



## Corporate Responsibility – raised sustainability performance

Thomas Söderqvist, Senior Vice President Corporate Responsibility

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# Corporate Responsibility – raised sustainability performance



Environment

Economy

Society

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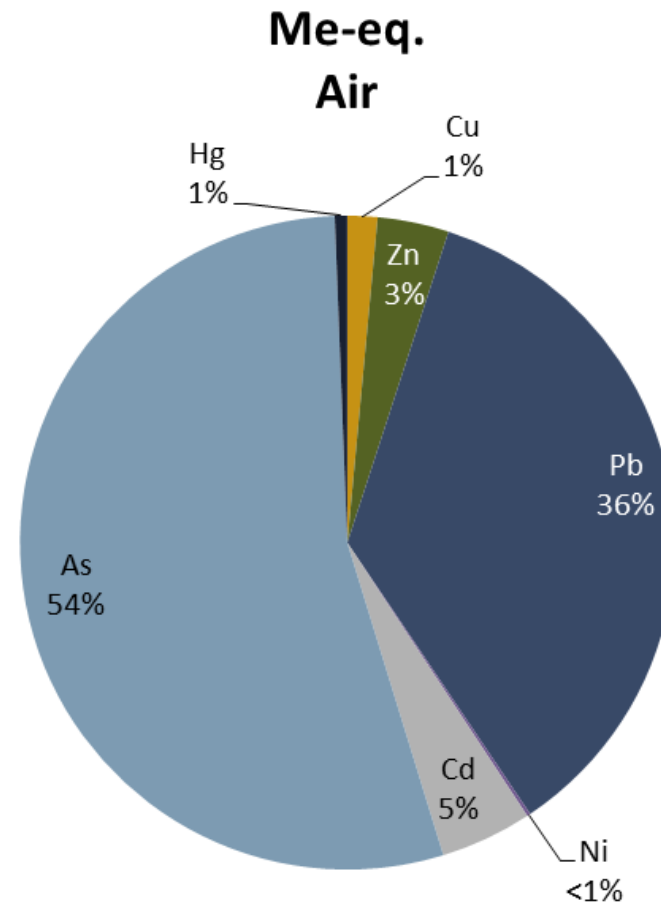
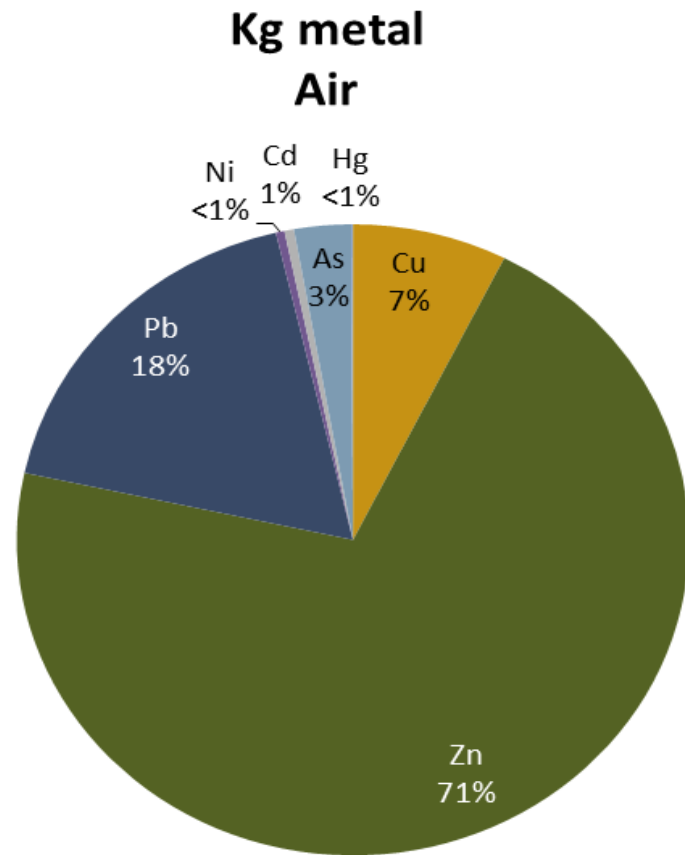
# Environment

