



Boliden Harjavalta

Capital Markets Day
November 16 2022

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Be safe with us



Boliden Harjavalta

– One of the most efficient copper and nickel producers in the world



● PORI
● HARJAVALTA

NEW BOLIDEN



- Copper smelter, nickel smelter and sulphuric acid plants in Harjavalta and copper electrolysis in Pori, in south west Finland
- The energy-efficient technology developed at the smelter produces almost half of the world's copper
- The only nickel smelter in Western Europe
- Concentrates from Boliden Kevitsa and external mines

Boliden Harjavalta

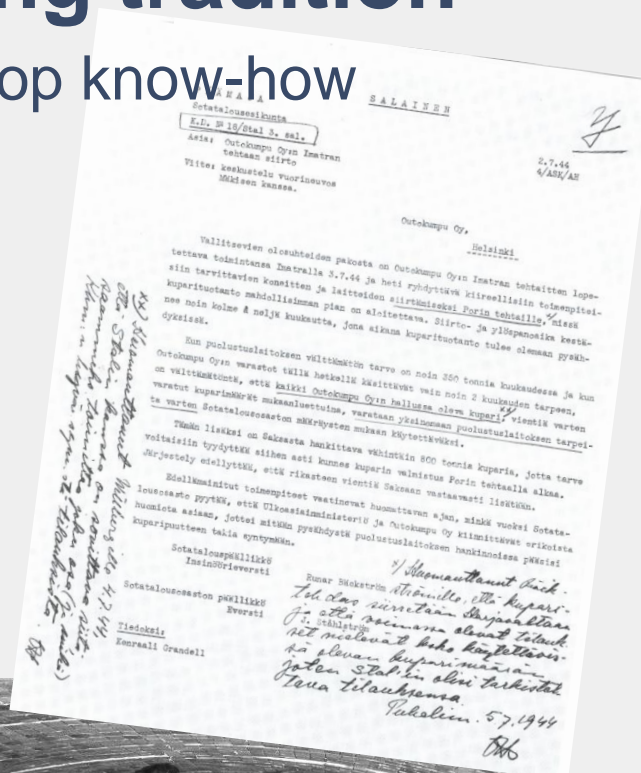
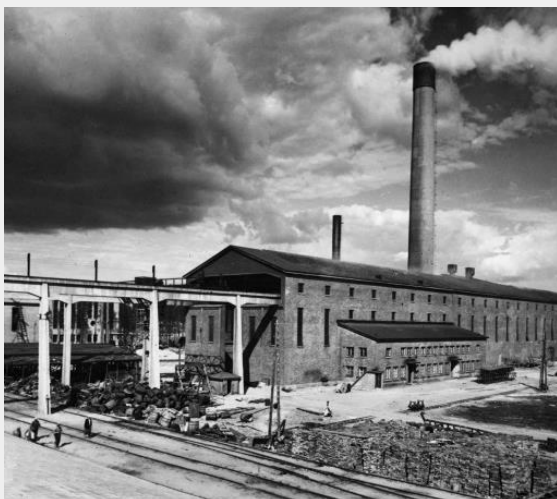
One of the most efficient copper and nickel producers in the world

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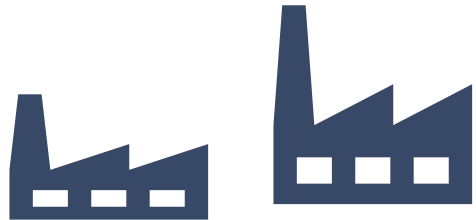
A smelter with long tradition

– The base for today's top know-how



- 1910 Discovery of Outokumpu ore body
- 1913 Commissioning of the mine
- 1914 Copper plant in Outokumpu (Hybinetteprocess)
- 1936 **Copper smelter in Imatra (electric smelting furnace) Liquid-SO2-plant**
- 1941 Copper refinery started in Pori
- 1945 **Copper smelter relocated from Imatra to Harjavalta First copper smelt in Harjavalta**
- 1947 Sulphuric acid plant started in Harjavalta (SAP1)
- 1949 **Copper flash smelting commissioned**
- 1959 **Nickel flash smelting commissioned**
- 1966 Froth flotation of copper smelter slag, slag cooling in ground pits
- 1971 1st oxygen plant started
- 1974 **Automated anode casting commissioned**
- 1984 Controlled slow cooling of copper slag in ladles
- 1987 Ownership of sulphuric acid plants from Kemira to Outokumpu
- 1990 Incorporation of Outokumpu's units
- 1995 Expansion of both copper and nickel production including **high grade nickel matte production in single stage**, steam dryers and **LIW-feeder installed for copper line**
- 1999 Partnership network formed
- 2004 **Business transaction Outokumpu => Boliden**
- 2007 Expansion of copper production: new steam dryer, new PS-converter
- 2013 Rebuild of copper flash smelting furnace
- 2014 Rebuild of nickel electric slag cleaning furnace
- 2015 New nickel business strategy
- 2017 Rebuild of nickel flash smelting furnace
- 2019 **New sulphuric acid plant implemented**
- 2020 Expansion of cathode copper production
- 2020 New laboratory
- 2021 **Expansion of nickel production**

