

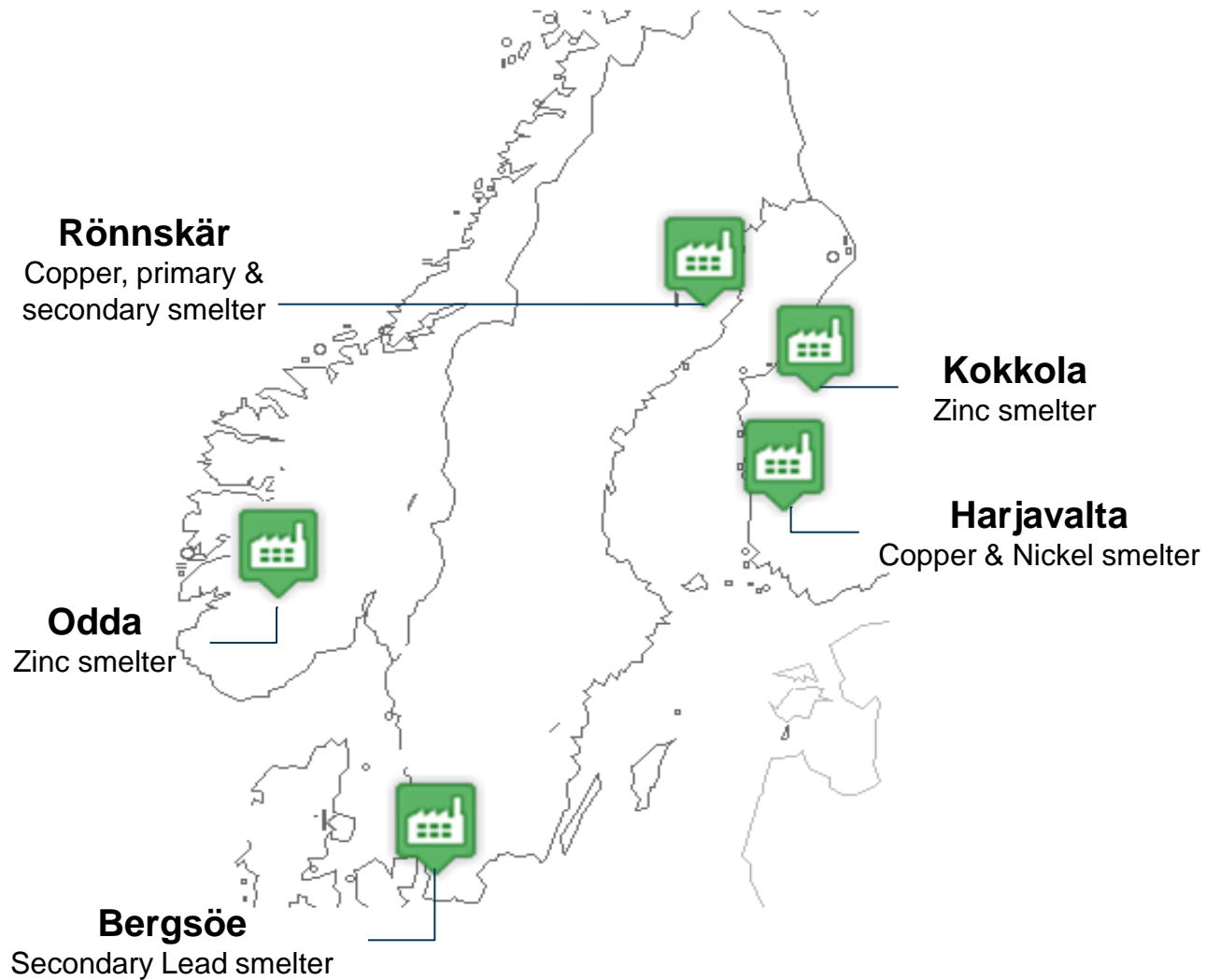


Improving performance

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President Boliden Smelters
Capital Markets Day 2014
10 November 2014

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Boliden Smelters



Value creation by improving performance

**Sustain
CR
performance**
Safety
Environment
Health

**Improve
operational
efficiency**

Process stability & reliability
Yield & lower unit cost
Reduce capital employed

**Increase
flexibility**

Impurity handling capacity
Long-term residue handling

**Maximise
metal & by-
product
production**

Broader product portfolio
Diversification in key areas

Improve operational efficiency

Delivering on process stability and reducing costs



Smelter	Time	Cost* Volume adjusted	Cost / feed Average reduction	Process Stability	Main activities
Delivered improvements					
Odda	2011-2013	-110 MNOK	-3% / year		- Overall cost saving program "P100"
Bergsöe	2011-2013		-3% / year		- New suppliers of batteries - Substituting expensive raw materials
Kokkola	2011-2013		Flat	Stable on target	- New Boliden Way
Harjavalta	2011-2013		Flat	Improved by 40%	- Maintenance and CAPEX program
Future programs					
Rönnskär	2014-2016	-125 MSEK*		150 MSEK	- "Improvement program Rönnskär"

*Excl. depreciation and volume adjusted.

