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**IERC 2023 Preview interview with Raymond Langevoort, Manager Copper Raw Materials at Boliden, speaker at the International Electronics Recycling Congress IERC 2023**

**ICM: ICM: Could you start by presenting Boliden and your activity in a few words?**

**Raymond Langevoort:** Boliden is a base metals company, operating 5 mining areas of which the Aitik copper mine and Garpenberg zinc mine are the two largest mines operated in Sweden. The company's smelter division operates 6 smelters; a secondary lead smelter in Bergsöe, Sweden, our Odda zinc smelter in Norway and Kokkola zinc smelter in Finland, the Rönnskär copper smelter in Sweden and Harjavalta copper smelter in Finland. In Harjavalta, Finland we also operate a nickel smelter. Besides lead, zinc, copper and nickel, Boliden also produces by-products such as gold, silver, palladium and sulphuric acid.

The Rönnskär copper smelter is one of the largest consumers of WEEE and other secondary raw materials as the last step in the recycling chain. What makes Rönnskär unique is the capability to handle hazardous elements in a sustainable manner. Besides this Rönnskär produces low carbon copper from primary raw materials as well as from secondary raw materials. The low carbon copper originating from concentrates produced by Boliden's Aitik mine has the lowest carbon footprint around. This has been achieved by high efficiency, automation and electrification at the mine and smelter, and the low CO2 footprint electricity mix in Sweden.

**ICM: What is your role in the Group?**

**Raymond Langevoort:** My role is to take care of the raw materials supply to both copper smelters. This includes a large volume of primary raw materials produced by copper mines around the globe, as well as secondary raw materials. For this we have a team of 7 Purchasing Managers located in different places, but mainly close to the smelters to be close to the raw materials our suppliers deliver, and to be able to provide the best service possible to our suppliers and Boliden's smelters.

**ICM: What is the importance of electronic waste for your business?**

**Raymond Langevoort:** Electronic waste is an important source of critical metals like copper. The demand for copper is increasing due to the rapid increase in electrification of our society (e.g. EV's and the required infrastructure for charging

stations) and the demand for sustainable green energy. It is great that electronic waste as a raw material, smelted and refined at Boliden's smelters, can contribute to the future society with increased electrification and renewable energy sources. Copper from primary sources would not be sufficient to fill the demand for copper. As an example, Boliden's low carbon copper is used in the construction of the Doggerbank windfarm which is the largest windfarm currently being built. A great synergy to use low carbon copper in a project that will generate green energy. Copper originating from recycling of electronics can potentially be used in such projects or, for example, in an electric vehicle. So recycled copper is being used to secure a better environment for future generations and Boliden is proud to contribute to this.

The treatment of electronic waste has several challenges to face though. The material has an increasing plastic content and decreasing metal content. This means more effort is needed to treat the material properly, potentially more CO<sub>2</sub> is emitted and less metal is recovered. This is a challenge for the whole recycling chain and we are working on our processes to make sure that the materials can still be smelted at Boliden's smelters in the future, because sufficient treatment capacity is required to handle the increasing amount of electronic waste and to avoid transportation around the globe increasing CO<sub>2</sub> emissions and costs.

### **ICM: What are the main drivers and what trends and challenges do you see in the near future?**

**Raymond Langevoort:** Our main driver is to provide metals essential for future generations in the most climate-friendly and sustainable manner. Recycling contributes to this sustainable metal production.

The challenge of increasing plastic content is however a trend which possibly contradicts with this as more CO<sub>2</sub> will be emitted in case of increased non-recyclable plastics in electric appliances. There is also an increased focus required on securing a sustainable supply chain for these materials, following the OECD guidelines and UN Global Compact, which Boliden is adhering to.

### **ICM: What is Boliden's strategy to overcome the challenges?**

**Raymond Langevoort:** With regards to the valuable contents in electronic waste we have to make sure that our processes can handle these decreasing contents of valuables and increasing contents of impurities and plastics in the future.

Technically this can be a challenge but even more so economically. Recycling is not cost-free and involves many stakeholders to complete the cycle. All players are currently facing increased costs related to inflation and high energy prices, but also related to the development of processes to dismantle and sort.

Regarding energy, Boliden's smelters are using heat generated from smelting raw materials in its own processes as well as distributing the heat to nearby communities. Tighter regulations are there for a reason, and they incite producers, consumers and recyclers, including Boliden as an end-of-life facility, to do the best we can to put sustainable processes in place. This can sometimes be problematic as regulations can change quicker than the stakeholders can adapt. Some of the regulations Boliden understands very well, such as restrictions on where electronic waste may be shipped to and where it may be treated. We also understand the challenges with this, but taking care of our own waste within Europe to high sustainability

standards is normal. This is why collaboration with our suppliers is important to maximise recycling and value creation.

### **ICM: Who is the target market for your Low Carbon Copper?**

**Raymond Langevoort:** Boliden's Low Carbon Copper has gained a lot of interest from manufacturers who want to decrease their Scope 3 emissions, resulting in a low carbon footprint of the product they put on the market. Like the Doggerbank windfarm example where a cable producer providing cables to the project produced cables with a low carbon footprint contributing to a low carbon windmill. In its turn it will generate more renewable energy and reduce CO2 emissions from alternative energy sources.

### **ICM: How do you see the future for electronics recycling?**

**Raymond Langevoort:** Challenging! There is a lot needed to secure proper and sustainable recycling going forward and to accommodate the increase in the electronic waste generation.

### **ICM: Why are you supporting IERC23?**

**Raymond Langevoort:** The IERC is a great conference where many market participants can meet and exchange thoughts, a place to meet everyone in a few days instead of travelling around too much. And as Boliden is very much in favour of recycling metals, as this is contributing to a sustainable metal production that is required to match the growing metals demand, this is the place where we need to be, to share our thoughts and present our great company providing metals essential to improve society for future generations.

#### **For further information and pictures please contact:**

**Jill Ledger** | Marketing and Communications Director

**ICM AG** | Schwaderhof 7 | 5708 Birwil | Switzerland  
+33 680 11 22 49 | [info@icm.ch](mailto:info@icm.ch) | [www.icm.ch](http://www.icm.ch)



#### **About ICM**

ICM AG is the international leader in circular economy congress organisation, specialising in automotive, electronics and battery recycling as well as e-mobility; some of the fastest-growing markets and waste streams in the world. Headquartered in Switzerland, ICM has been bringing together the entire value chain of the recycling industries in Europe, North America, and Asia for the last 27 years. The experienced ICM team speaks English, Chinese, French, German, Spanish, Italian, Serbian and Bulgarian.