*) Metallurgical world premier



One of the most efficient **copper** and **nickel** producers in the world

Production capacities

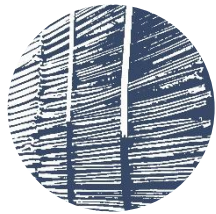
620 000 tonnes of copper concentrates processed

370 000 tonnes of nickel concentrates processed

=> 1 million tonnes of concentrates annually

90 %
of production
is exported

In operation
24/7
All year round



Major customers within the **electronics, electro-technology and automotive** industries



personnel
550

Average age **43**



84% 16%



100

Summer employees



Safety is our priority



Turnover
320 MEUR

Production value
2.100 MEUR

Operating profit
102 MEUR

Investments
68 MEUR

Purchases
110 MEUR

Corporate Income Taxes
12 MEUR

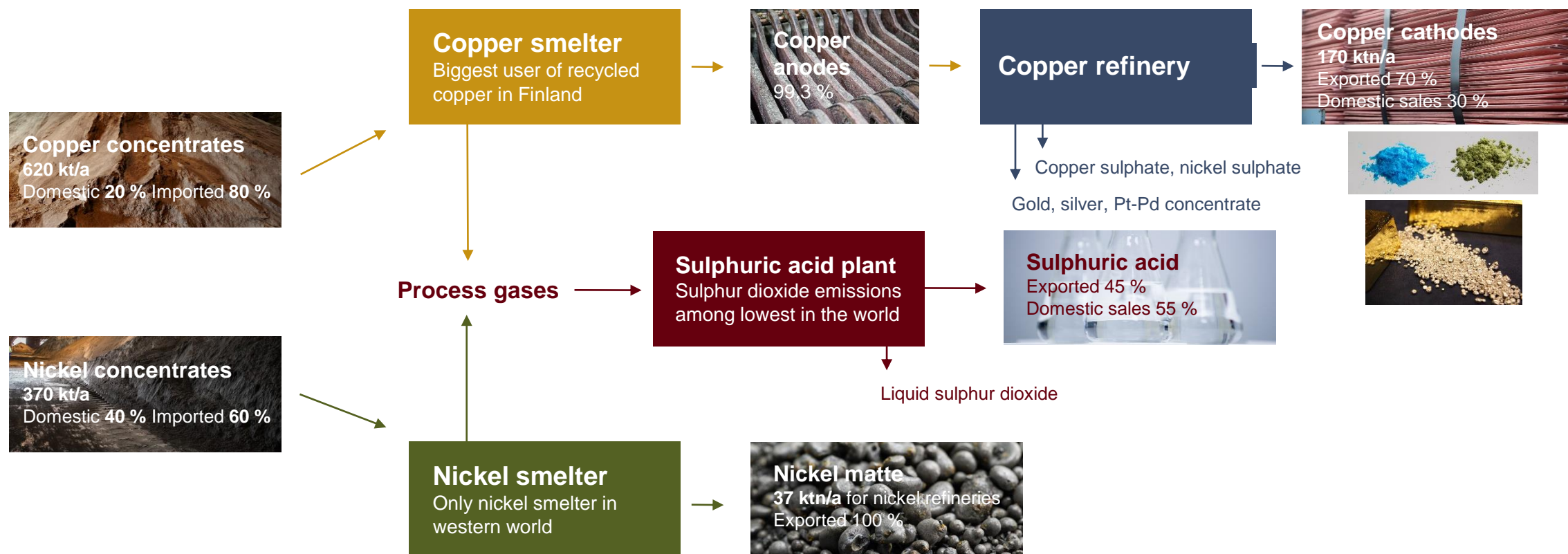


Environmental performance and energy efficiency world-class in the field

We invest strongly in environmental efficiency and in the stability and growth of our productions