Rönnskär – extensive cost reductions



Reductions in contractors & manning

- Mainly contractors 2014
- Negotiations to permanently reduce manning
 - Effect 2015, but partly offset by contractors

Less consumables

- Routines
- Reduced number of items in stock

-125 MSEK

Total cost savings*
2016 vs. 2013

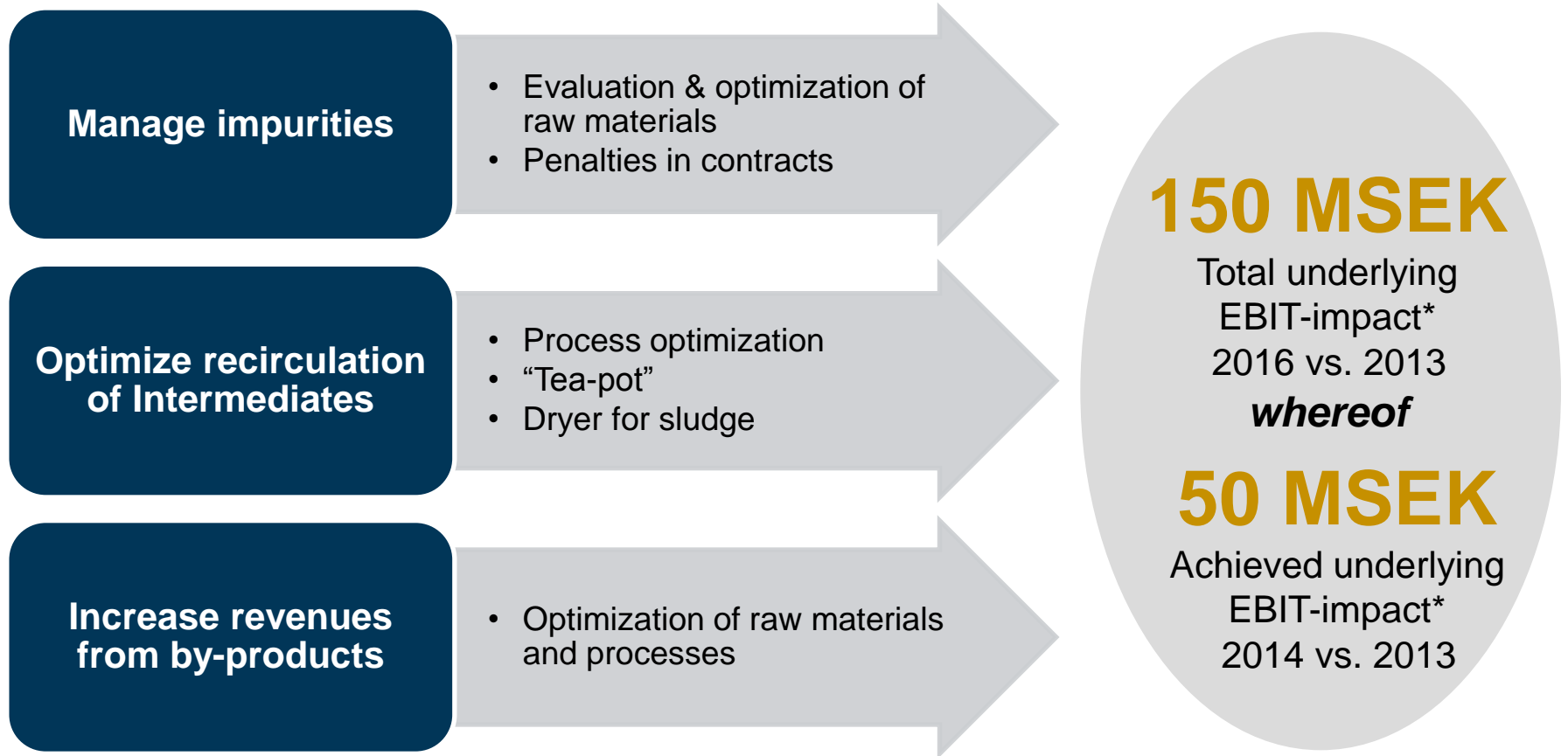
whereof

-100 MSEK

Achieved cost savings*
2014 vs. 2013

*Excl. depreciation and volume adjusted.

Rönnskär – process balance under way



*Considering external events and differences in maintenance shutdowns

Increase Flexibility

Optimisation of raw materials based on impurity and residue capacity



- **Clean concentrates** →
Competition based on costefficiency
- **Complex raw materials** →
Competition based on costefficiency
and technical competence
 - Tradeoff between complex feed vs margin
 - Procurement strategy linked to process development
 - Residue capacity becomes increasingly important