- Emissions from operations
  - Metal emissions down 20 % in 10 years
  - SO<sub>2</sub> emissions down 14 % in 10 years
- CO<sub>2</sub>-intensity
  - No significant change
- Environmental investments increasing
- Developing methodology for evaluating environmental investments



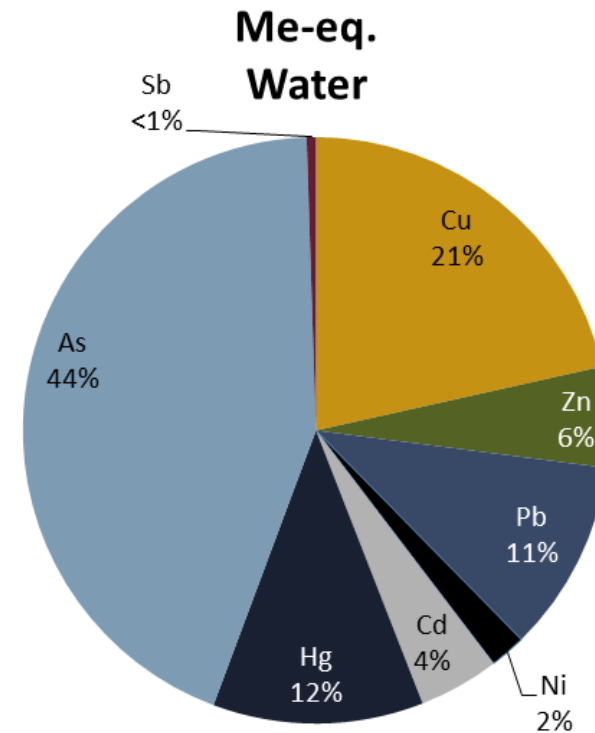
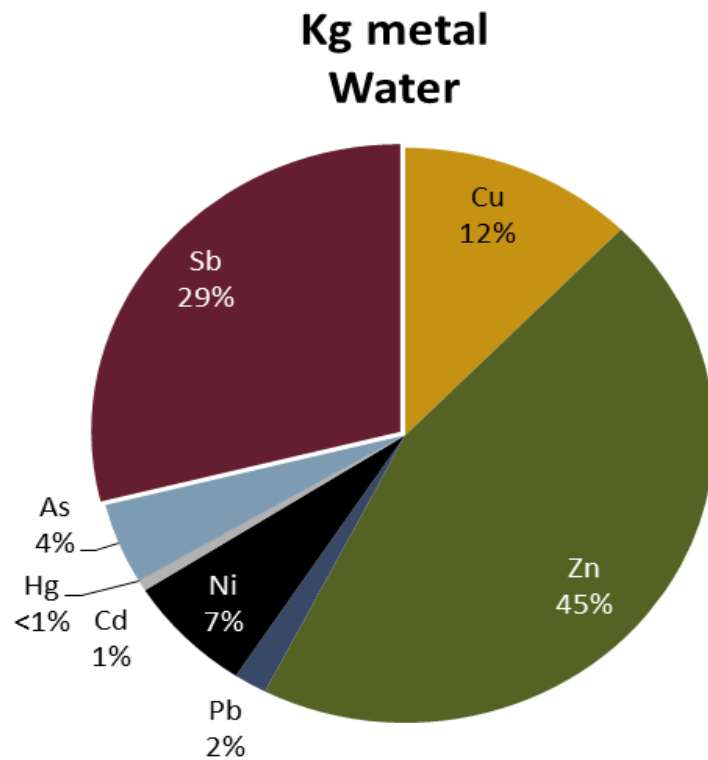
# Metals to air

- Each metal weighed vs Cu based on toxicity ⇨ Metal equivalent
- Metals to air 118 ton Met eq / year
- Emissions reduced 5 % in 10 years