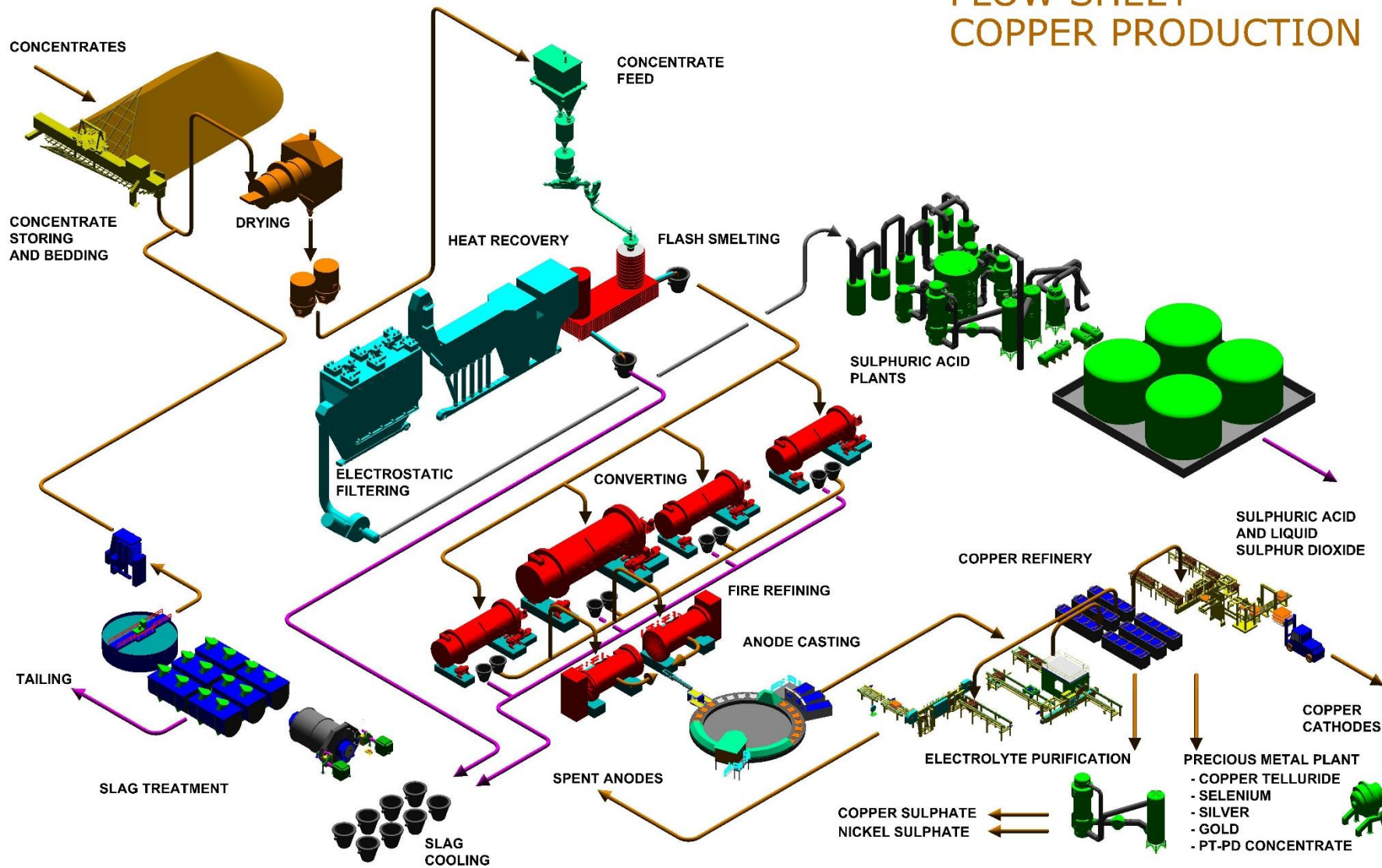


From complex raw material into high-quality metal

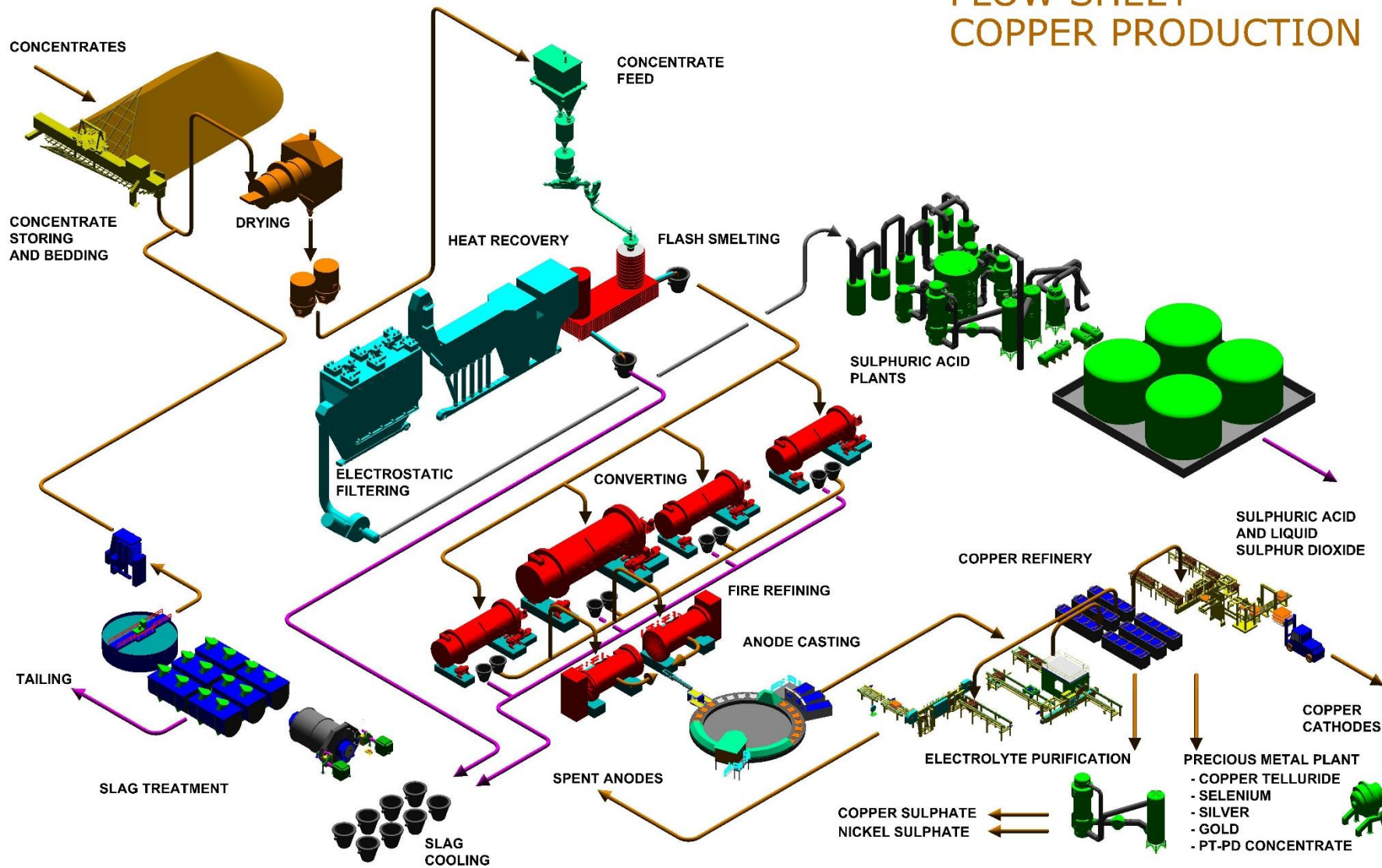


Boliden Harjavalta's value chain

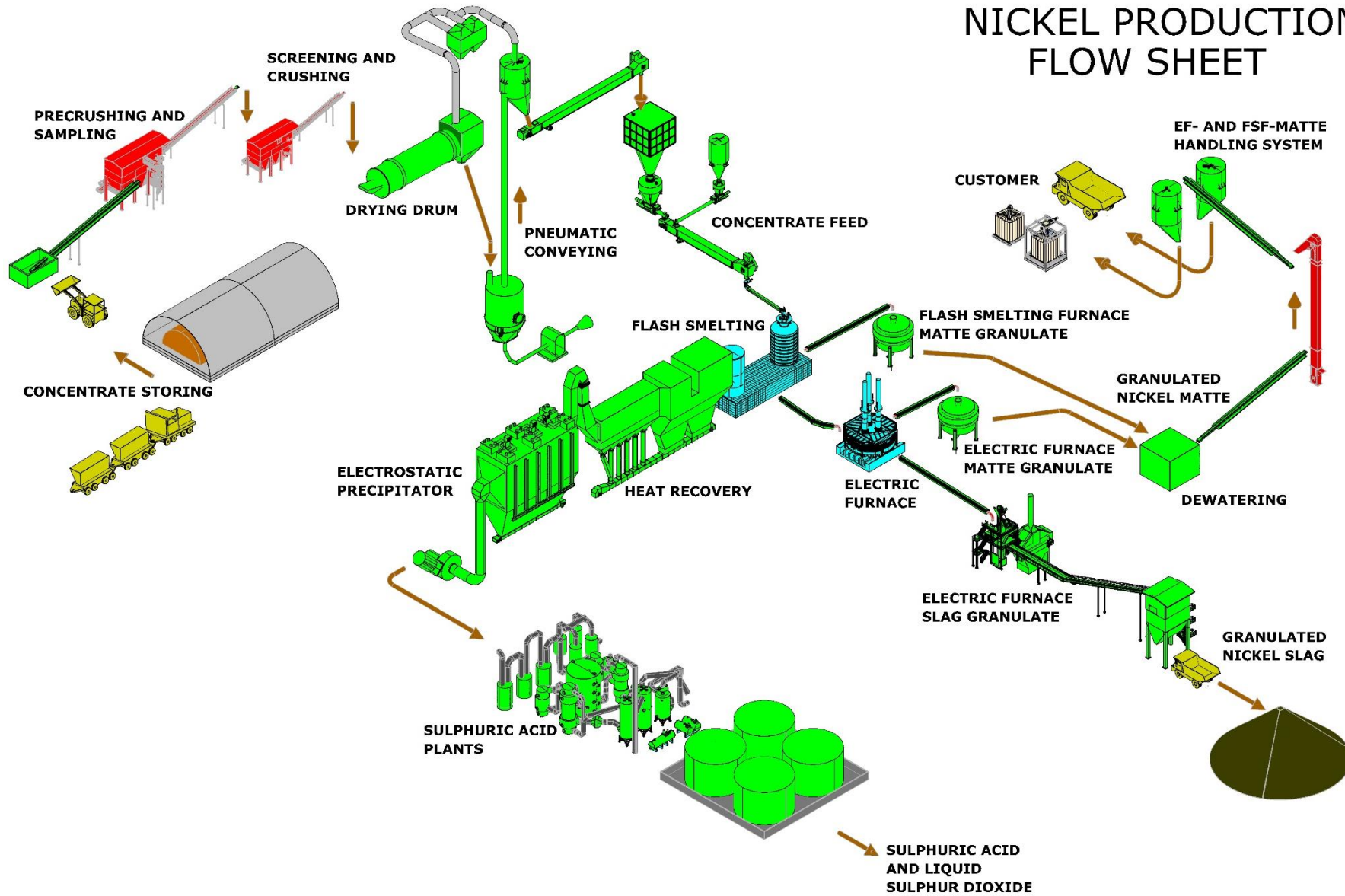
FLOW SHEET COPPER PRODUCTION



FLOW SHEET COPPER PRODUCTION



NICKEL PRODUCTION FLOW SHEET



Strong investments in expansions and environmental performance

In 2015–2021: Combined **EBIT 605 MEUR** | Combined **CAPEX 427 MEUR**

Construction of safe landfill solutions for process slag, **25 MEUR**



Weighing & sampling facility and new warehouse at the port of Pori 2023, **40 MEUR**



