



# Environmental Permitting

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# Environmental Permitting

- Environmental permits required for most of Boliden's operations
  - mines, concentrators, smelters, land fills and many other installations
  - Individual assessment and regulation of each site/project
  
- The permit sets rules and limits for our activities at the site. Examples:
  - Production volumes: ... *permission to mine and process 36 million tonnes of ore per year at the Aitik mine*
  - Emissions: ... *emissions of copper from the tailings pond must not exceed 270 kg per year*
  - And more: reclamation methods, financial security for reclamation, vibrations from blasting, water treatment ...
  
- New or amended permits are required for most projects
  - New mines or other activities
  - Production increases
  - New or enlarged waste facilities – Important
  
- Some permits limited in time or subject to mandatory review

# Environmental Permitting

- Environmental Impact Assessment, EIA, required for all projects with a significant environmental impact
  - And for all large projects in Sweden
  - Extensive environmental investigations required
  - Consultations with authorities and other stakeholders
  - EIA tried and approved
- EIA and permit process must be completed before project can be implemented
- Not just a formality
  - Risk of delay
  - Often strong opposition
  - Cannot expect favourable outcome every time
  - Permit processes increasingly more complicated
  - Several mining related projects stopped or delayed during recent years



# Permits for Waste a Critical Issue

- Mining and smelting produces large amounts of waste
  - Waste rock, tailings sand
  - Slag
- New waste facilities regularly required
  - Land fills get filled up
  - Permits limited in time or tonnes
- Important environmental issues
  - Short term: discharge to water, dust, large areas
  - Long term: acid mine drainage, leaching
  - Often controversial projects
- Very thorough investigations needed
- No waste facility – No production



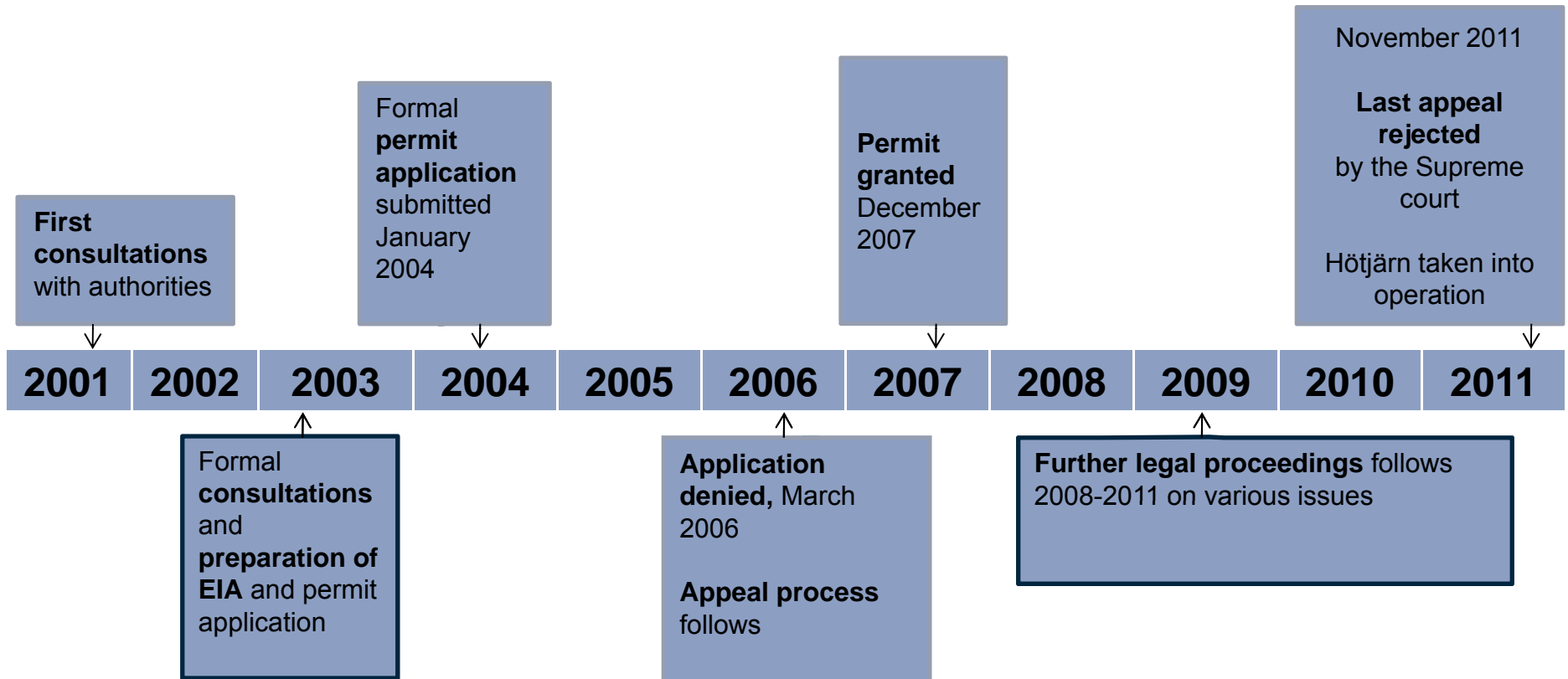
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# Example: Hötjärn