# Metals to water

- Each metal weighed vs Cu based on toxicity ⇒ Metal equivalent
- Metals to water 8 tonnes Met eq / year
- Discharges reduced by 78 % in 10 years



# Evaluating environmental impact

## Water treatment process Rönnskär

Investment 150 MSEK  
Effect 2680 kg Me eq / år  
Reduced metals Cu, Pb, As  
Cost 58 TSEK / kg Me eq / år

## Renström mine water treatment

Investment 35 MSEK  
Effect 70 kg Me eq. / år  
Reduced metal Zn  
Cost : 500 TSEK / kg Me eq / år

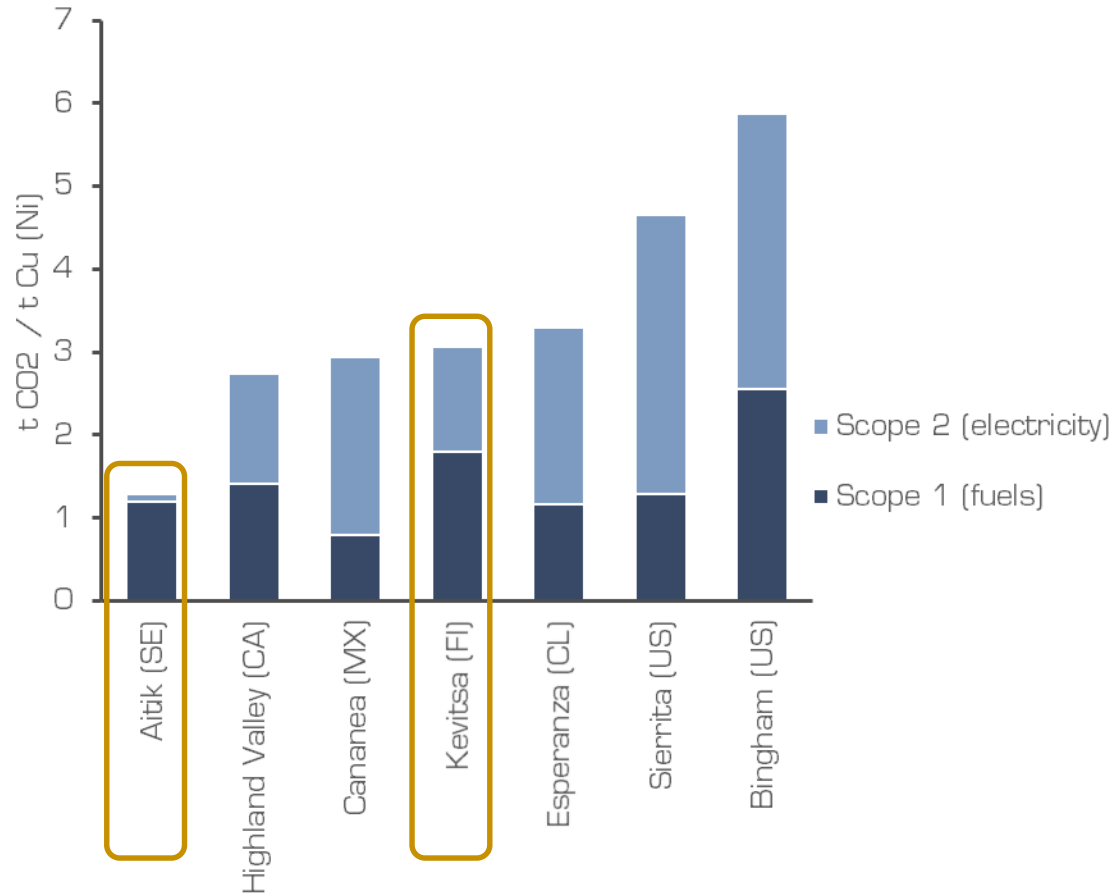
## Guidance values (Work In Progress) for environmental investments

