

Aurubis AG

Metals for Progress

Recycling markets

Michael Hellemann, Senior Vice President

Warburg Bank Visit, May 30, 2022



Key Messages

01 **The Market:** Recycling Growth is highly attractive

02 **Our Footprint:** We have a strong network & are continuously expanding

03 **Our Growth Ambition:** Generating value on both sides of the Atlantic

04 **Our Answer to Sustainability:** Recycling & Primary in combination

Strong global macro trends drive growth in recycling markets & make it highly attractive

Recycling market trends



Multipolar
business world

Growth in emerging countries (especially China) will outpace Western countries



More complex
materials

Rising number of elements and decreasing metal content in primary & recycling raw materials



Increasing
recycling efforts

Stricter legislation and increasing consumer awareness regarding sustainability



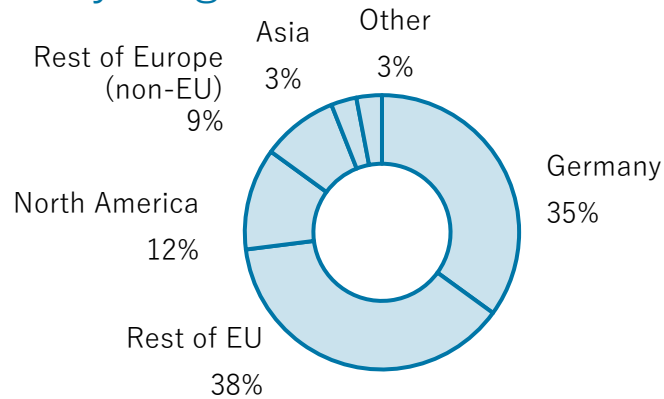
Local handling
of recycling
materials

Developing countries are reducing or banning imports of waste materials from the Western world

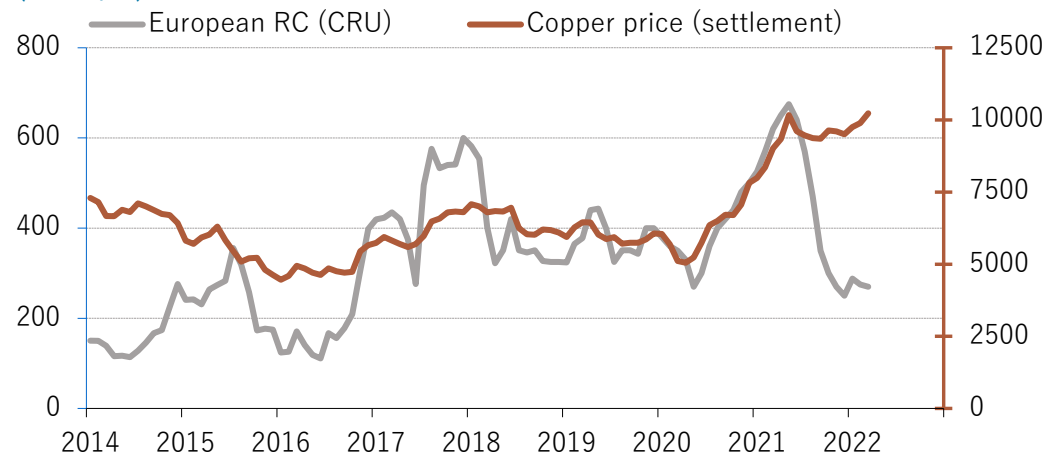


Recycling material supply with good refining charge levels requiring flexibility on the intake of materials

Origin of recycling materials in FY 20/21 (in %)



Copper scrap refining charges and copper price (in €/t)