New acid plant 2019, **90 MEUR**



Nickel line expansion 2021, **40 MEUR**



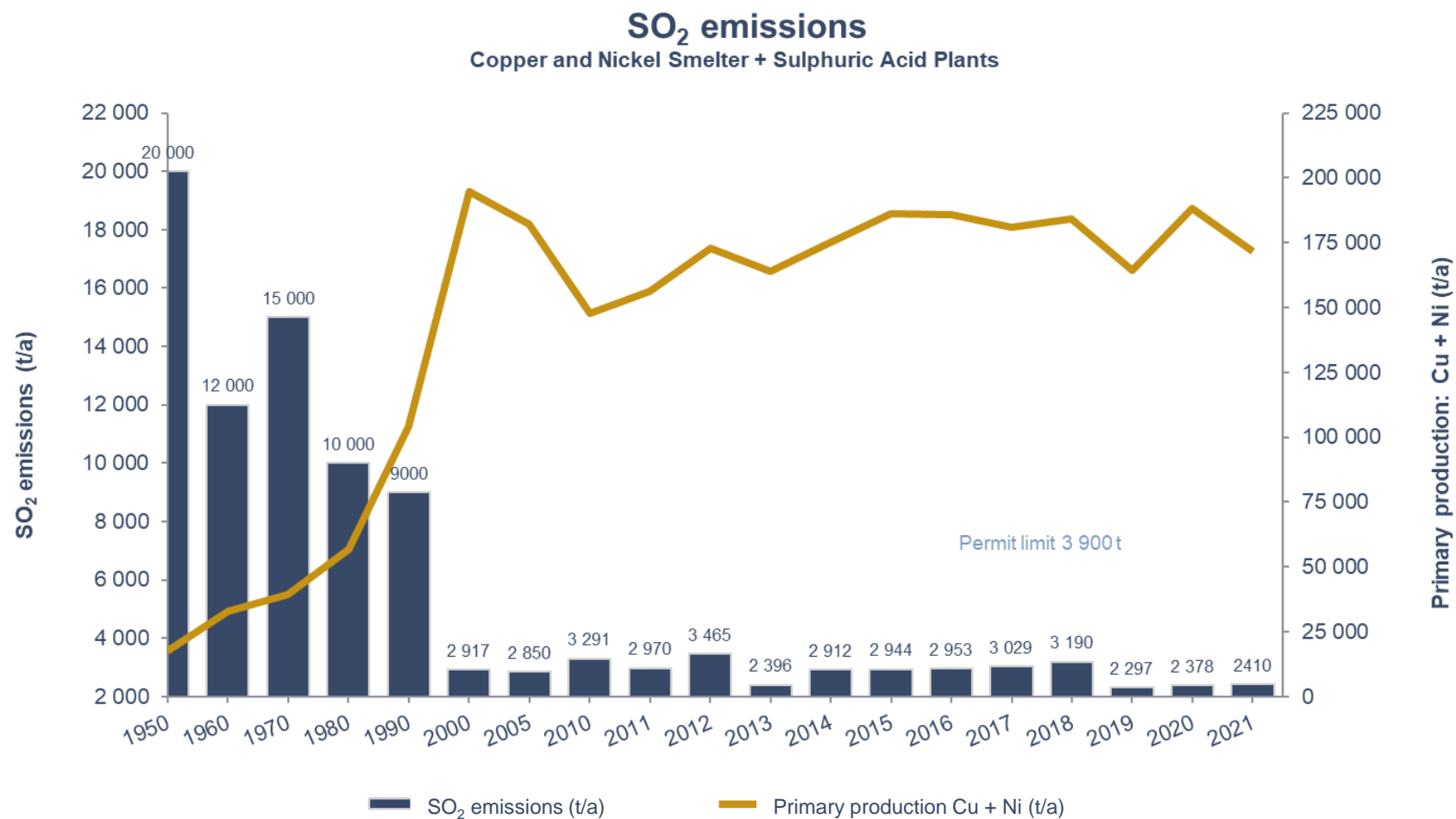
Copper line expansion 2019;
Smelter in Harjavalta **30 MEUR**
Refinery in Pori, **15 MEUR**



