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# Boliden Smelters

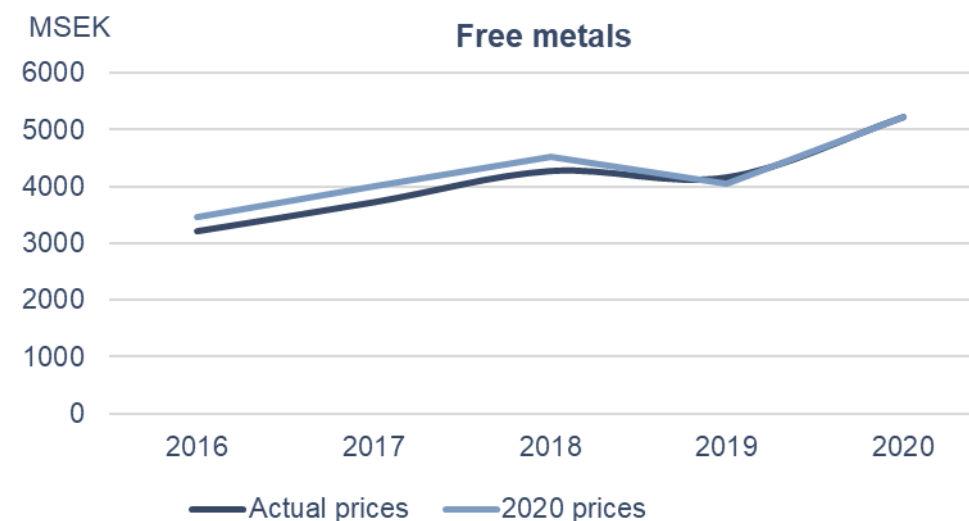
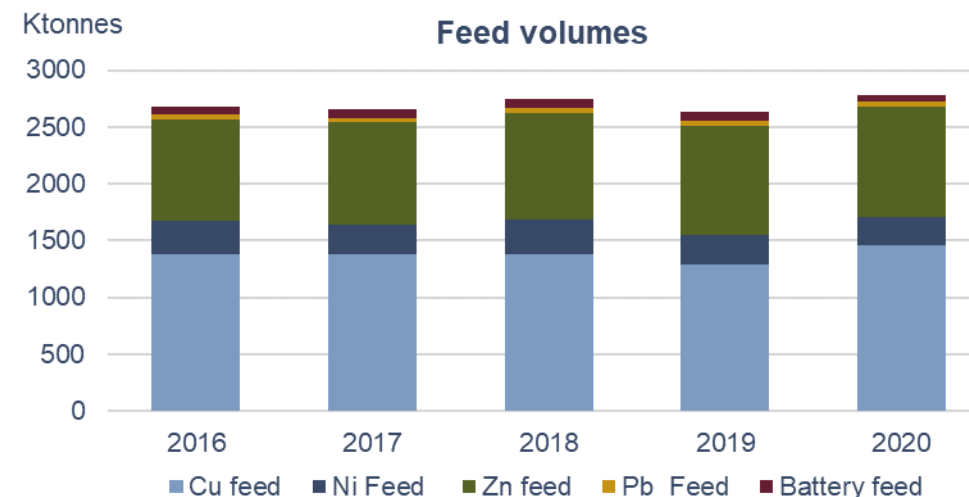
Expanding into green metals