- New tailings pond for the Boliden Area delayed several years due to lengthy permit process with many setbacks
- Shortage in tailings disposal capacity
- Reduced production for several years



# Hötjärn tailings pond - timeline



## Compare: Garpenberg 2.5

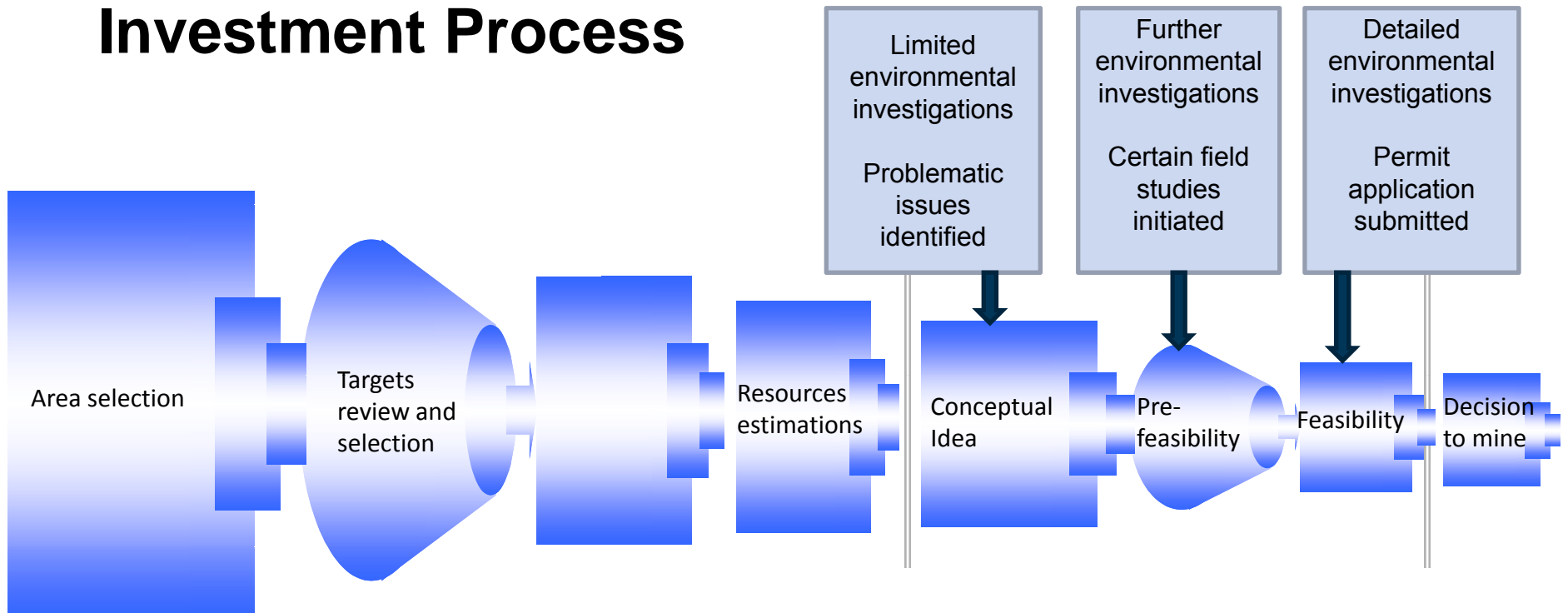
- Permit application prepared in one year (2010)
- Permit granted one year thereafter – No appeals

# What we do to get smoother permit processes

- Start preparations early
- Good relations with other stakeholders
  - Local and regional support
  - Comments and requests at an early stage
- Projects with high environmental performance
- Standardized procedures for EIA and permit applications (for mines)
  - Templates, check lists etc.
  - Ensuring that potential problems are identified and addressed at an early stage
    - Example: To ensure that EQS for surrounding waters are considered when the mine is designed



# Permit Process and Investment Process



- Try to start early in order to offset for lengthy permit process
- But not too early: some details must be known
  - Details required on production methods, emissions etc
  - Significant changes in a project may require a new or amended permit



# Some current environmental permit processes

- Rönnskär environmental permit
  - Production increase, review of permit conditions, underground waste storage facility
- Bergsöe environmental permit
  - Review of permit conditions
  - Production increase denied
- Harjavalta slag landfill
- Aitik 45 environmental permit
  - Production increase, enlarged tailings facility
- Laver exploitation concession
  - Environmental issues already at this stage: Natura 2000 and more
- And many more...