New laboratory 2020, **9 MEUR**

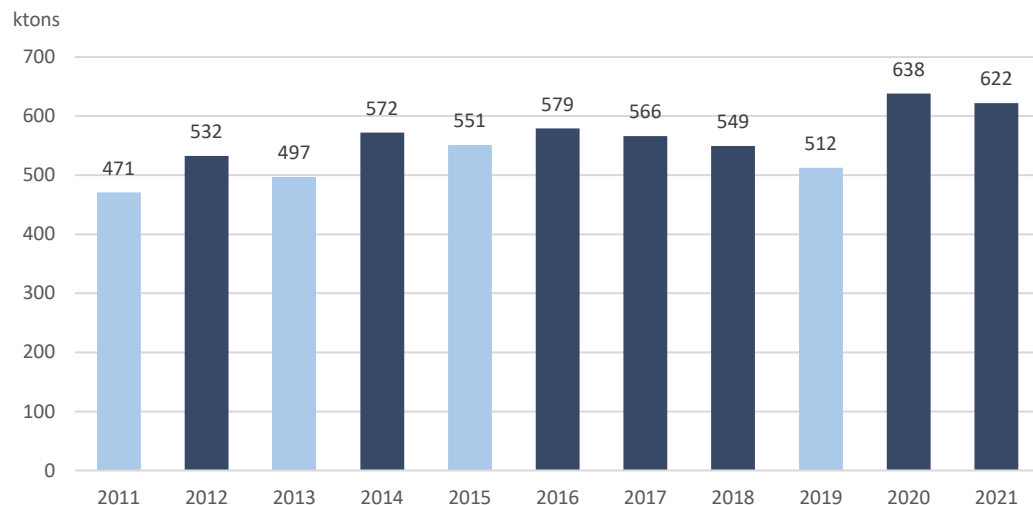


Sulphur dioxide emissions – development

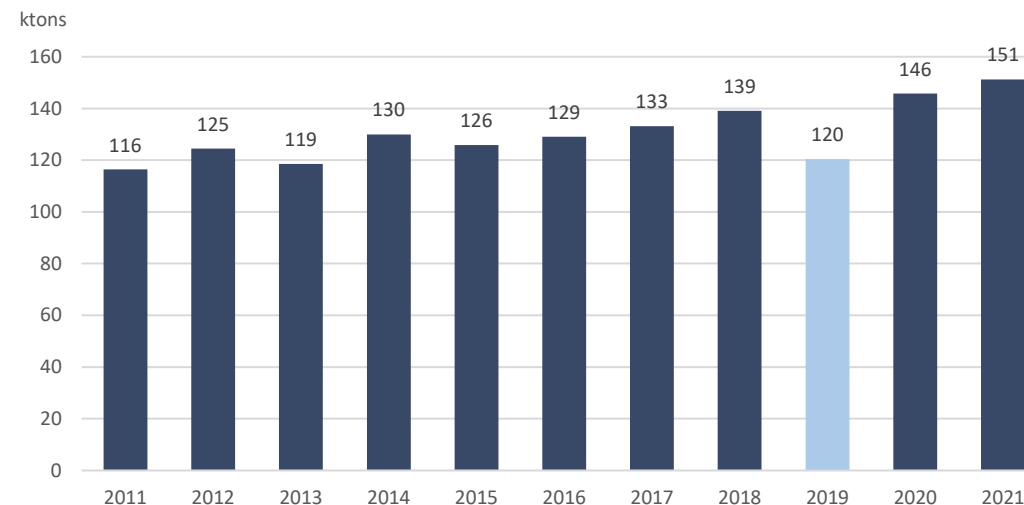


Copper raw material feed and cathode production

Total Cu feed



Cu cathode production

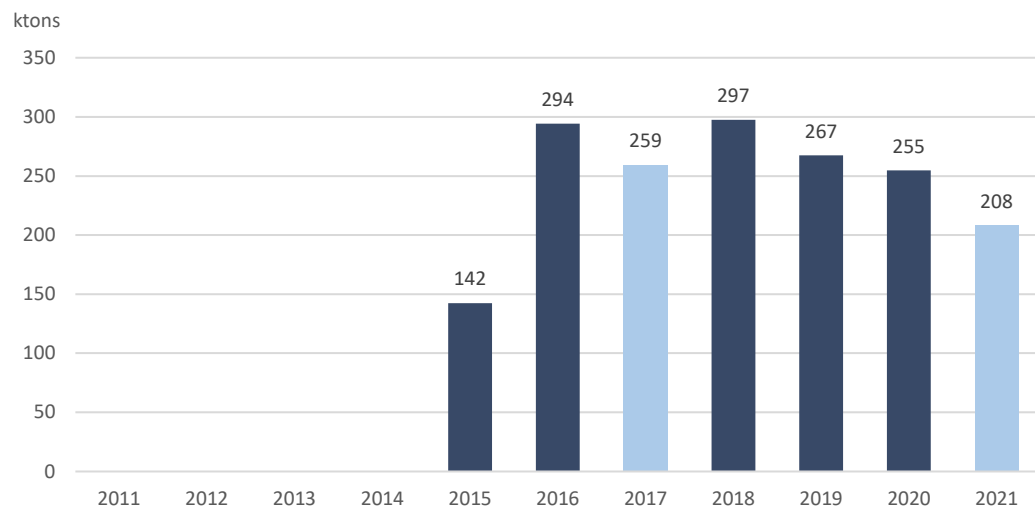


- Long annual overhauls in 2011, 2013, 2015 and 2019
- Smelter expansion in 2019

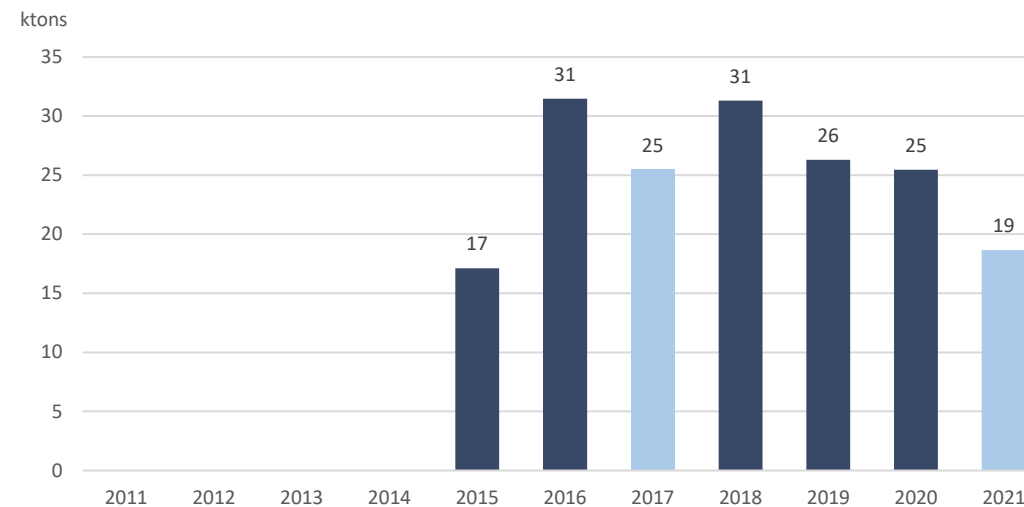
- Refinery capacity expansion in 2019

Nickel raw material feed and nickel matte production (Ni content)