Daniel Peltonen, President Boliden Smelters

**CMD 2021**

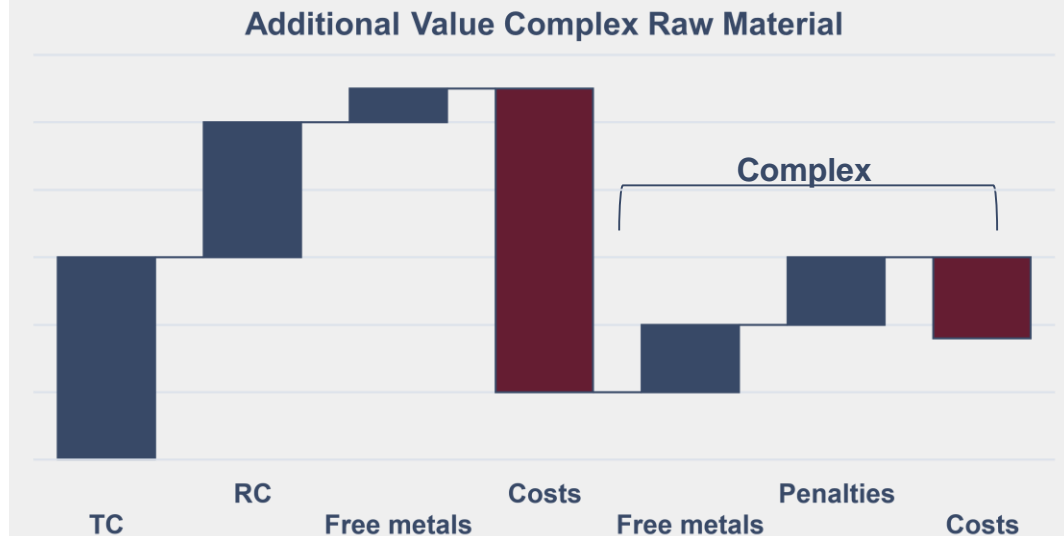
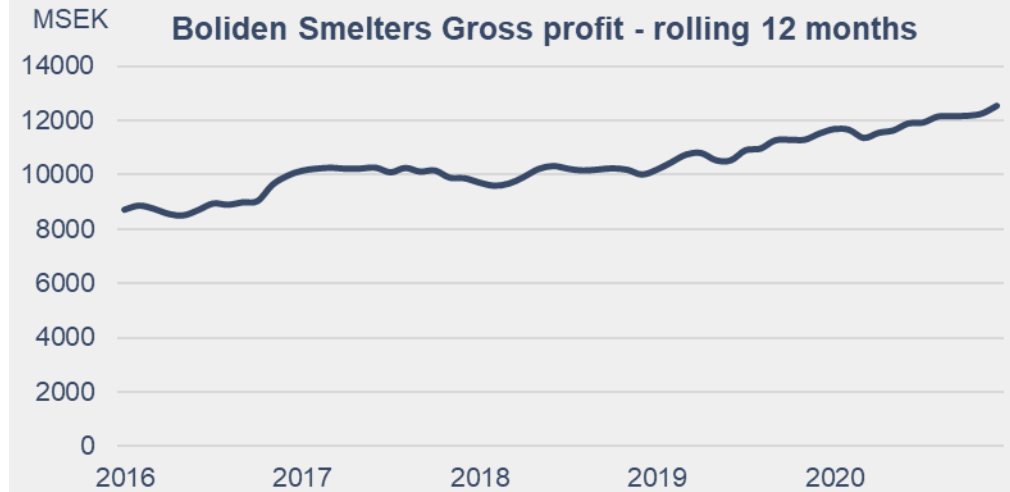
# Key highlights since CMD 2019

- New acid plant and capacity expansions in Harjavalta
  - Cu concentrate feed, Cu cathodes and Ni feed
  
- Rönnskär projects well on track
  - New underground repository
  - New Leach Plant
  - De-bottled Ag capacity, increased Cu feed
  
- Bergsöe plastic separation
  
- Increased capability to handle complex materials



# Increasing profitability by improving raw material margins

- **Gross profit development**
  - Increase ~1 BSEK 2020 compared to 2019, main part from free metals
- **Complex raw materials**
  - Challenging physical and chemical properties
  - Ensure handling capability, maintain recovery levels
- **Higher TC&RC, free metals and penalties**