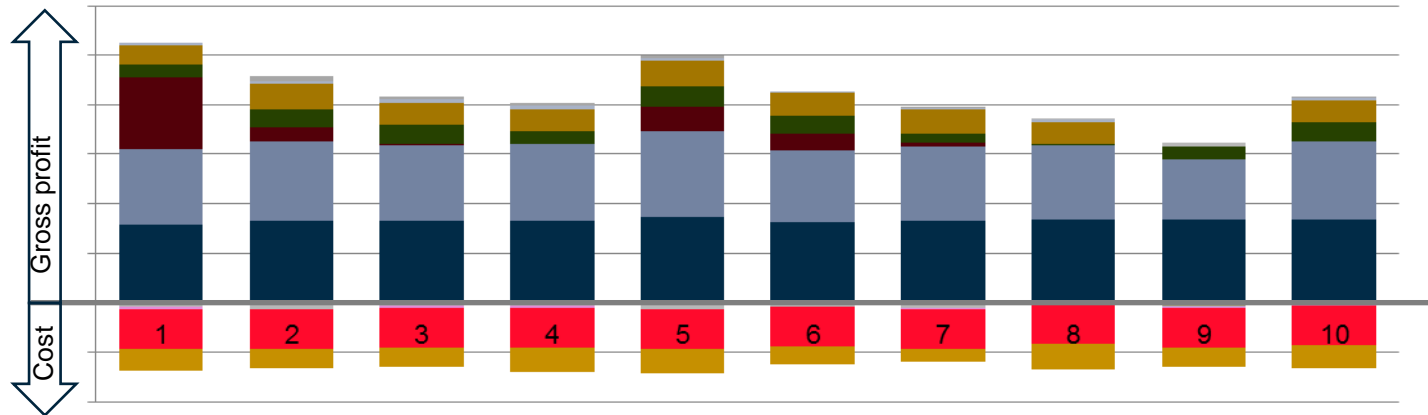


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Evaluation of concentrates based on valuables, impurities and production capacity

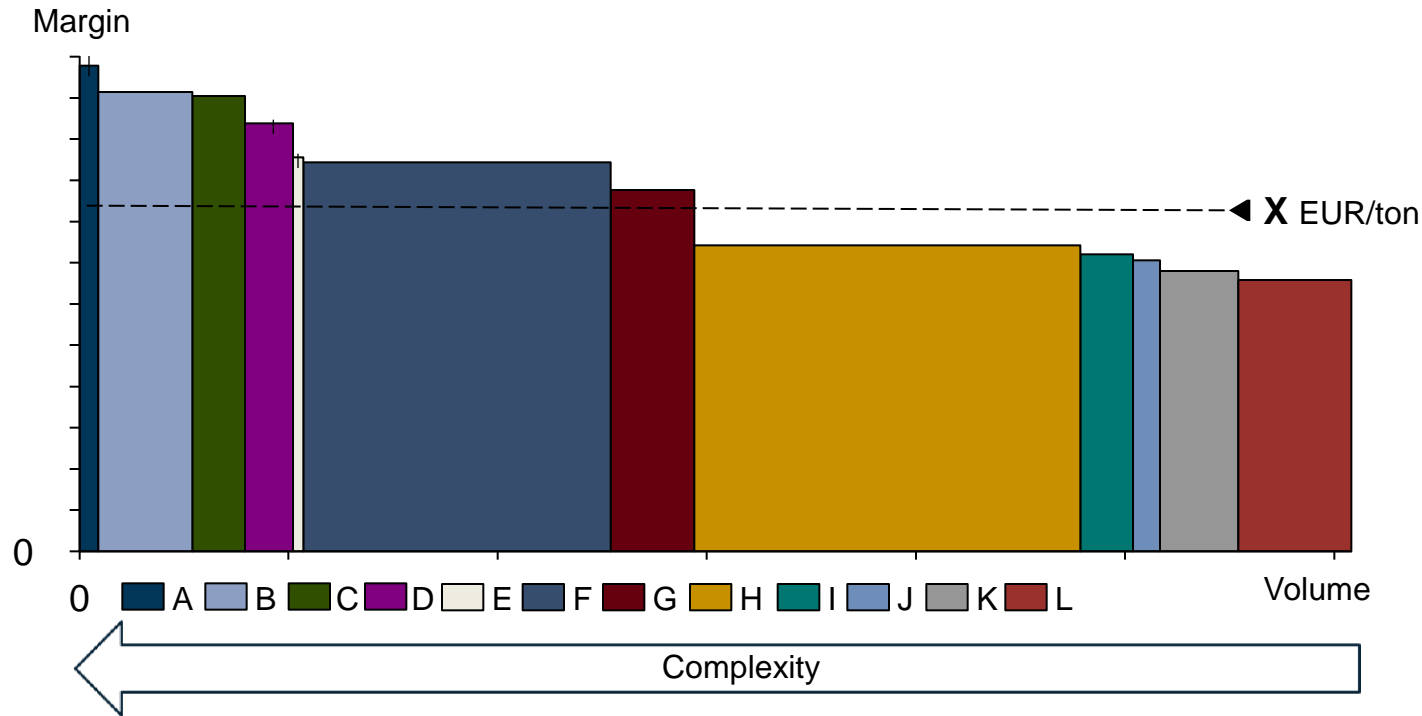


Gross profit and cost components, EUR/t



- Capability and capacity
 - Extract value
 - Manage impurities vs process balance and product quality
- Extra costs to treat the concentrate and handle waste
- Ranking the concentrates

Maximise profitability by optimising raw material mix



- Combining all boundary conditions
 - Technical capability and capacity on all elements
 - Production bottlenecks
 - Ranking value for each concentrate

