



Continuing to deliver operational improvements in smelters

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Continuing to deliver operational improvements in smelters

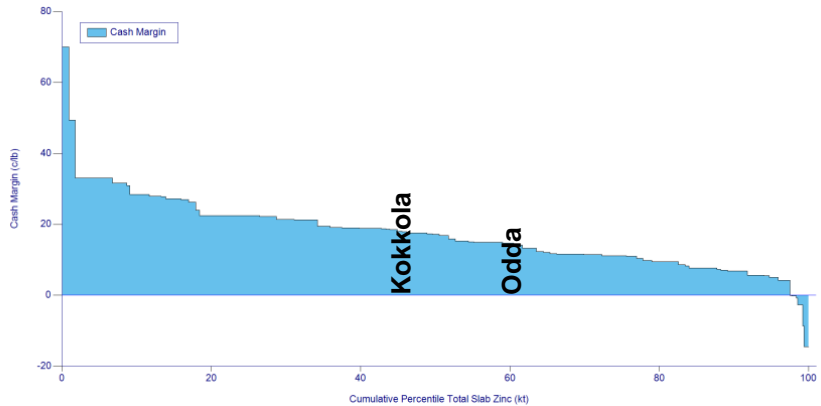
Improve operational efficiency

Increase flexibility

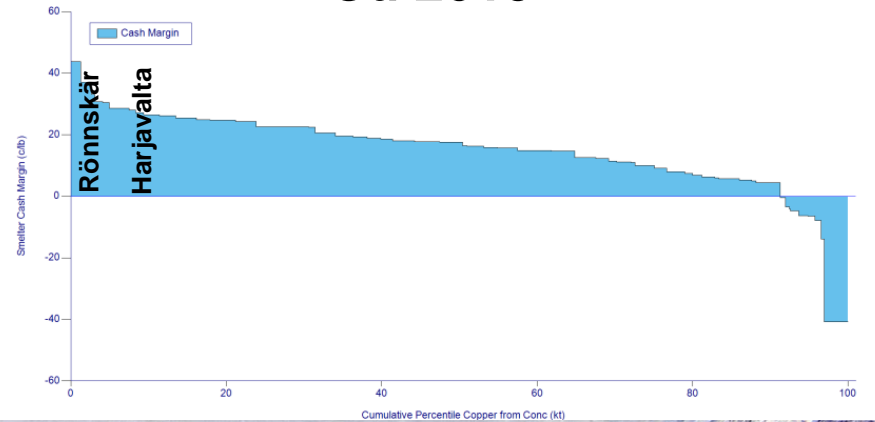
Maximise metal & by-product production

We are further improving our competitive position

Zn 2015



Cu 2015



Note: Cash margin, normal.

Source: Wood Mackenzie Q1 2016.

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Odda – increase zinc capacity to 200 kton

- +30 kton to 200 kton zinc/year
- De-bottlenecking investments
- Capex 350 MNOK
- New capacity level beginning Q2 2017

Expansion project on plan

Revamping & modernization of old cellhouse

- Respacing to reduce energy consumption
- New polymer concrete cells – maintenance free
- New anode preparation machine

New Direct Leach reactors

- Two new additional leach reactors
- Expanded concentrate and calcine storage

Revamping of leaching and purification

- New and expanded jarosite plant
- New purification reactors & filters
- Expanded surge volumes

Rönnskär action plan well under way

**Cost
reductions
110 MSEK***

- Contractors & manning
- Consumables

200 MSEK in
annual EBIT
impact
2015 vs 2013

75 MSEK to
achieve in 2016

**Improved
process
balance
90 MSEK**

- Raw material optimisation
- Impurity capacity utilisation
- Increased impurity capacity

*) Net impact adjusted for volume and maintenance

Actions in 2016 to improve process balance by reducing intermediate stocks

- Raw material optimisation
 - Selection of raw materials with lower content of critical impurities to open up treatment capacity for intermediates
 - Optimization of free metals towards bottlenecks
- Improve utilization of existing impurity capacity
 - Optimising impurity content in raw material mix towards bottlenecks by daily planning, stock control, logistics
- Increase impurity outlet capacity
 - Slag concentrator capacity +30% (80 kton/y)
 - Higher converter availability through improved quality of refractory and brick laying

Increase flexibility & margins through raw material mix

Gross profit breakdown

Premium
By-products
Free metals
TC/RC

Zinc smelter

Sulphuric acid,
aluminium flouride

Mainly zinc,
silver

Price
participation

Copper smelter

Sulphuric acid,
palladium con.