# Rönnskär Leach Plant reaching commissioning

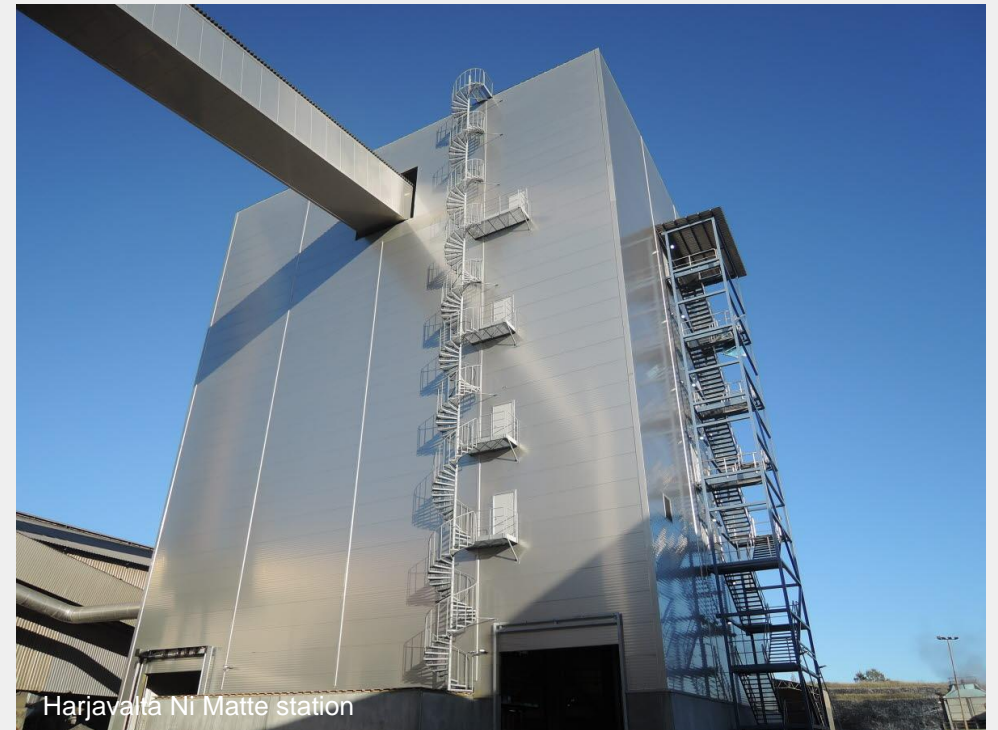
- Extracting additional value from intermediates
  - 25 ktonnes lead sulphate
  - 25 ktonnes copper/zinc sulphate
- Decreasing waste volume to underground repository by 80%
- Capex: 750 MSEK
- Commissioning Q2 2021



Rönnskär Leach Plant

# Harjavalta Ni Expansion coordinated with maintenance

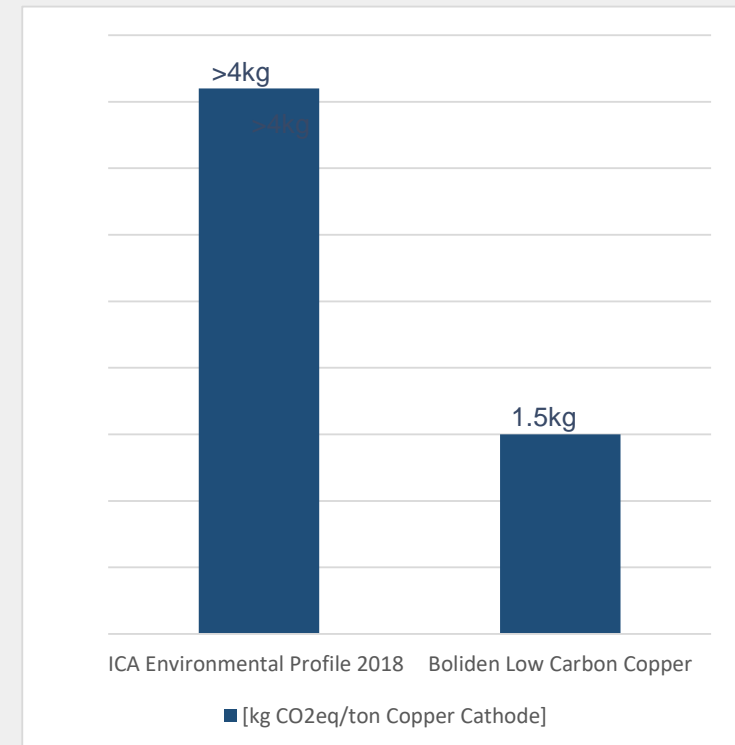
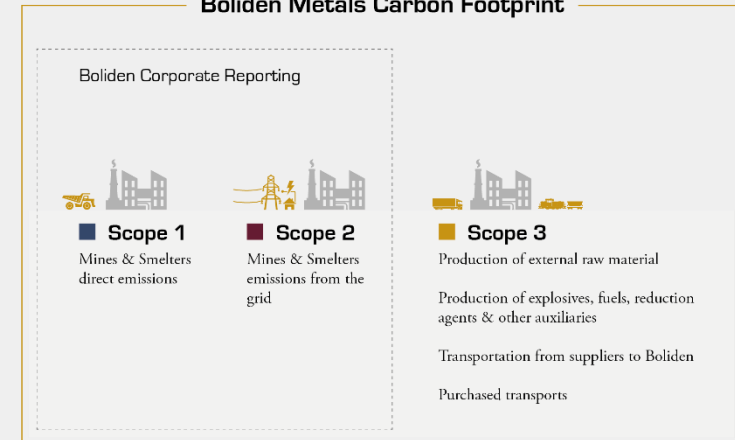
- Nickel feed capacity from 310 to 370 ktonnes
- Lower CO<sub>2</sub> intensity by up to 20%
- Improving safety by increasing automation
- Greater raw material flexibility
- Capex: 40 MEUR
- Commissioning Q3 2021