Environmental permit Rönnskär



- New environmental permit June 2014
 - Allows increased production (350 ktonnes of copper)
 - Permit for deep deposit facility
- Investments of 1 bn SEK 2015-2018
 - Deep deposit
 - Water treatment plant
 - SO₂ reduction
 - Dioxin reduction
 - Warehouse for secondary raw materials

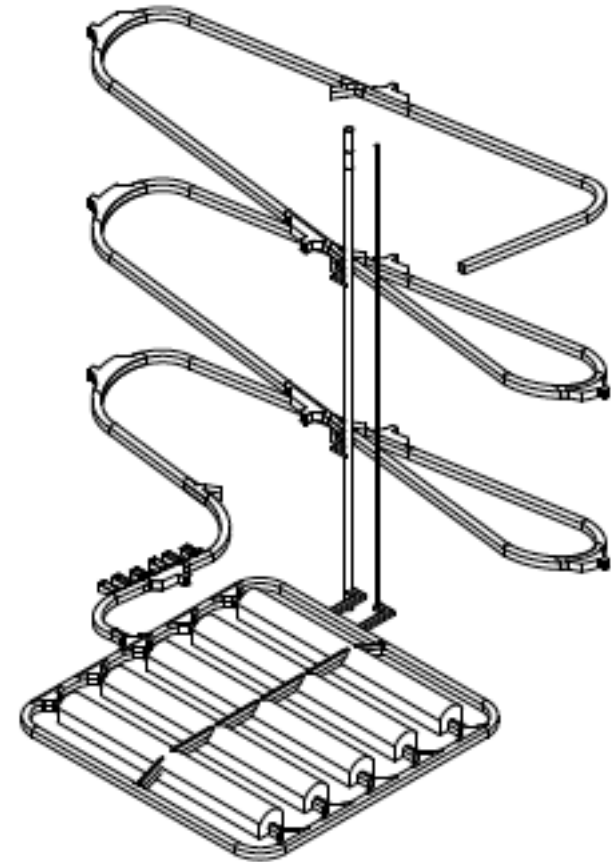


Rönnskär deep deposit enables higher flexibility

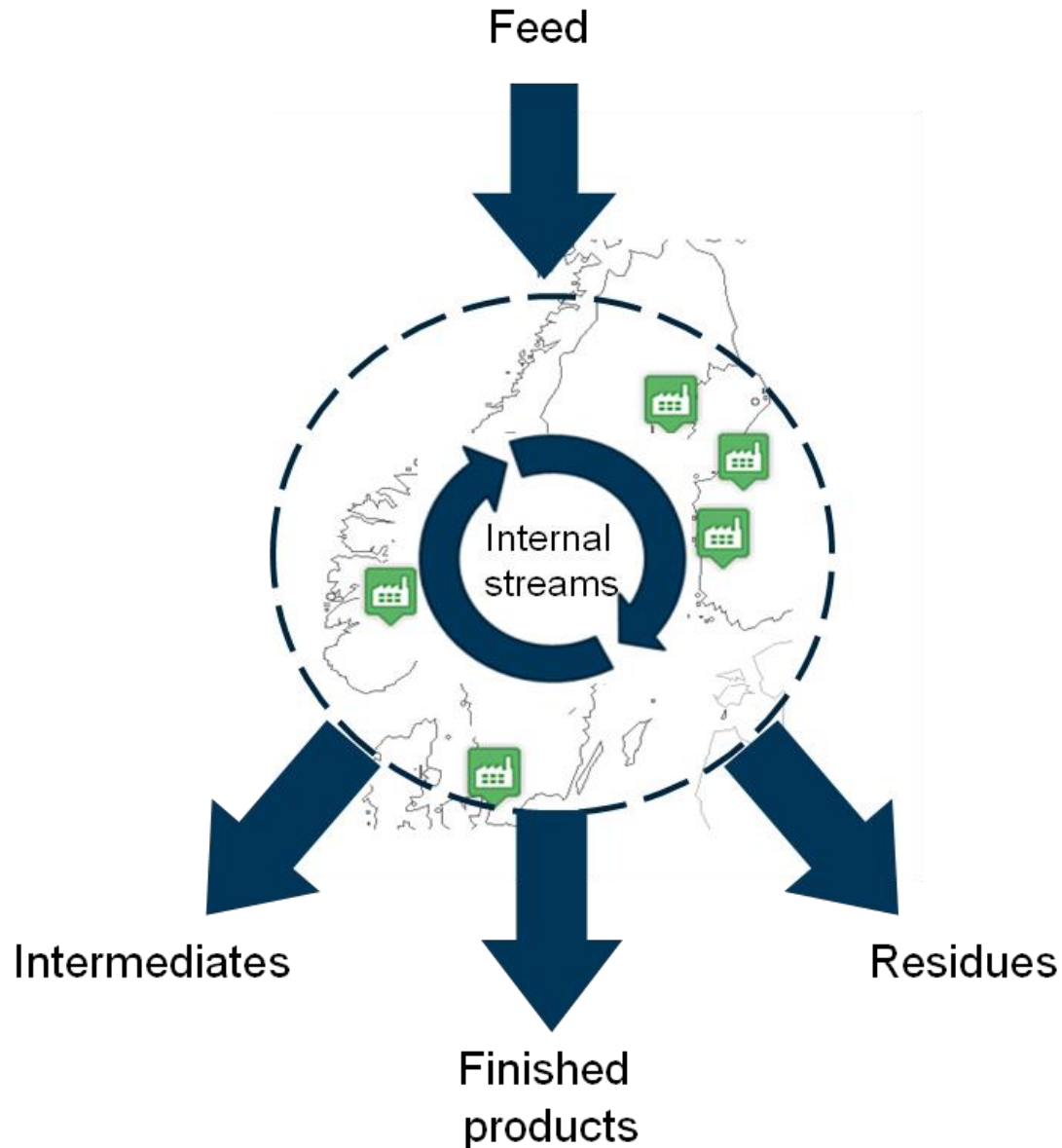


- Deep deposit
 - Construction of ramp to approx. 350m depth (3km)
 - Construction of repository (300,000 m³)
 - Chemical and physical stabilization of waste
