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## Boliden Mines

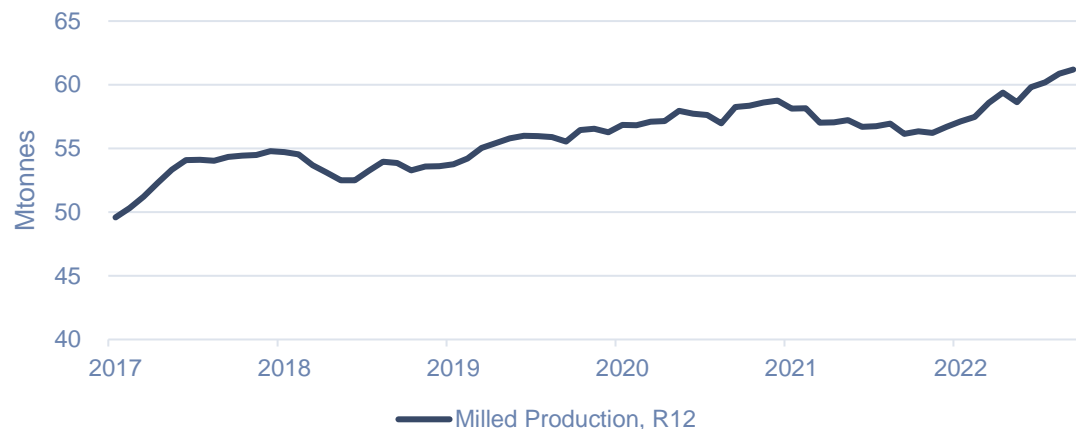
Focus on continuing production stability and extension opportunities

