



From long and lean to resilient and local: the challenge of managing critical materials supply chains

Rebecca Gordon CEO, CRU Consulting



June 2021





Supply chains are facing competing pressures



And this is keenly felt in the battery metals sector



Battery metals subject to a wide range of variables; hence high uncertainty



ESG is driving major strategic responses across the value chain







China has head start in EV production - resilient and local

China expected to retain dominance in global New Energy Vehicles (NEV) sales (Regional LDV sales, 2015 – 2045, %)



- 1. Existing investments in raw material chains beyond China
- 2. Dominance in existing supply chains; E.g. all stages in REE -> Magnets -> Motors
- Development of nickel resources in Asia means raw material supplies are far from North America; However growth of circular economy will over time support localisation
- 4. China's head start in scaling up EV production gives them a cost advantage and purchase of Brands may enable faster penetration



Unique opportunity for Chinese auto sector to conquer more mature markets?



Big question marks loom for cobalt in particular



CRU From long and lean to resilient and local

By 2025, expanded gigafactory capacity in EU will reduce dependence on China for cells, but substantial buildout of PCAM capacity would be required to redirect supply lines from Asia



PCAM – Pre curser active materials

N. America technically does mine enough nickel to meet EV demand out to 2030...

...provided **entire** mined output, including Cuba, realigned to supply only EVs, which is unrealistic Future self-sufficiency in cobalt and lithium much more dependent on projects



...but realistically total self-sufficiency would need new mine supply

From long and lean to resilient and local CRU

MAT North America has serious gaps in the supply chain between mine and EVs



New and existing nickel miners targeting this space need a route to market

Challenges remain





THANK YOU

Rebecca Gordon CEO, CRU Consulting rebecca.gordon@crugroup.com

CRU International Limited

London | Sydney | Tokyo | Beijing | Shanghai | Singapore | Mumbai | New York | Pittsburgh | Sao Paulo | Santiago

Registered in England No.940750. Registered office: Charles House, 108-110 Finchley Road, London NW3 5JJ