- Added value
 - Increased flexibility
 - Waste does not limit future raw material mix
 - Sustainable option – control from raw material to final disposal
 - Minimizing risk
 - Expandable

Concept layout



Maximise Metal & By-product production



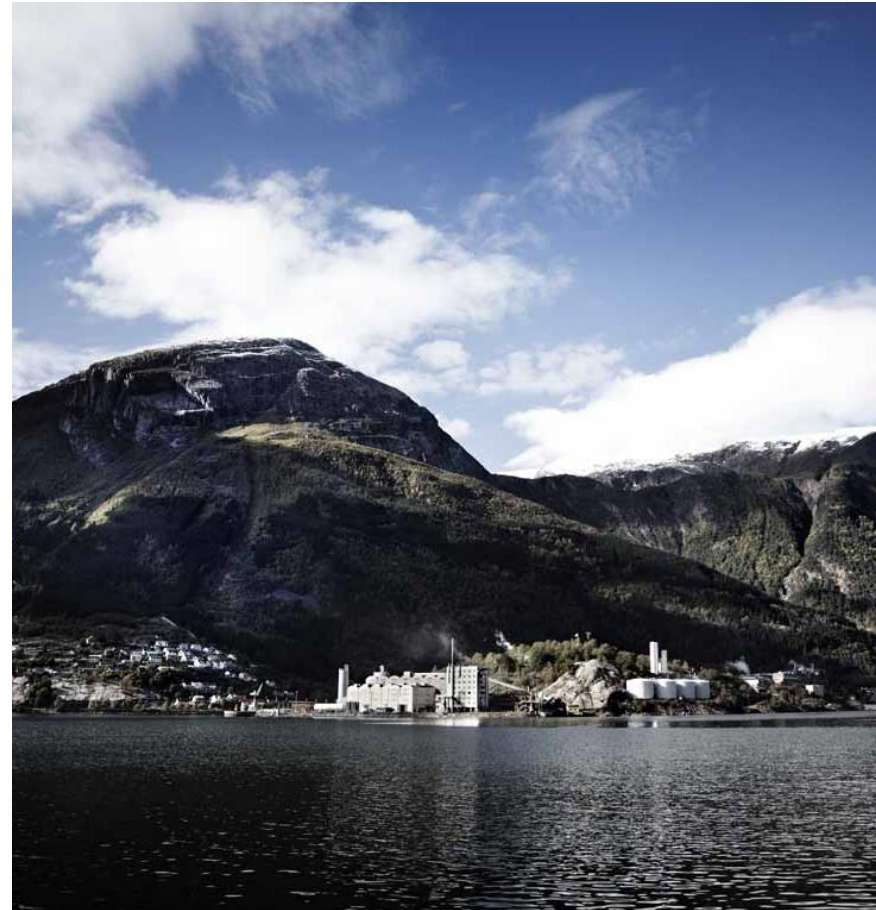
Increase metal recovery in Kokkola by extracting silver

- Investment of 27 MEUR
- Capability to recover silver concentrate
 - 25 ton silver annually
- Initial production in Q2
- Limited production Q3
 - Reactor damage in Hot Acid leaching
- Ramp up during November
- Capex and project on time



Zinc expansion in Odda – “P200”