Stefan Romedahl, President Boliden Mines

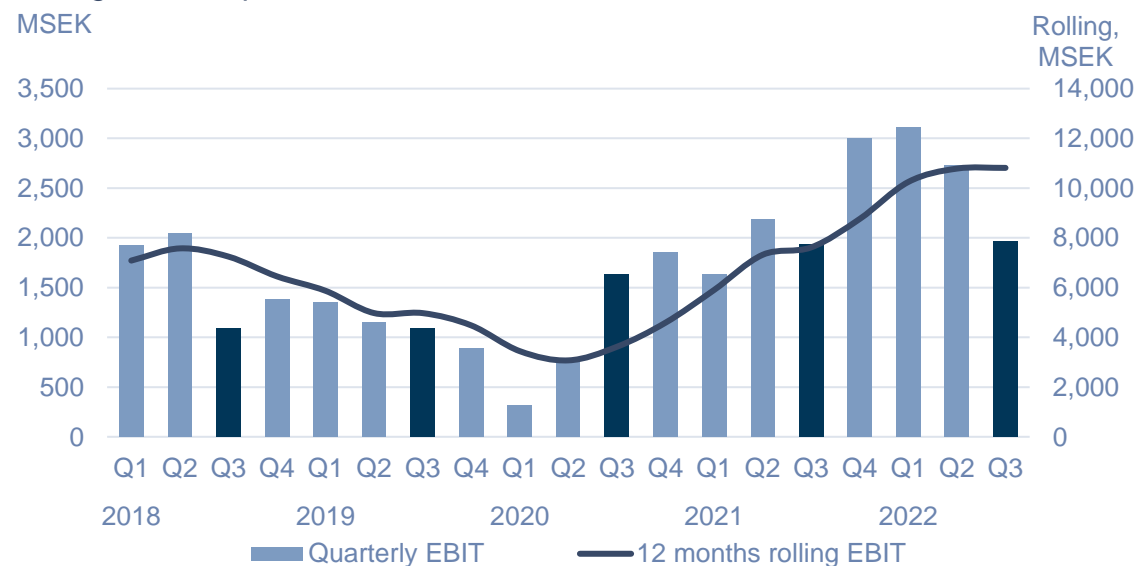
**CMD 2022**

# Key highlights since CMD 2021

Stable production from all mines, rolling 12 months



Strong financial performance



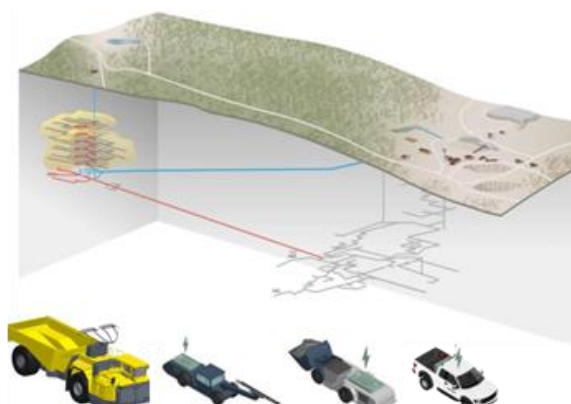
- Delivering on expansions
  - Aitik 45 Mt pace: reached Q4 2021
  - Kevitsa 9.5 Mt pace: surpassed Q4 2021
  - Garpenberg 3 Mt pace: since 2020
  
- Kylylahti
  - Reclamation work at mine completed
  - Final exploration targets tested
  
- Implementation of Global Industry Standard for Tailing Management (GISTM)

# Achieving the new Science Based Targets for CO<sub>2</sub>

Electric Trolley



Fossil free mining in Kristineberg expansion



Battery truck



Electric transport on public road

- On track to reach the new 2030 target
  - Significant effects seen from 2025
- Good progress on electrification
  - Underground and on public roads
- Increased use of electric trollies in open pits
- Focus on future battery trucks in open pits
  - Supplier dependent
- Test of low CO<sub>2</sub> explosives
  - Nitrate free

# Productivity improvements

- Garpenberg 3.3 Mtpa in 2023
- Stabilizing Kevitsa 10.0 Mtpa pace
- Implementation of Autonomous Haulage System (AHS) in Aitik
- Positioning system for mixed underground traffic
- Robot charger



# Robot charger - Improving productivity, safety and quality

- Project is gaining momentum
  - Other mining companies have joined the project
- Prototype 3.0 under production
  - To be delivered December 2022
- Next test
  - Garpenberg, February 2023