Total Ni feed



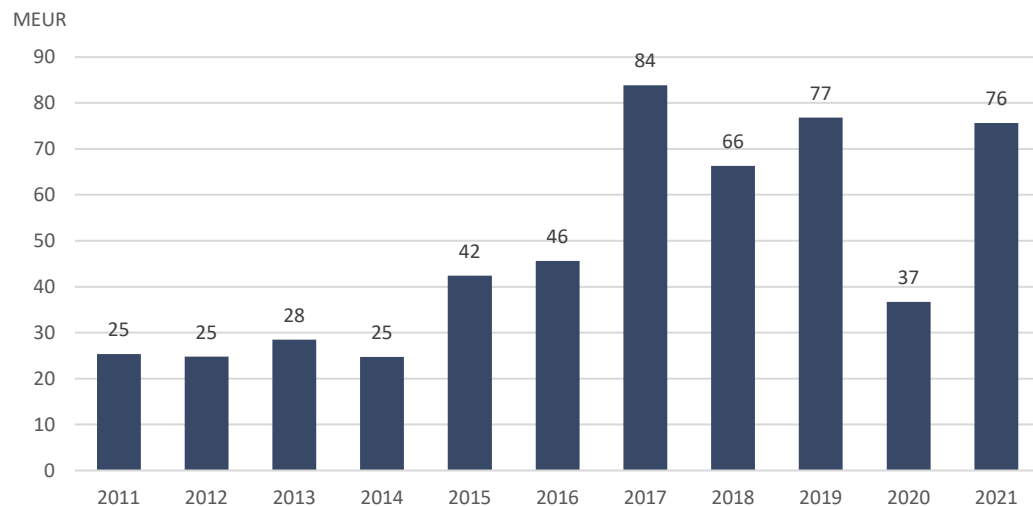
Ni matte production (Ni content)



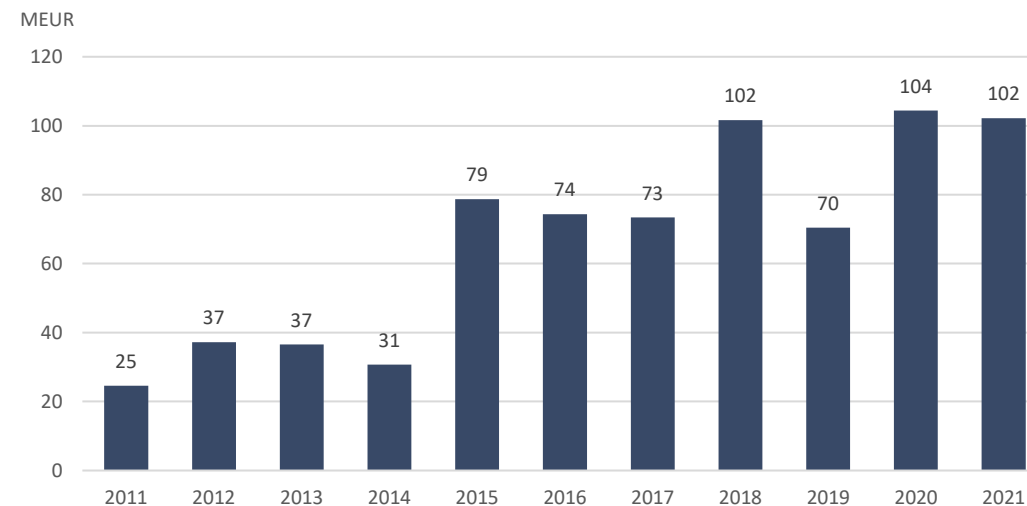
- Long annual overhauls in 2017 and 2021
- Melt leakage in slag cleaning furnace in 2019
- Raw material quality issues in 2020
- Smelter expansions in 2017 and in 2021

Capital expenditures and EBIT excl PIR

Capital Expenditures



EBIT excl PIR



- Smelter expansions in 2017 (Ni), 2019 (Cu) and 2021 (Ni)

- New business model in nickel 2015



Welcome to site visit!