# Committing to Green Metals with Boliden Low-Carbon Copper

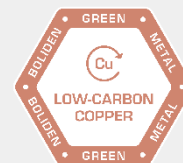
- Copper with a low carbon footprint, verified by third party
- Produced from Boliden copper concentrate and recycled copper
- All significant emission categories from cradle-to-gate included
- We are well positioned compared to global average

## Boliden Metals Carbon Footprint



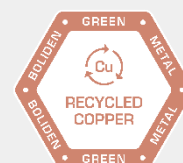
# World's first verified Low-Carbon Copper now available!

- 25% of Boliden's annual Low-Carbon Copper capacity already contracted
  - Agreements with Schwering und Hasse, Essex Furukawa and Elcowire Group
- First volumes delivered to customers



## **Boliden Low-Carbon Copper** **<1.5kg CO<sub>2</sub>/kg Cu**

Produced from copper concentrate mined in our own mines



## **Boliden Recycled Copper** **<1.5kg CO<sub>2</sub>/kg Cu**

100% recycled copper produced from, for example, electronics



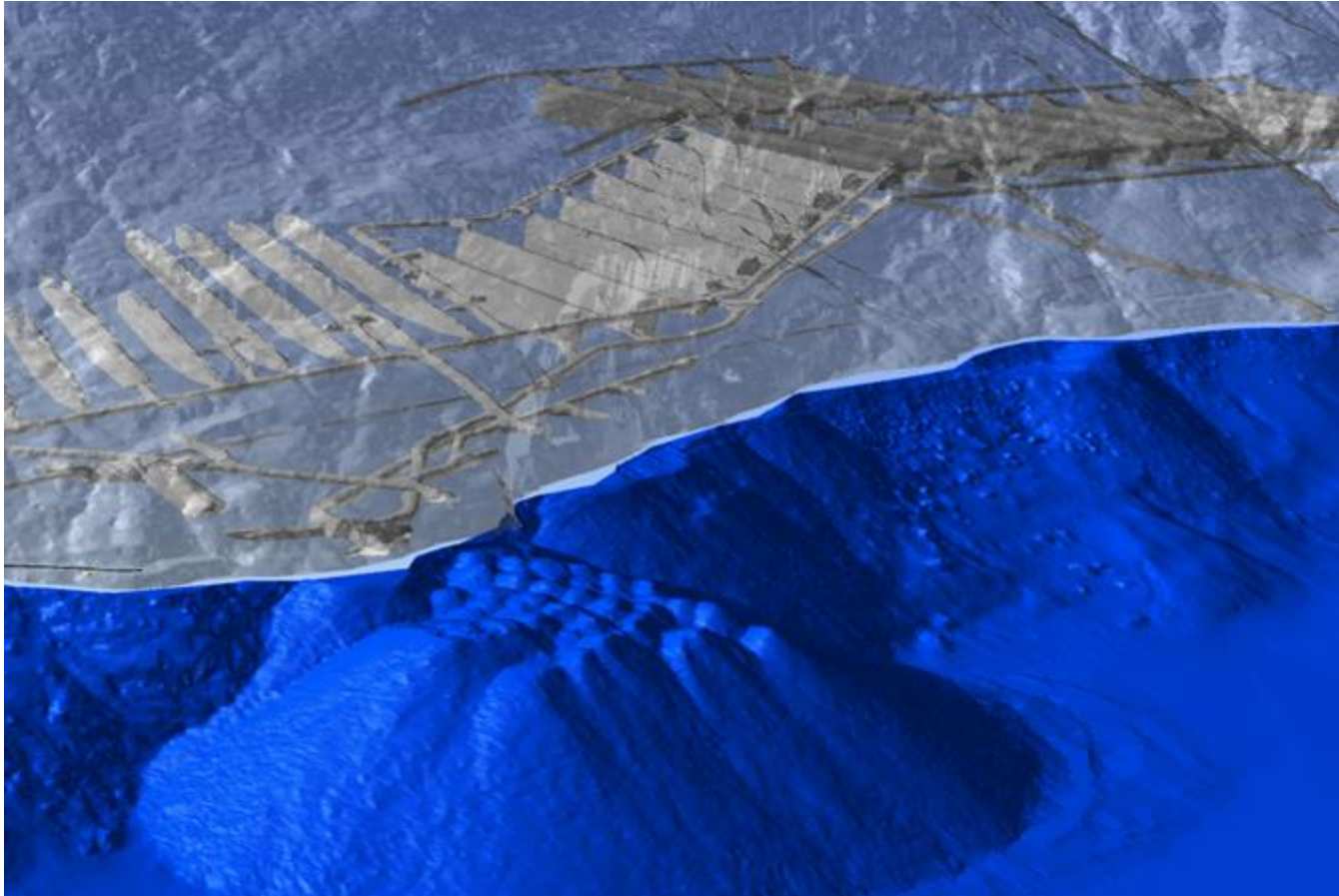
