

NICKEL

DRIVING A BATTERY REVOLUTION TOWARDS AN ELECTRIC FUTURE

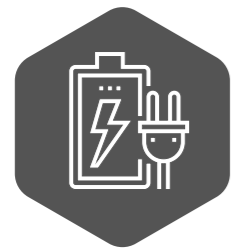


KEY PROPERTIES



ENERGY DENSITY

Cu can be easily shaped and bent for wiring



STORAGE CAPACITY

Cu can easily and efficiently move heat and electricity



LIGHTER WEIGHT

Cu is 100% recyclable and can be used over and over without losing quality.

TECH SPOTLIGHT



EV BATTERIES

80%

Nickel comprises 80% of the mass in NCA & NMC batteries used in EVs like Tesla, which will require:

231,000 METRIC TONS

of Nickel needed for EV battery production by 2023.



SUPPLY CHAIN

2019 TOP PRODUCERS



1. INDONESIA



2. PHILIPPINES



3. CANADA

2019 U.S. PRODUCTION

14K METRIC TONS

Nickel (Ni) produced in the U.S., less .5% of global production totals.

↓ **10%**

Drop in U.S. production since 2018



PRICE VOLATILITY
SUPPLY SHORTFALLS
GROWTH HEADWIND

DEMAND OUTLOOK



ELECTRIC VEHICLES

EVs made up 0.8% of global car sales in 2018, but forecasted to hit 14.5% of all car sales in 2030, an increase of:

↑ **1650%**
PERCENT CHANGE

in EV demand over the next decade.

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Sources:
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