COBALT & RECHARGEABLE BATTERIES

COBALT CHEMICALS ARE USED TO MANUFACTURE RECHARGEABLE BATTERIES. This application represents the single largest use for cobalt and the primary driver of the market. Rechargeable batteries experienced rapid growth over the past two decades due to their use in portable electronic devices. Growth in the need for batteries is accelerating from the transformative evolution to electric vehicles and the need for stationary storage of power from renewable energy and off-peak charging from the electrical grid.

LITHIUM-ION BATTERIES: Advanced, Lighter, Higher Energy Density

Tesla Model S
~14,000g Co
(30lbs)

Smartphone
~20g Co

Lithium Nickel Cobalt Aluminum Oxide (NCA)

3-9%
COBALT BY WEIGHT IN CATHODE

Use in EVs, laptops, power tools

Lithium Nickel Manganese Cobalt Oxide (NMC)

3-21%
COBALT BY WEIGHT IN CATHODE

Use in power tools, e-bikes, EVs, grid storage

Lithium Cobalt Oxide (LCO)

UP TO 60%
COBALT BY WEIGHT IN CATHODE

Ideal for cell phones, laptops, cameras.

2021 Installed Megafactory Capacity: **1,029 GWh**

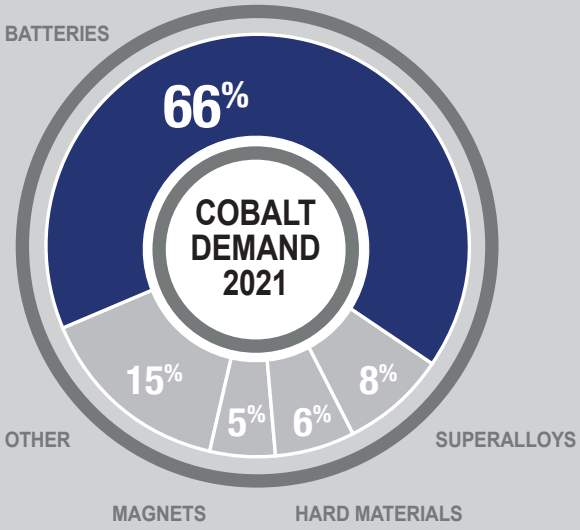
2030 BMI's Megafactory Tracker of Lithium-ion Battery Capacity Pipeline: **6,000 GWh**

Fortune Minerals is developing the NICO Project, comprised of a proposed mine and mill in Canada's Northwest Territories & refinery in Alberta, to become a vertically integrated producer of cobalt chemicals for the lithium-ion battery industry with over a million ounces of gold and 12% of global bismuth reserves as by-products. NICO will stand out as a North American cobalt chemical producer that is independent of the Congo, China, and copper & nickel primary production.

RECHARGEABLE BATTERIES *DRIVING* COBALT DEMAND

BATTERY USAGE ACCOUNTS FOR 66% OF COBALT DEMAND

(Source: Darton Commodities)



NICKEL-METAL HYDRIDE BATTERIES

15% UP TO 15% COBALT BY WEIGHT

LITHIUM-ION BATTERIES

60% UP TO 60% COBALT BY WEIGHT

15kg UP TO 15KG OF COBALT IN A TYPICAL LITHIUM-ION CAR BATTERY

Cobalt is recognized as strategically important by both the US and European Union as it is critical to a number of metallurgical and chemical products but is susceptible to supply concerns.

73% of mined cobalt is sourced from the Congo

China refines **75%** of the world's cobalt

98% of the world's cobalt is mined as a by-product of copper & nickel

Tesla announced its first Gigafactory in 2014 with an expected lithium-ion battery capacity greater than the world's in 2013. By early 2022 Benchmark Mineral Intelligence was tracking 299 lithium-ion Megafactories globally!

Photo credit: Tesla

FORTUNE MINERALS LIMITED

617 Wellington Street,
London, ON, N6A 3R6
(519) 858-8188 | info@fortuneminerals.com

FORTUNEMINERALS.COM

APRIL 2022