# Green Zinc – Odda 4.0 Strategic Rationale



- Strong industrial logic
  - Economies of scale
  - Efficient logistics
  - Energy efficiency
  - Automation and digitalization
  - Recovery of lead and silver
- Strong environmental credentials
  - Excellent CO<sub>2</sub> footprint
  - 100% hydroelectric power
  - Sustainable waste handling
- Financial return above Boliden's target
- Comparable to Boliden's largest historical Capex projects



## Odda 4.0 – Permit process still pending



- We ask for a longer permit commitment
  - 20 years to motivate investment
- Evaluating environmental impacts of continued cavern depositing
  - Ensuring groundwater conditions

# The most climate friendly and respected metal provider in the world

Complex raw material



Production efficiency

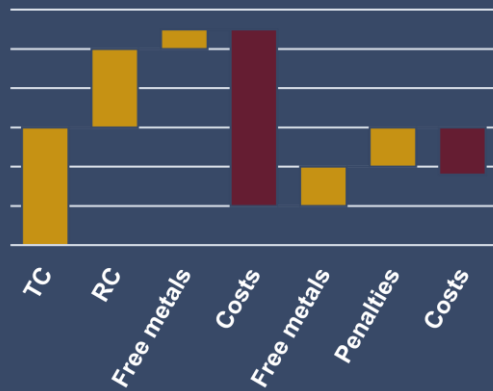


Sustainable operations

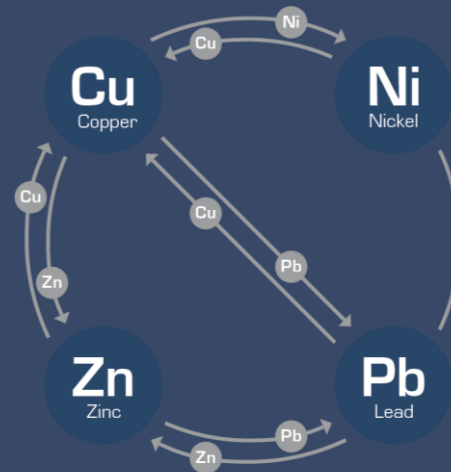


Boliden green metals

Improved raw material margin



Improved recoveries



Low CO<sub>2</sub> intensity



Sustainable waste solutions

