A novel process for treating e-waste

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Boliden Rönnskär
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- One of the world's most efficient copper-smelter
- World leader in recycling
- Extract metals for the modern society i.e. copper and precious metals and sulphur products for the chemical industry, ironsand.
- Important actor within recycling in Sweden.
- Largest private employer in Skellefteå municipally.
E-scrap recycling within EU – legislation will drive e-scrap volumes

Existing WEEE*-directive
Target to collect 4 kg per person and year

WEEE-directive 2016 (not yet decided)
Target to collect approx. 13 kg per person and year

The average EU citizen’s electronic product purchases currently equate to 24 kg of e-scrap per year

*WEEE = Waste from electrical and electronic equipment
New Kaldo plant
- Indoor storage
- Kaldo furnace
- Boiler
- Gas cleaning equipment
- Granulation plant
Part of circular economy

- **Copper**: Used to transport and produce electricity like in cables and generators.
- **Gold**: Advanced metals used in electronics like computers and mobile phones.
- **Silver**: Used for construing new roads and buildings.
- **Iron-sand**: Used for constructing new roads and buildings.
- **Sulphur-products**: Used for various industrial applications.

Raw materials from mines are processed into metals and other by-products. E-waste and other recycling materials are also integrated into this circular economy.
Ironsand

- Is a by-product from the copper production within the smelter.
- It has been used in Skellefteå area since mid 1970.
- Carefully determined technical and chemical properties. Was REACH registered 2011.
- Has good isolating and drainage ability, that’s why it serves as a good material in road- and foundation constructions.

Ironsand has contributed to build stable roads without ground frost in Skellefteå area for more than 40 years.
Effects of waste classification

- The bureaucracy and time taken to get permit using the waste regulations discourage
- Easier for the construction company to use crushed rock than to apply for a permit to use slag
- The word "waste" discourages
- Local environmental authorities within Sweden make different interpretations
Practical considerations when ironsand ≠ by-product

- Rönnskär can’t produce copper without producing slag and thereby can’t recycle without producing slag

- What are the options?
  - Export ironsand
  - Deposit
  - Cut down the Cu-production
  - A combination of above
The way forward

- Boliden welcome a fair discussion on how to ensure acceptable risks with the use of metal-containing smelter by-products - ironsand and others.

- Also take into account the benefits of using by-products from a resource point of view.

- Drop focus on metal concentrations! Take into account the characteristics and risks based on what experience and evaluations show. Both from field and laboratory studies.

- Fact based discussion

- Clear EU-wide application of the by-product / waste interfacing. The different interpretation seen today is not acceptable.
Ntombi wants to expand her business. She couldn’t without metals.

Women all over the world are empowered by starting companies of their own. Thanks to mobile communication, they can place orders, pay the bills and watch their business grow. But mobile phones cannot function without copper, gold and silver – metals that can be recycled and reused over and over again. Ntombi is in it for the long run, and so are our metals.