Mainly copper,
gold, silver

Fixed

Components

Customer mix

By-product price,
raw material mix

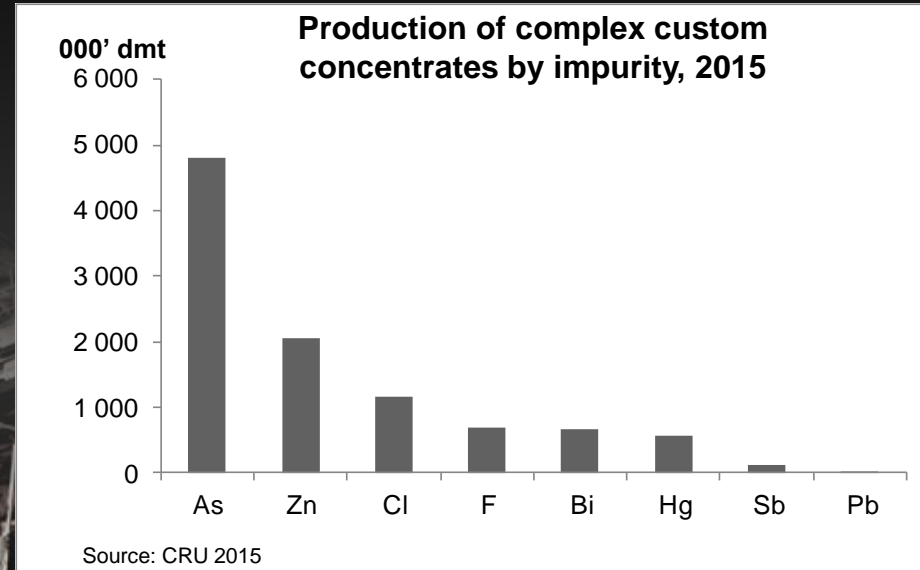
Metal prices,
raw material mix

TC benchmark,
zinc price,
raw material mix

Note: Includes the main free metals and by-products for a zinc and copper smelter.

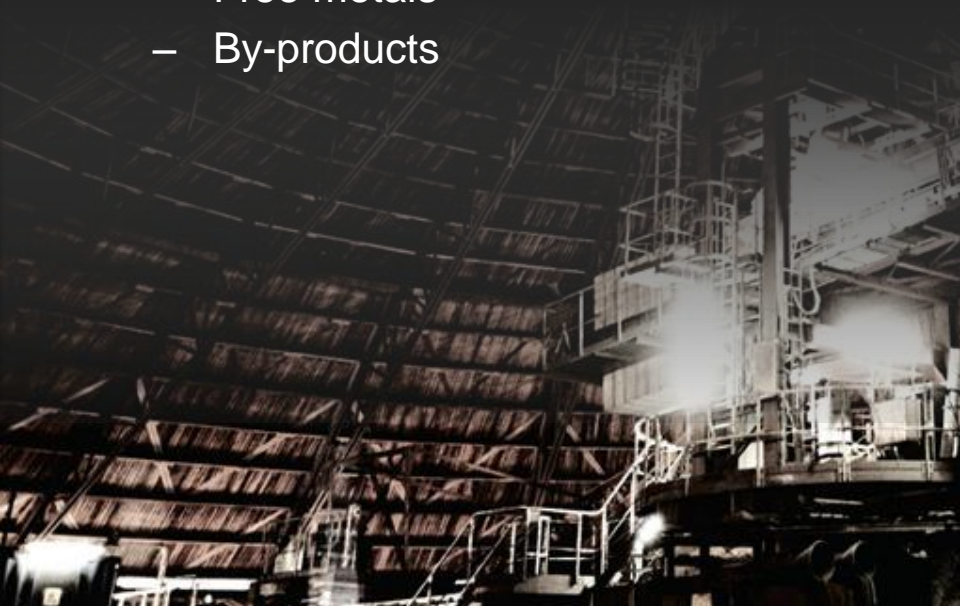
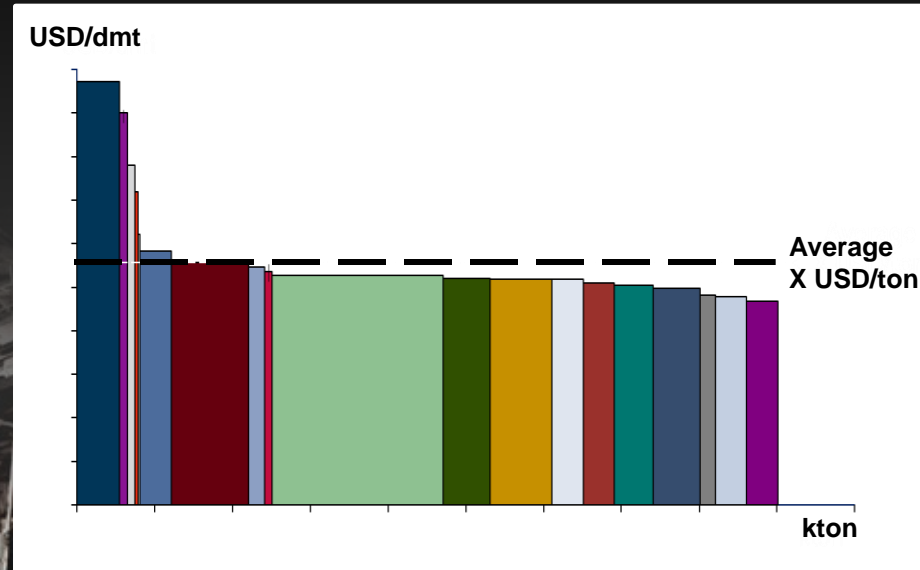
Complex concentrates creates opportunities...