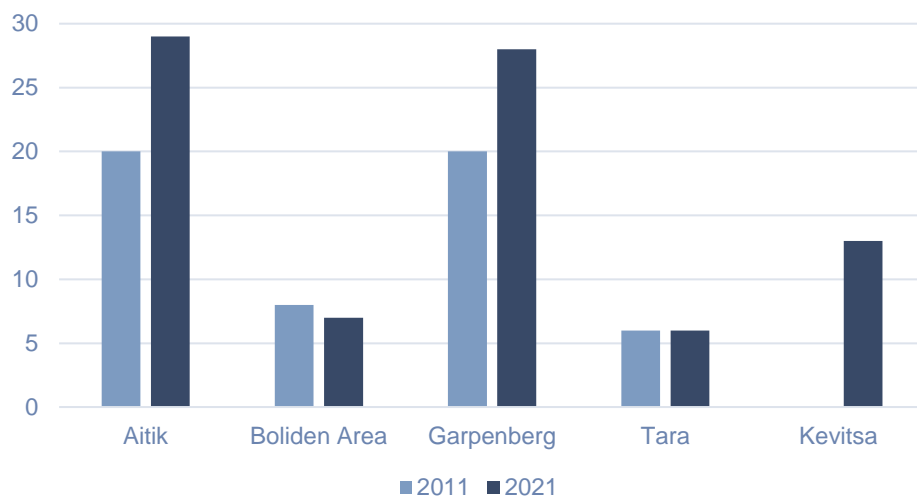


# Successful exploration

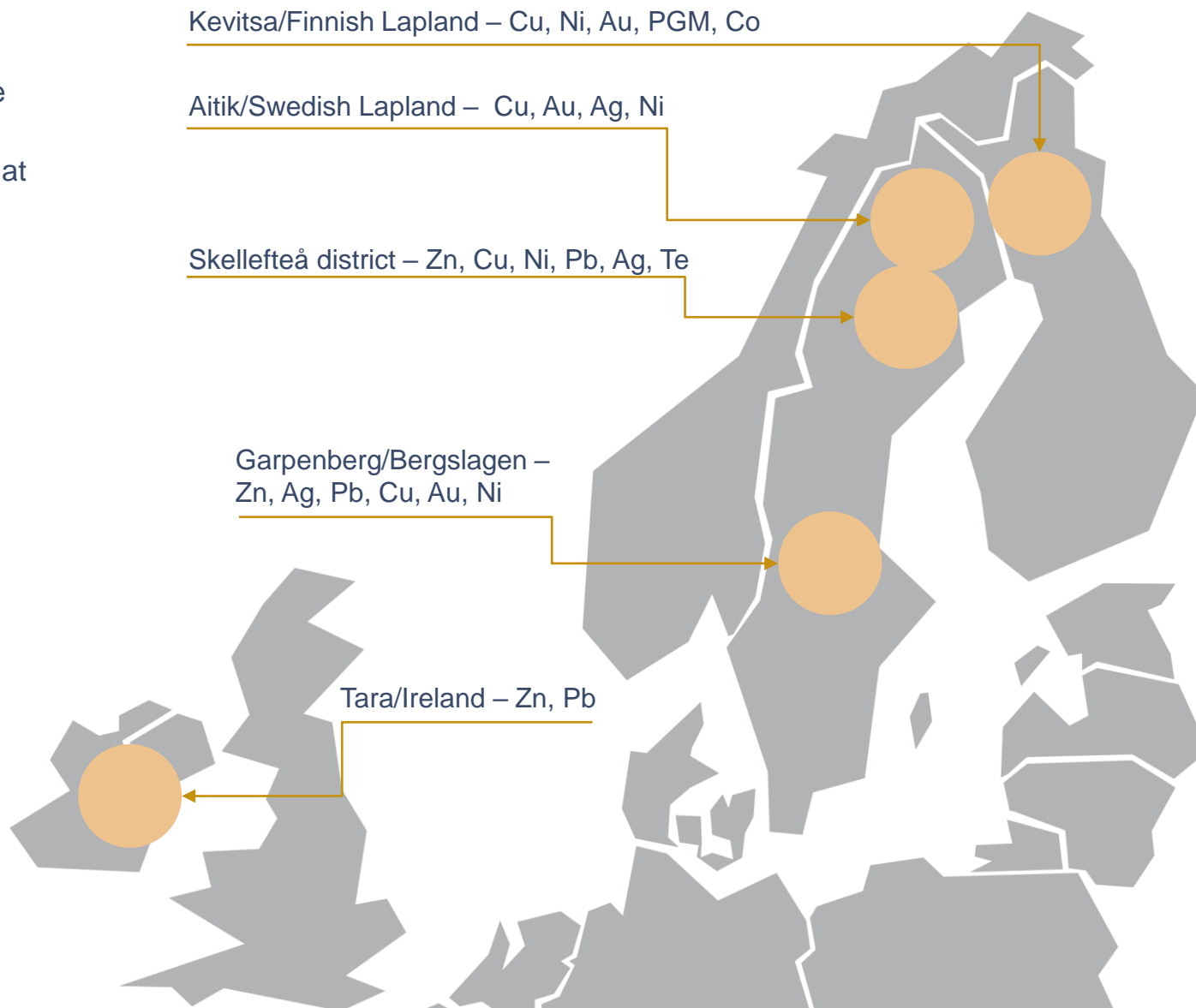
## Status

- Successful exploration in the Kristineberg expansion in the Boliden Area
- Accelerated exploration in Garpenberg to unlock potential at depth
- Good opportunity to extend the Nautanen resource
- Increased Ni exploration in 2023
- Exploration and scoping study ongoing in Strömfors in the Boliden Area
- Conclusion of exploration in the Kylylahti area