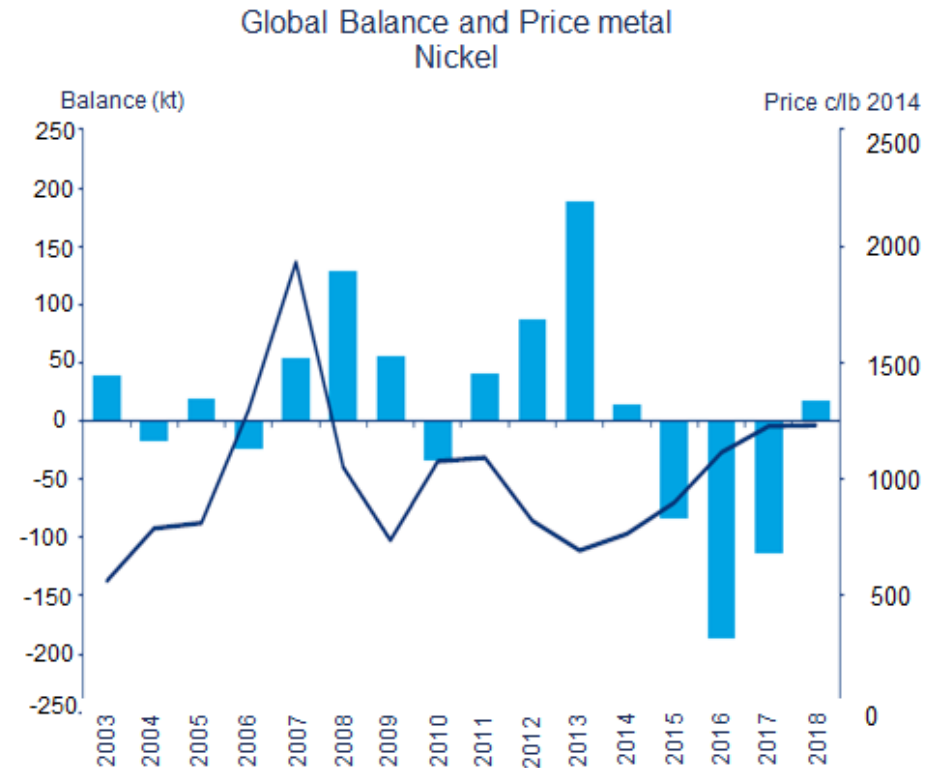
- Expansion to 200 kton zinc/year
- CAPEX 350 MNOK
- De-bottlenecking investments
 - Revamping and modernization of old cellhouse
 - New Direct Leach reactors
 - Revamping of leaching and purification
 - Other de-bottlenecking
- New capacity Q2 2017



Global nickel market



- Chinese stainless steel drives nickel demand
- Favourable markets
 - New mines opening
 - Smelting capacity closing
 - Indonesian export ban