- 1 kg Me-eq / year, to water: < XX SEK
- 1 kg Me-eq / year, to air: < XX SEK

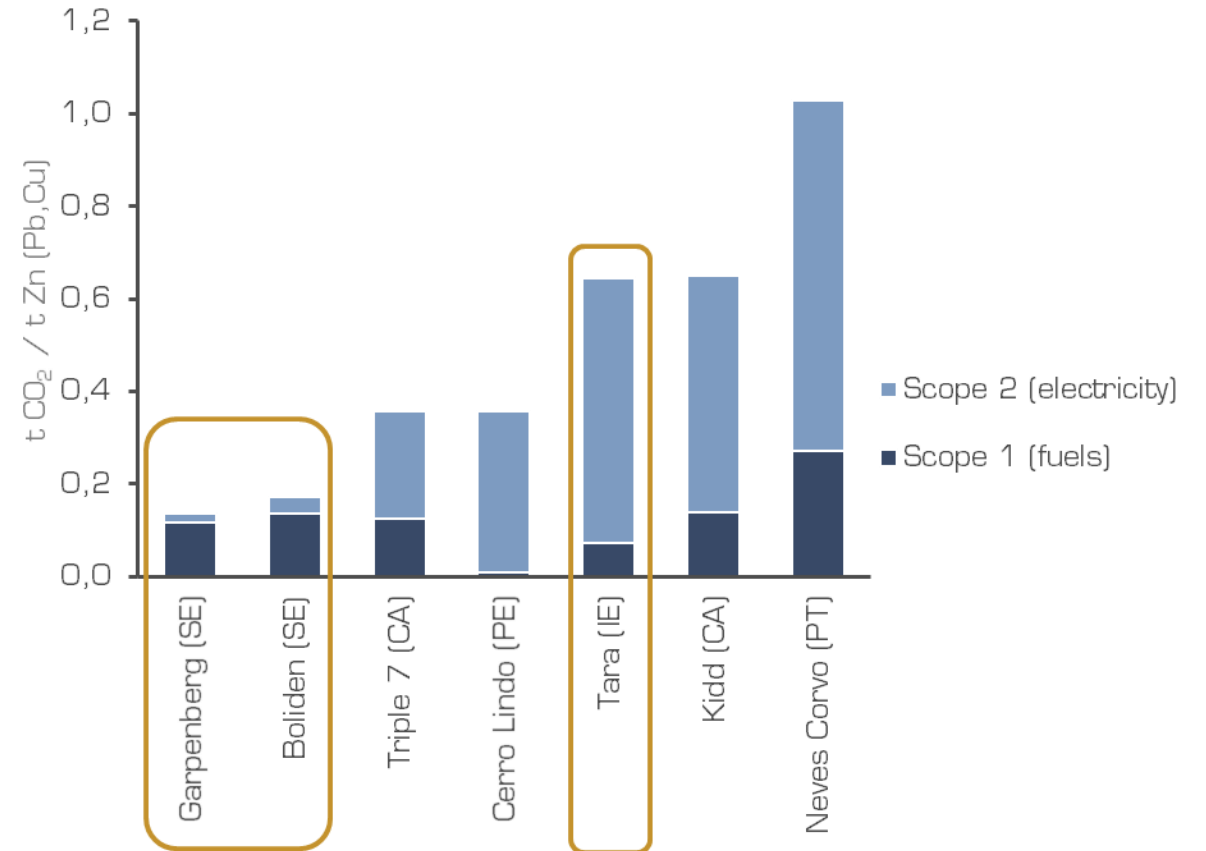


# Boliden has a competitive advantage in CO<sub>2</sub> in mining...

CO<sub>2</sub> intensity, open pit Cu mines



