



# Climate effective raw material supply for a Green Europe

Boliden

Mikael Staffas, Group CEO

# Integrated company with both mines and smelters

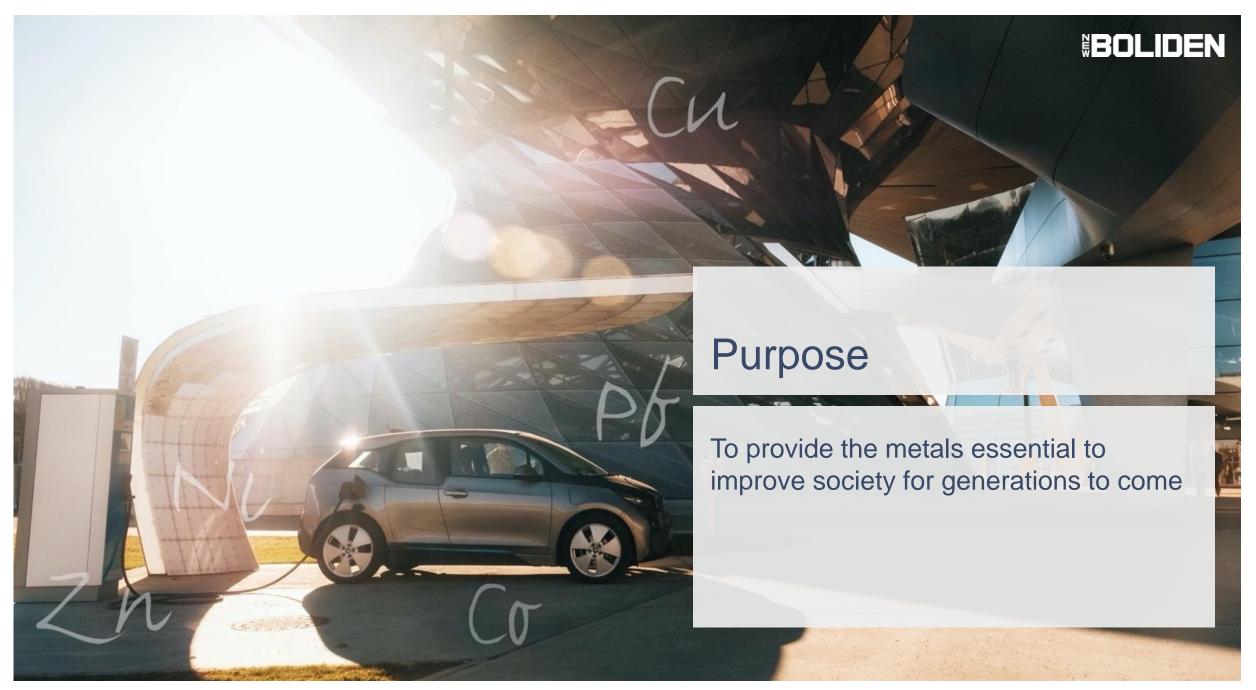
**MINES** 

**SMELTERS** 

**HEADQUARTERS** 









### Boliden – part of the sustainable circular economy



## Cu









#### **GALVANISED STEEL**

Protective zinc coatings increase the life of a car and allow manufacturers to offer tenyear rust protection guarantees for new lighter steel types.

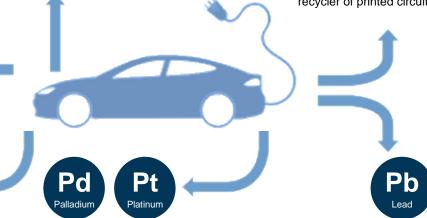
Cu

#### **WIRES, BATTERIES AND MOTORS**

Electric cars use about 80 kg of copper, which is four times more than in a conventional car.

#### PRINTED CIRCUIT BOARDS

Modern cars contain several computers, all of which require a circuit board. Circuit boards consist of a significant amount of copper, gold and silver. Palladium is also used. Boliden, with operations in Rönnskär and Harjavalta, is a world-leading recycler of printed circuit boards and producer of vital metals.



#### LITHIUM-ION BATTERIES

Co

Lithium-ion batteries contain large quantities of copper, nickel and cobalt sulphates, all of which are mined at our mines and sold by Boliden.

#### **CATALYTIC CONVERTERS**

Palladium and platinum are used in vehicle catalytic converters to reduce harmful emissions, including in hybrid vehicles. Fuel cell cars, which have zero emissions, use a platinum catalytic converter.