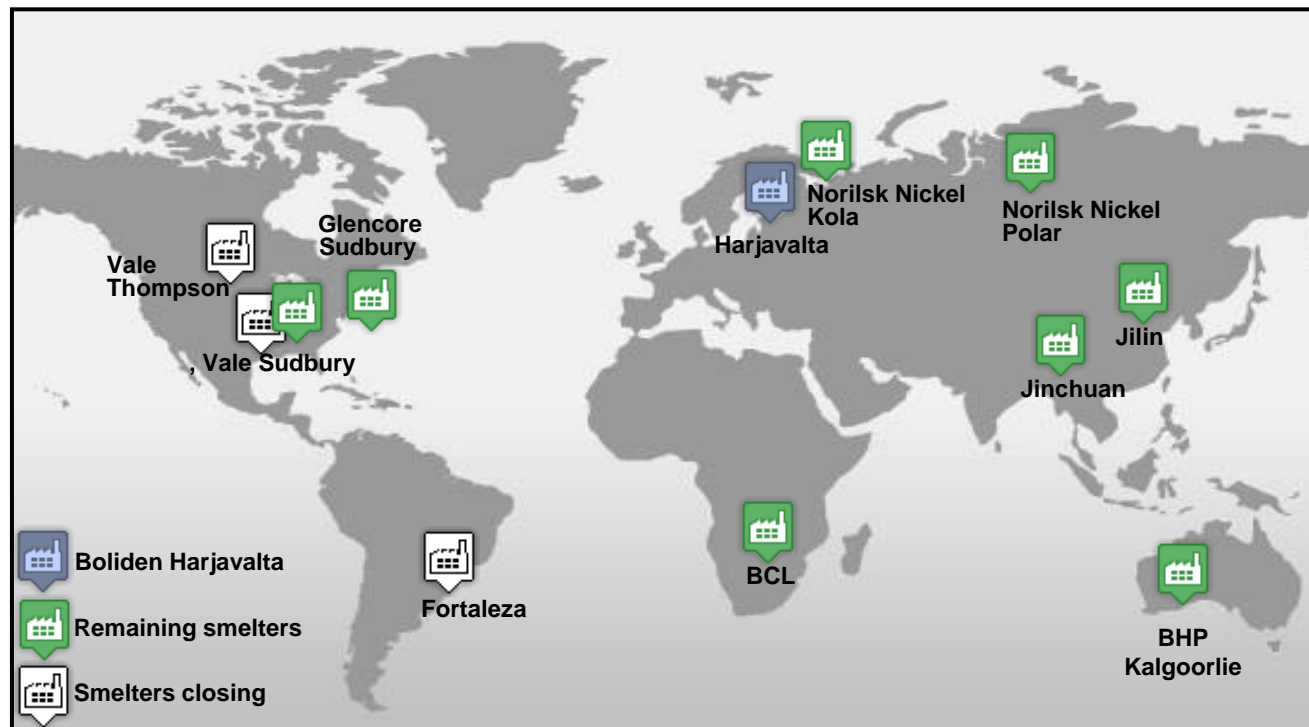


Source: WoodMac Global nickel outlook 2014

Boliden well positioned in nickel

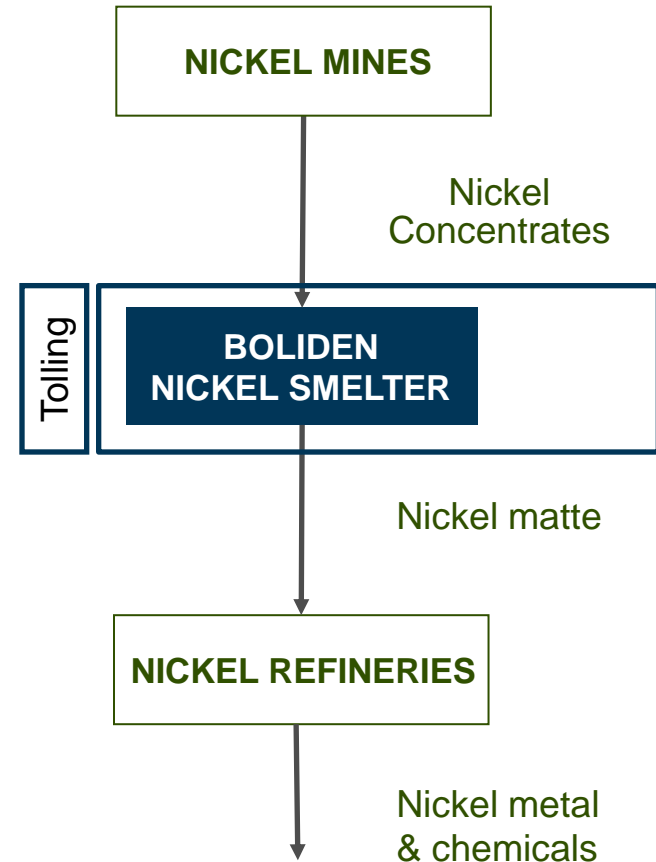


- The only nickel smelter in Western Europe
- Finland - a logical location for a long term nickel smelter
- Good logistics – located close to port
- Lowest sulfur dioxide emissions per ton nickel among all nickel smelters globally



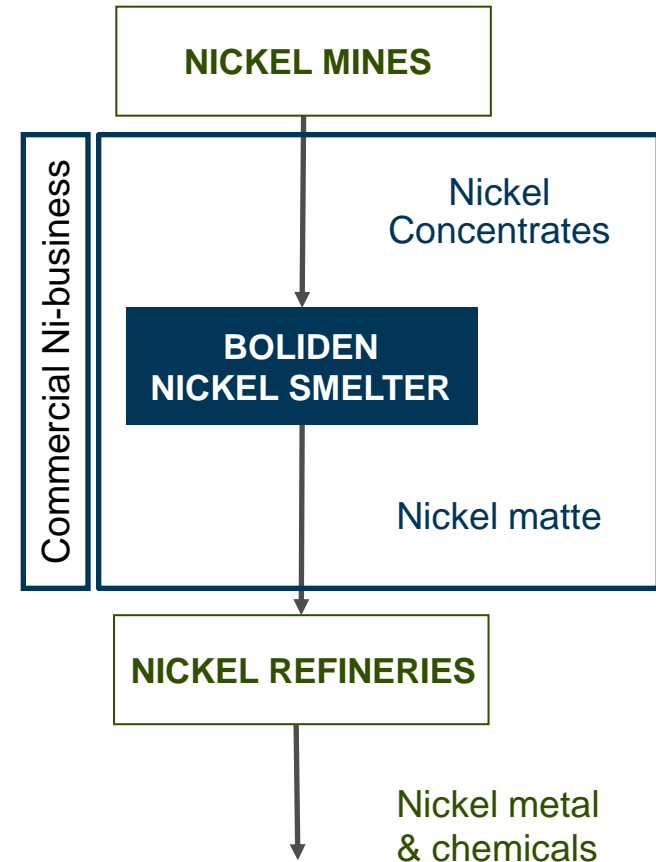
Boliden has long experience in nickel smelting

- Nickel operation in Harjavalta
 - Since 1956
 - First Flash Smelter to treat nickel concentrates
- Main product is “nickel matte” for nickel refineries
 - 25 kton nickel annually
- Tolling agreement, expires mid 2015
- Strong interest for Boliden matte