# Trends

- Land access more difficult
  - More and more protected areas
  - Stricter protection of species and habitats
  - Difficult to find land for mining and mining waste
  - No Net Loss Initiative - Problem or solution?
- Stricter rules on environmental impact assessment
  - EIA-directive currently reviewed in the EU
  - More and stricter rules to be expected
  - Proposal to require EIA for exploration!
- Lawyerisation of permit process
  - Several permits revoked on procedural and formalistic grounds
  - Increased focus on legal issues rather than technical or biological issues
- More and stricter environmental quality standards
  - Less acceptance for any environmental impacts



# What we do

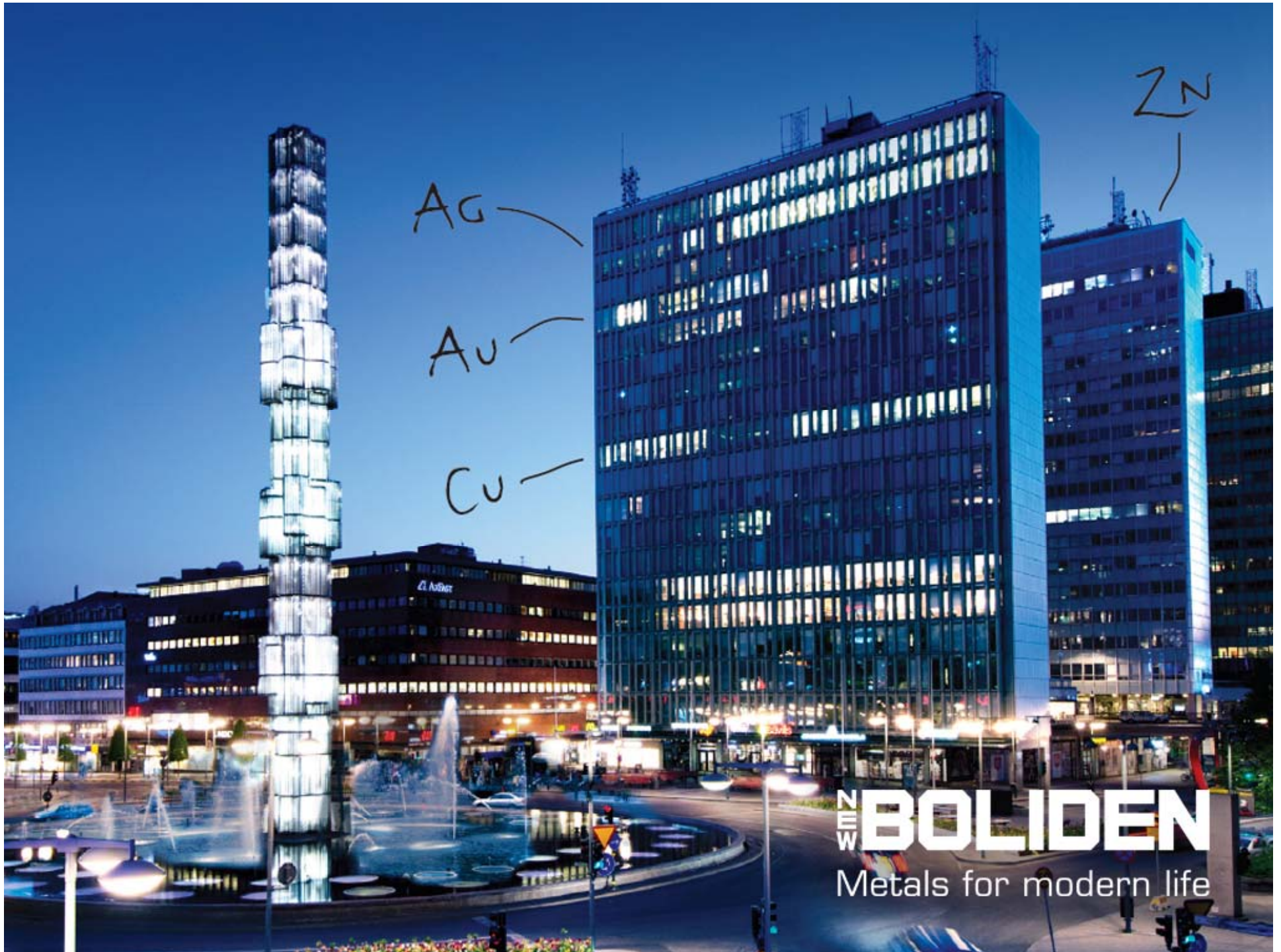
- We try to influence new legislation
  - Directly or through industry organisations
  - Active in expert committees on national and EU level
- We realize and accept that environmental requirements will continue to increase
  - Continue to improve internal procedures for permit applications and EIA
- We are committed to proving that mining is a sustainable business
  - Continuous improvement of environmental performance
    - Water treatment
    - Reclamation of closed down sites
    - Responsible waste management
  - Keeping good relations with local community



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