## Reserve life (years)\*



\*2011 and 2021 year end reserves divided by designed full production



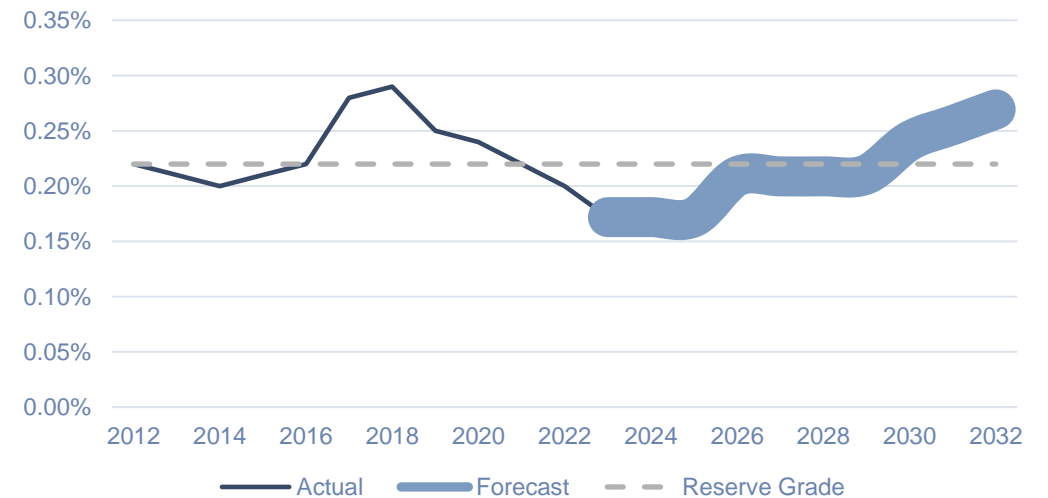
Aitik open pit



# Aitik

- Low grade period
  - Lower grade than reserve average for several years
- Dam investment 2022-2024
  - Strengthening the current dam construction
- Nautanen
  - Mining concession filed Q2 2022
- Implementation of AHS 2023
- Change of existing permit 2023
- Increased stripping from 2024
- Liikavaara
  - Start of operation 2024
- Main permit renewal 2026
  - Change of dam raising methodology

Aitik Cu grade

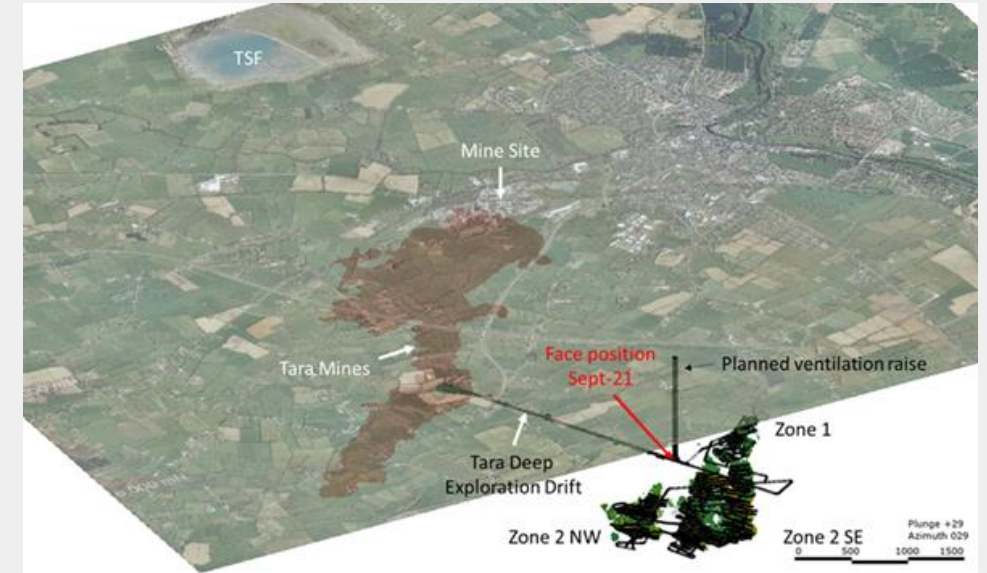


# Extending Tara

## Tara Deep update

- Inferred Mineral Resource 27 Mtonnes, 8.4% Zn, 1.6% Pb
- One year delay in underground exploration and exploration drift due to flooding
- Extensive project development program
  - Exploration activities (surface ongoing, underground restarting from Q4 2022)
  - 3D seismic
  - Pre-feasibility study