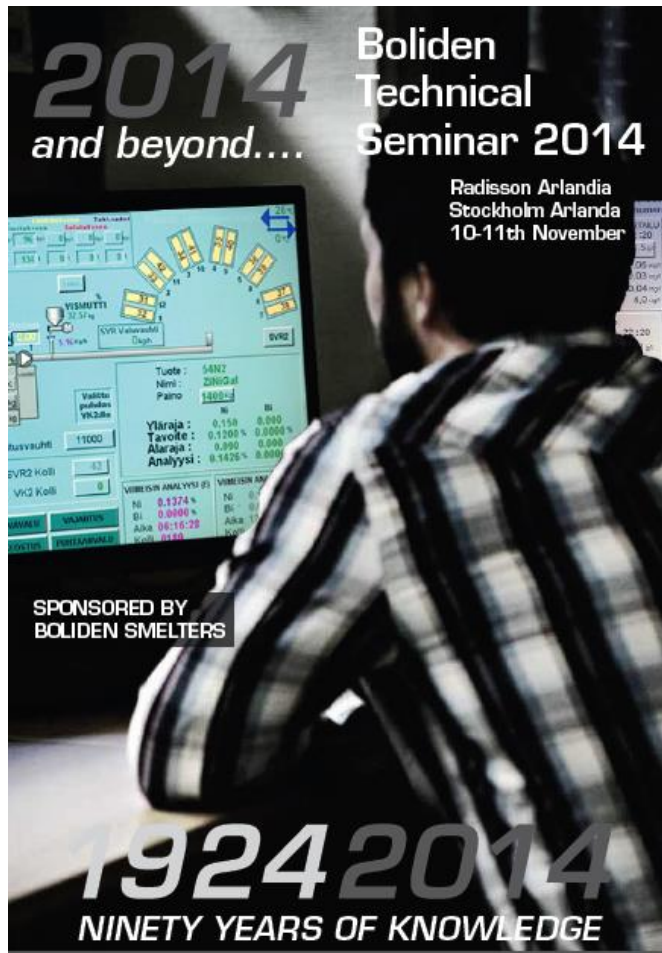


New business model for nickel

- New business model
 - Buy nickel concentrates
 - Sell matte
 - Long-term contracts
- Improve result
 - Treatment Charge
 - Free metals: Ni, Cu, Co, Pt/Pd, precious metals
- Increase Working Capital
- Increase profitability

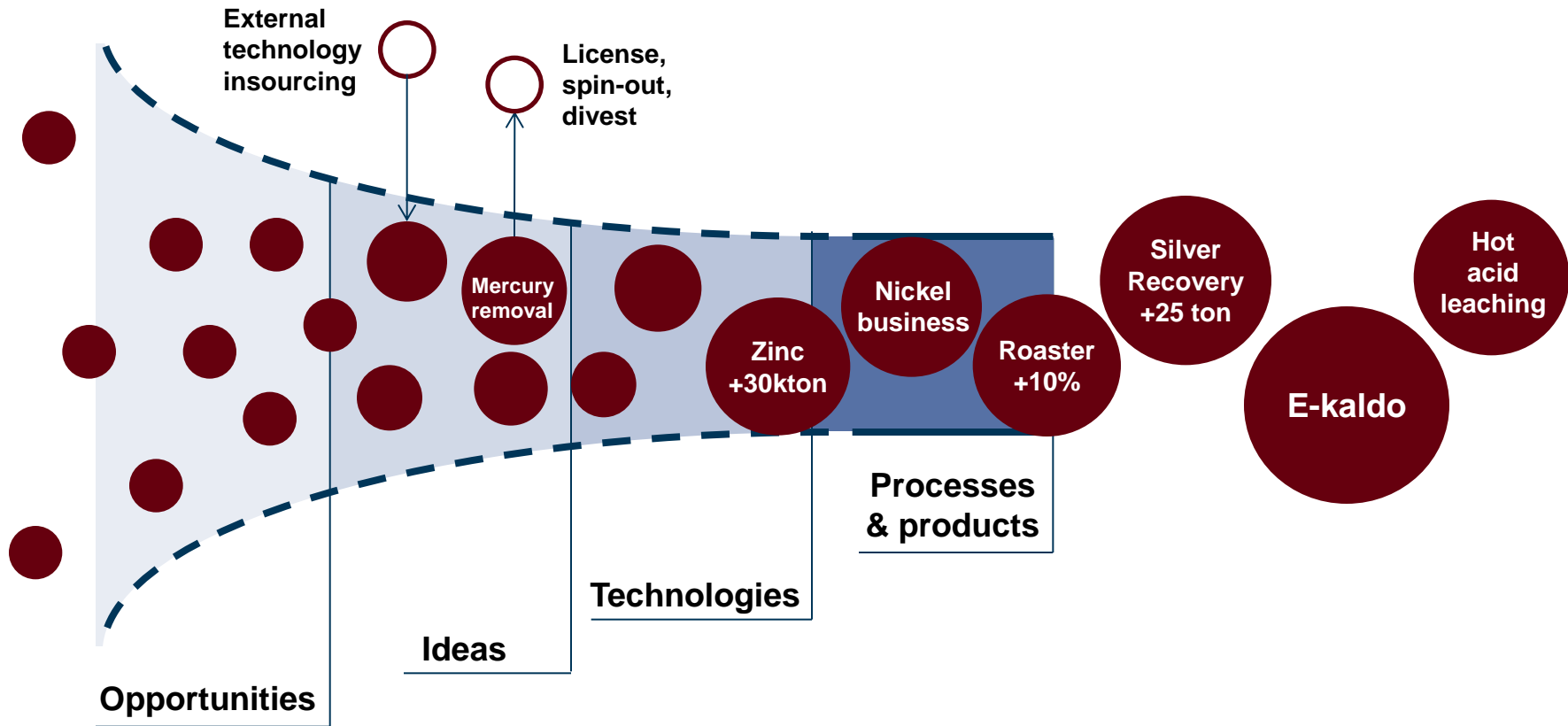


Expanding the project pipeline



- Resources
 - R&D organisation
 - External partners
 - Local project organisations
- Business innovation model

Business innovation model



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A person in a plaid shirt is seen from behind, looking at two computer monitors. The left monitor displays a network graph with red nodes and white lines, and the right monitor displays a network graph with blue and red nodes and white lines. The background is dark and appears to be an office or server room.

Capital Markets Day

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