contained in sulfate production per annum
- Potential to expand to 6,500 tpa
- Low-carbon, hydrometallurgical process
- Onsite testing and analysis



Low-carbon intensity provides competitive advantage

June 2021





December 2022

Cobalt sulfate refinery – December 2022 aerial view



Off-take agreement with LG Energy Solution



- 3-year strategic supply agreement
- 7,000 tonnes of battery grade cobalt
- Represents 60% of refinery output during term
- Value of agreement is approximately \$400M*

Marks Electra's first commercial agreement in the EV supply chain

Black mass recycling



Black mass recycling



Recovery of high value elements contained in shredded lithium-ion batteries



Black mass typically contains nickel, cobalt, lithium, copper, and graphite



Recovered elements are processed and refined



Recycling process produces multiple marketable products



Keys to recovery are effective hydrometallurgical process and low carbon emissions

Electra launched large-scale trial in December 2022

Electra launched black mass trial

- Large scale trial launched at refinery in Ontario
- Apply proprietary hydromet process previously tested
- Recovery of high value metals for resale anticipated
 - > Nickel, cobalt, lithium, manganese and graphite
- Critical success factors for trial
 - > Effectiveness of process
 - > Recovery rates



Success will pave wave for commercialization

Electra achieved industry first

- First recovery of nickel-cobalt MHP product via hydrometallurgical process in North America
- Recovery and production of lithium carbonate
- Other elements recovered:
 - > Manganese and graphite
- Recovery rates are at or superior to results achieve in lab setting
- Validates Electra's hydrometallurgical process and work to make refinery operational



First recovery of nickel-cobalt MHP via hydromet process in North America

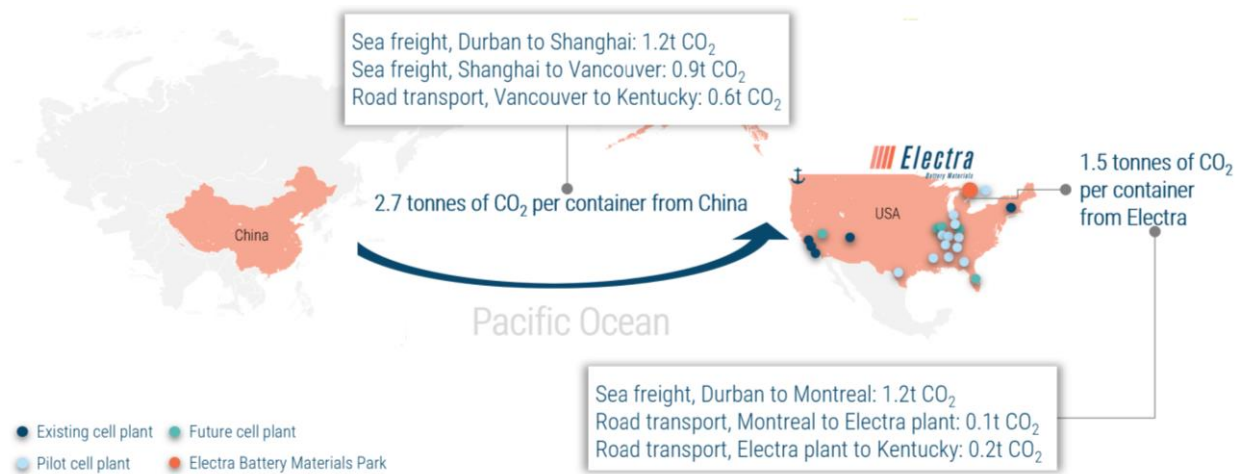
Low-carbon & Ethical products



Electra's low-carbon footprint*

Up to 50% lower GHGs than Chinese peers due to power grid +90% renewable and less energy intensive hydrometallurgical process

Privileged location to North American and European supply chains, reducing ~40% GHGs from freight



Provides competitive advantage

Recent ESG developments

- Signed benefits agreement with Métis Nation of Ontario
- Joined the Responsible Minerals Initiative
- Launched Sustainability Framework
- Introduced ESG policies relating to ethical sourcing, human rights, and sustainability
- Launched inaugural Sustainability Report in Q4 2022



Targeting net zero GHG emissions by 2050

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Questions?

Electra Battery Materials

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TSX-V: ELBM

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