Aerial view of Tara including Tara Deep



Tara Deep surface ventilation site





# Extending Boliden Area

## Kristineberg extension

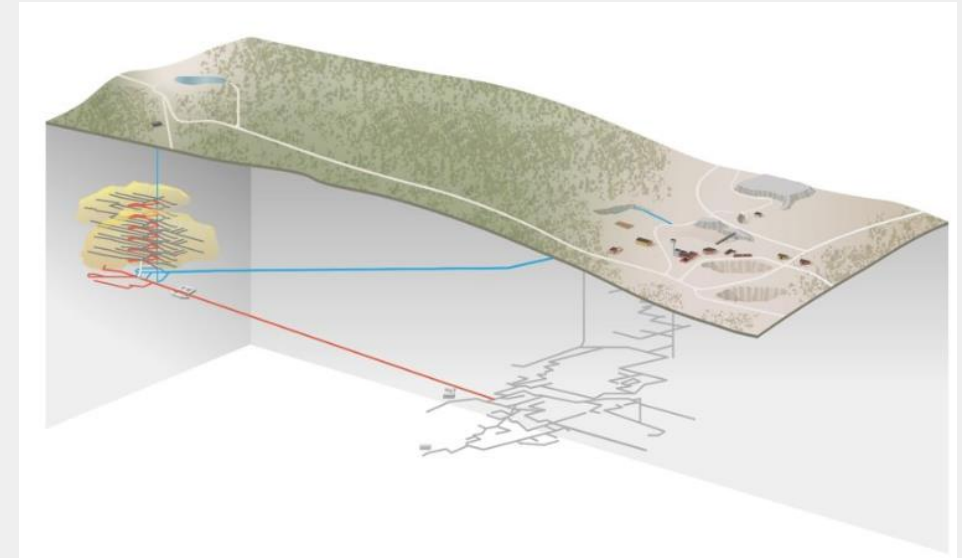
- Environmental permit granted in July 2022
- First ore production in 2023
  - Initial production via existing Kristineberg infrastructure
- Fossil free production under development
  - Ventilation shaft with heat exchanging finalized Q4 2022
  - Trolley pilot 2023
  - Electrified hauling 2025
  - Battery truck loaders
- New Haulage ramp
  - 1,500 m of total 5,600 m developed
- New water treatment plant under construction

## Strömfors

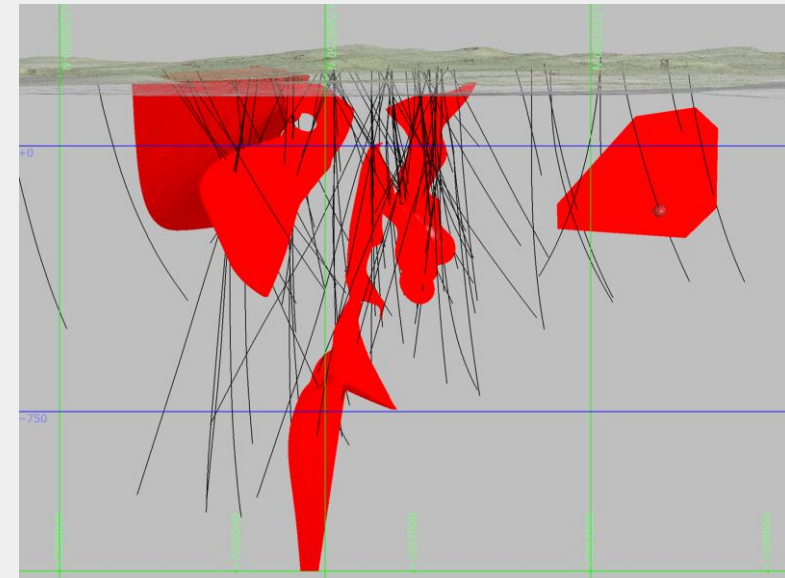
- Exploration and scoping study ongoing

Kristineberg/Rävliiden ore body  
mine layout

**BOLIDEN**



Strömfors cross section



# Major permits pending

- **Aitik**
  - 2022: Liikavaara environmental permit granted, mining concession update expected
  - 2023: Permits for increased waste rock storage and the ongoing dam safety measures and infrastructure changes
  - 2026: Main permit renewal
  
- **Garpenberg**
  - 2022-23: Permit for new dam construction method
  
- **Boliden Area**
  - 2023: Main permit renewal for Kankberg allowing increased production and extended production areas
  
- **Laver**
  - Boliden holds exploration licence
  - Re-application for a mining concession planned before expiry of exploration license in 2024



# Focus going forward

- Safe and stable production
- Develop extension opportunities
- Increased activity linked to lowering CO<sub>2</sub> emissions
- Higher productivity based on electrification and automation
- Increased social and legal license to operate

Underground scaler