- Complex feed driven by
 - Market trends
 - Profitability
 - Capability



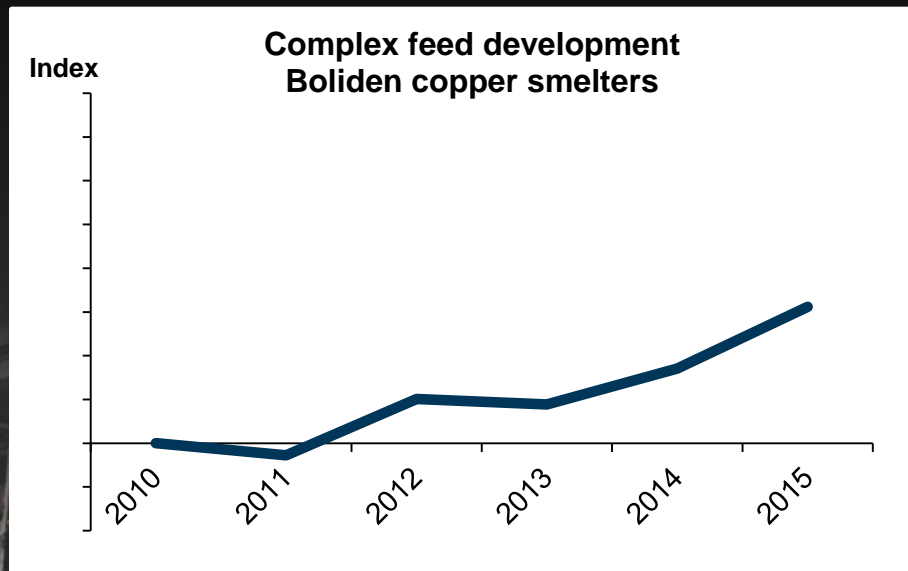
...and increase value

- Value drivers
 - TC and penalties
 - Free metals
 - By-products



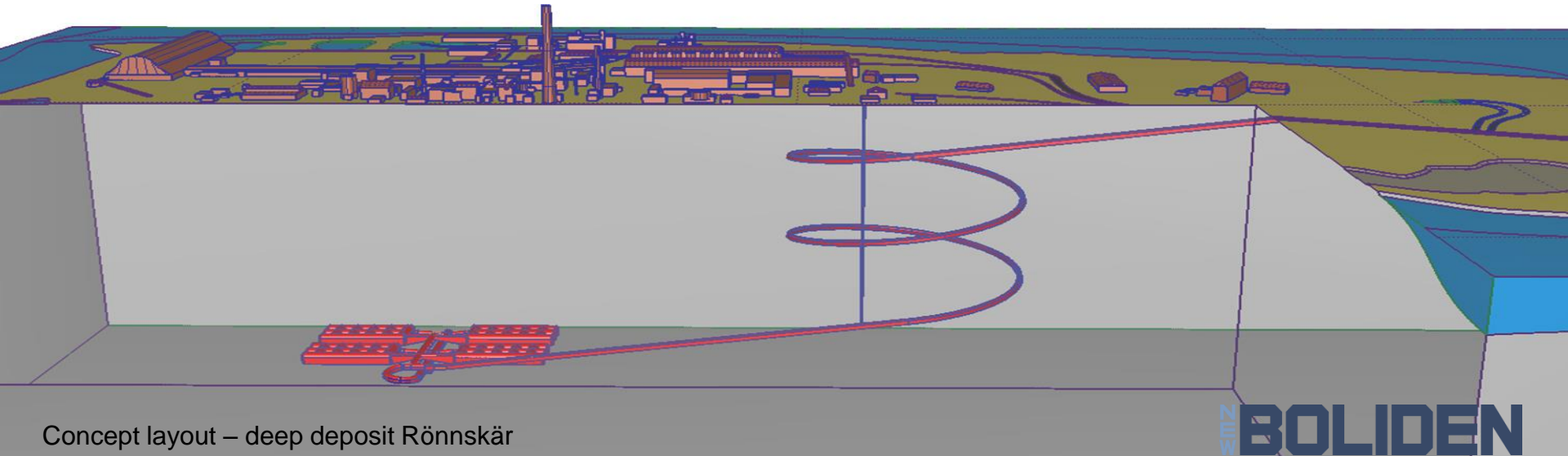
Boliden creating value through raw material mix

- Complex zinc feed stable
- Complex copper feed increasing
 - Primary and secondary
 - 12% CAGR 2010-2015 in feed mix



Waste capacity vital to optimise raw material mix

- Need to store complex waste in a sustainable manner
 - Deep deposit being built at Rönnskär
 - Mountain caverns at Odda



Concept layout – deep deposit Rönnskär

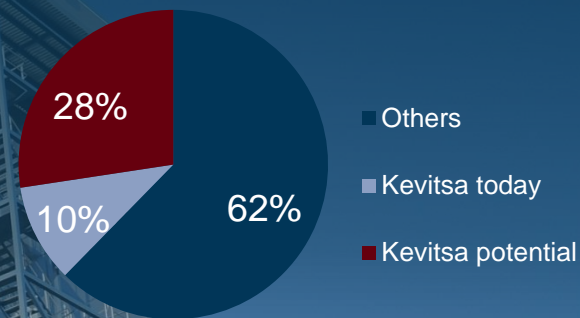
New nickel business model increase metal production and earnings

- Old model
 - Tolling fee
- New model
 - TC
 - Free metals including nickel, copper, precious metals, PGM's
- Concentrate feed +18% 2015 vs 2014