CO<sub>2</sub> intensity, underground Zn mines



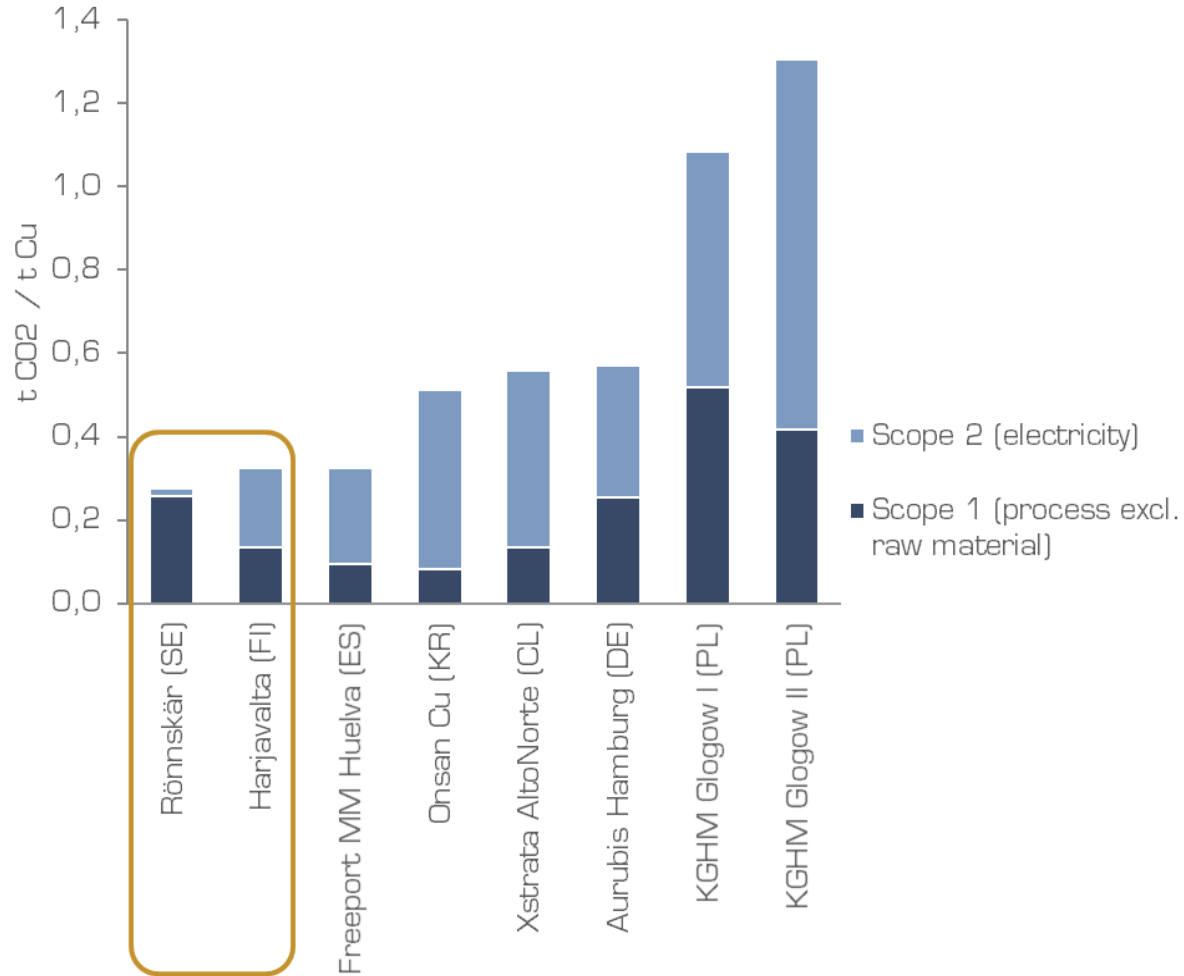
Source: Boliden calculations based on WoodMackenzie data, June 2017. For electricity EIA coefficients have been used.  
 Note: Data for Kevitsa adjusted 07/16-06/17