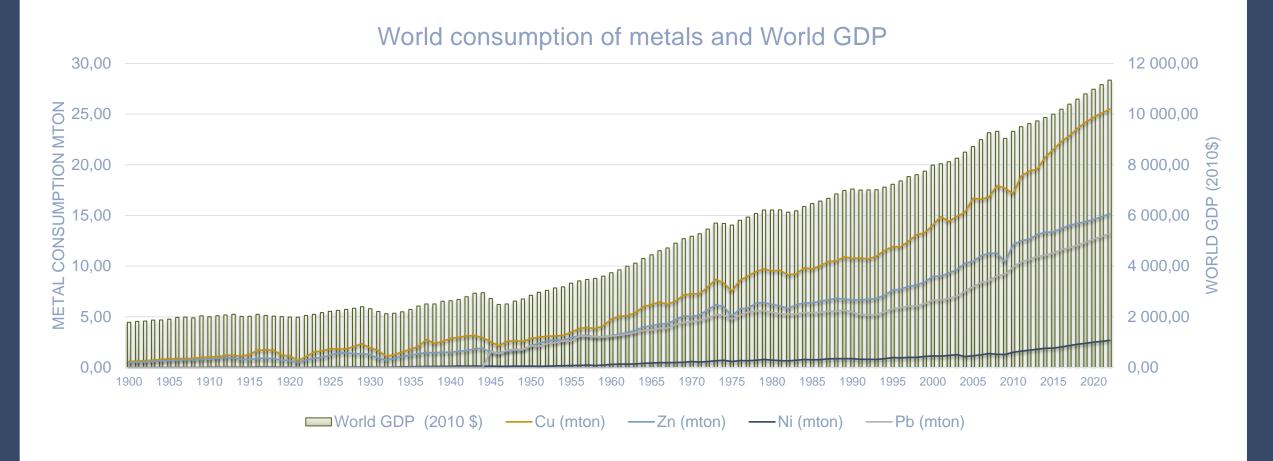
#### LEAD ACID BATTERIES

Boliden's operations in Bergsöe make it one of Europe's largest recyclers of lead-acid batteries from cars.





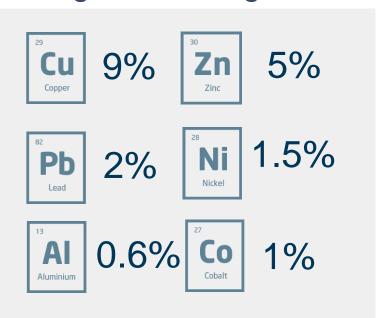
# Economic growth and climate transition drives metal demand





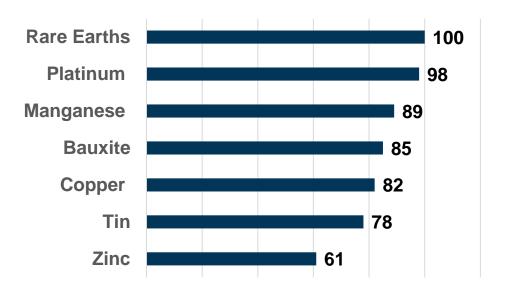
## Europe is relying on others for raw material supply







A high import dependency on primary raw materials





## Despite having safe & low carbon solutions internally

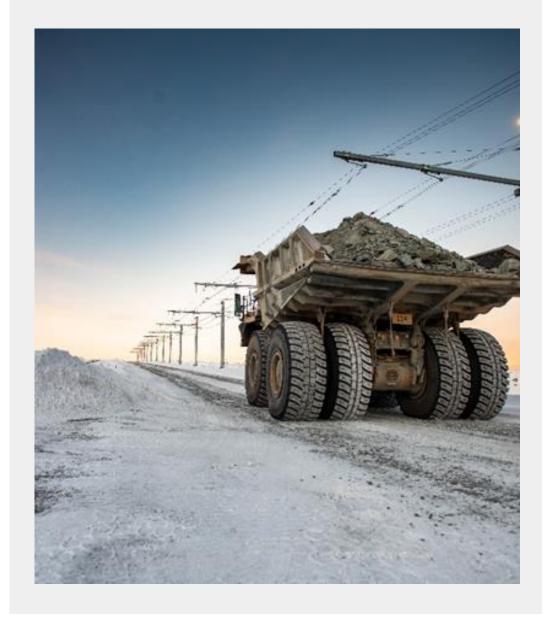
- European Raw Material Alliance (ERMA) highlights the need for improved raw material supply
- In Sweden, this must translate to increased permit processes
  - Where authorities are able to make overall tradeoffs
- Stable long-term conditions are necessary to minimize carbon leakage

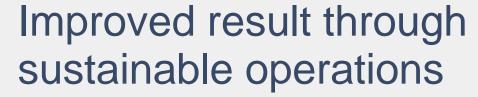




- Boliden's target is to reduce carbon dioxide intensity by 40% 2012-2030
  - **–** 2012: 0,77
  - 2020: 0,61
  - 2030: *0,4*6
- Electric trolley, Aitik and Kevitsa
- Nickel expansion, Harjavalta
- Biofuels for transports
- Alternative reduction agents
- Improved power mix
- Ventilation-On-Demand







- Focus on health and safety improves production stability
- Restrictive emission norms improves environmental performance
- Expertise in methods for decommissioned mines
- Dialogue and long-term cooperation with local communities