- Nickel in matte 17 kton H2 2015

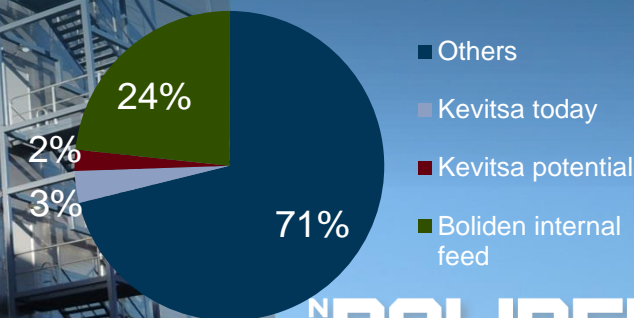
Kevitsa acquisition – in-house nickel feed base load and increase attractive copper feed

- Nickel smelting benefits from in-house base load
 - Optimising mine and smelting interface
 - Low liquidity market
 - Nickel strategy in line with copper and zinc
- Copper with attractive by-product credits

Nickel feed in Harjavalta, pro forma 2015



Cu feed in Harjavalta and Rönnskär, pro forma 2015



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Recovery plant in Kokkola adds silver concentrate as by-product

- Reached design capacity Q2 2015
- Reduced production from Q3 2015
 - Zinc process balance
 - Lower silver in zinc concentrate





Q&A

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Increase flexibility

Maximise metal & by-product production

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