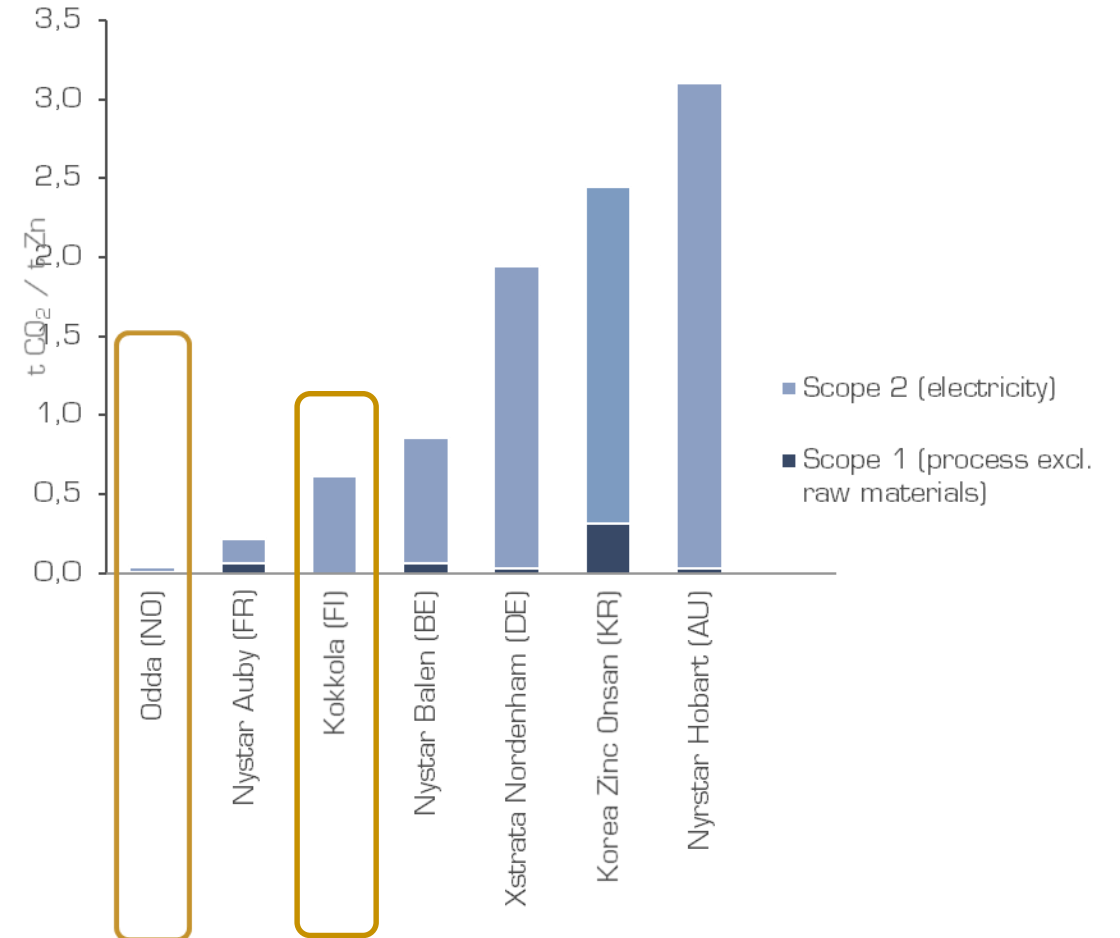


# ... and in smelting

## CO<sub>2</sub> intensity, Cu smelters



## CO<sub>2</sub> intensity, Zn smelters



Source: Source: Boliden calculations based on WoodMackenzie data, June 2017. For electricity EIA coefficients have been used.

# Strong position in recycling

## Electronics – Rönnskär

Electronic components from computers, mobile phones and electronic goods collected from consumers

The metal content is recycled at Rönnskär and new metal products produced

## Lead batteries – Bergsö

Used lead batteries from european consumers

Lead resmelted - recycled to batteries

From 2018 Lead and Plastics separated before smelting and plastics recycled

Reducing CO<sub>2</sub> emissions 20-25 %



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