Instructions for Your Safety



Safety is number one priority
 – *follow the instructions!*



- Our values include **care**. We take care of our own and others' health and well-being
- It is very important to us that our guests feel safe and that the site visit goes safely
- To ensure all this, it is of the utmost importance to **follow the following safety instructions**

Notes before visiting the site



- You cannot enter the production facilities during the site visit if you
 - have a pacemaker
 - have a respiratory disease (asthma)
 - have a nickel allergy
 - are pregnant

You can however participate in the tour outside production facilities (e.g. bus tour)

- Also note that **intoxicating substances** or being under the influence of such substance is not allowed in the area

Protective equipment



- Wear protective equipment:
 - Protective clothing (jacket and trousers)
 - Reflective vest
 - Helmet
 - Goggles
 - Gloves
 - Shoes
 - Respirator

- Follow your guide's instructions on how to use a respirator

Particular safety risks

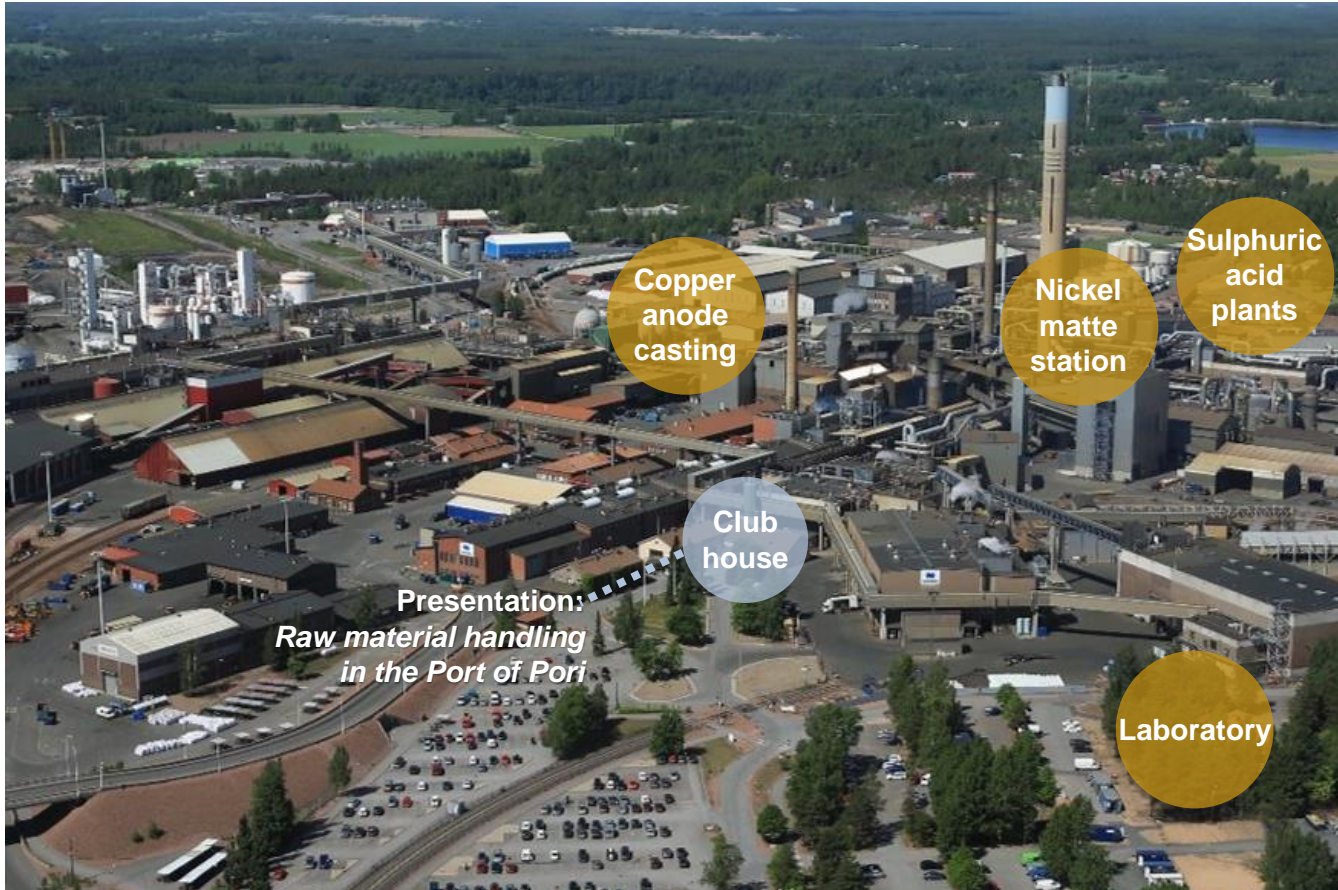


- **Chemicals** causing the risk of a major accident are handled in the area
 - *Keep the respirator close to you*

- **Concentrate dust** contains carcinogenic substances
 - *Use the protective equipment given to you and take care of adequate hygiene*

- There is **heavy vehicle and rail traffic** in the area
 - *Wear a reflective vest and walk in a group*

On the site tour



- **Follow your guide's instructions** on the tour and stay with your group
- **In case of alarm** – follow your guide's instructions and go to the nearest shelter
- Keep your **visitor card** visible
- **Photography** is prohibited in the area
- **Smoking** is allowed only in designated areas

Be safe and enjoy your visit! 👍

Te Pb
Co Ag
Ni
Zn
Cu

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