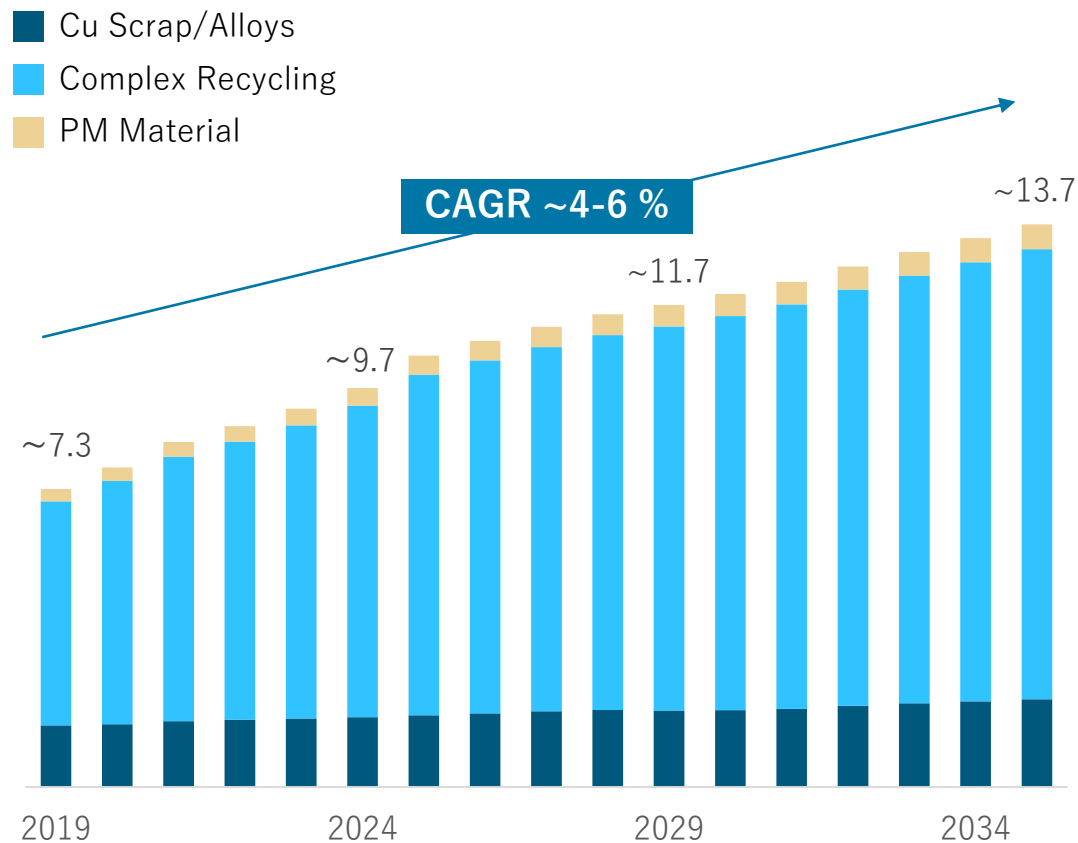


- The supply of recycling materials tends to fluctuate depending on factors such as metal prices
- Various import restrictions introduced for recycling materials in China are changing international material flows and leading to more regional treatment of material
- Aurubis processes roughly 1,000,000 t of recycling materials that contain copper and different kinds of metal; 436,000 t of this quantity was No. 2 copper scrap and blister copper in FY 20/21

European recycling market grows attractively at ~4 % CAGR 2019-35



EU market size for recycled materials 2019-35 (in mt)



Growth Drivers



Incremental Growth

Steady growth of industrial activity and consumption of consumer electronics provide solid growth base



Collection Rates

Increasing collection rates, especially of bulk e-waste and PCB materials (currently only 40-45 % collected – below target of 65 %)



Import/Export

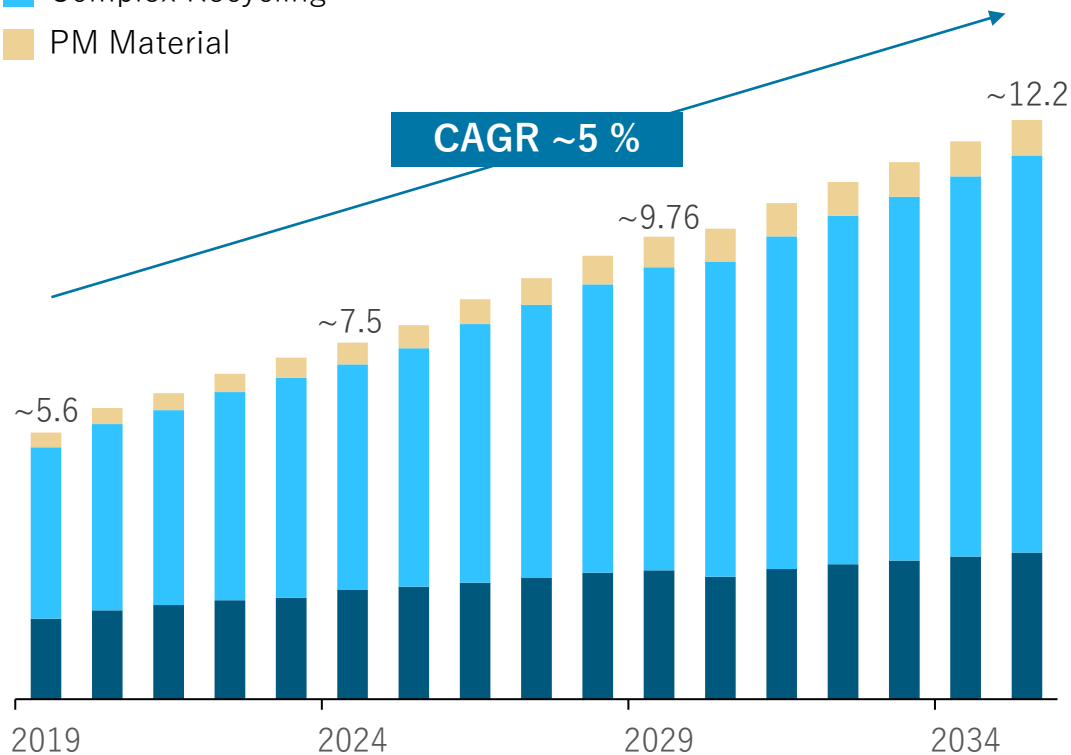
Net export of copper scrap **continuously decreasing with increasingly restrictive import policies** in current outlets

North American recycling market has significant growth potential with ~5 % CAGR 2019-35



North American market size for recycled materials 2019-35 (in mt)

- Cu Scrap/Alloys
- Complex Recycling
- PM Material



Growth Drivers



Incremental Growth

Continuous growth of industrial activity and consumption of electronics lead to solid growth base



Collection Rates

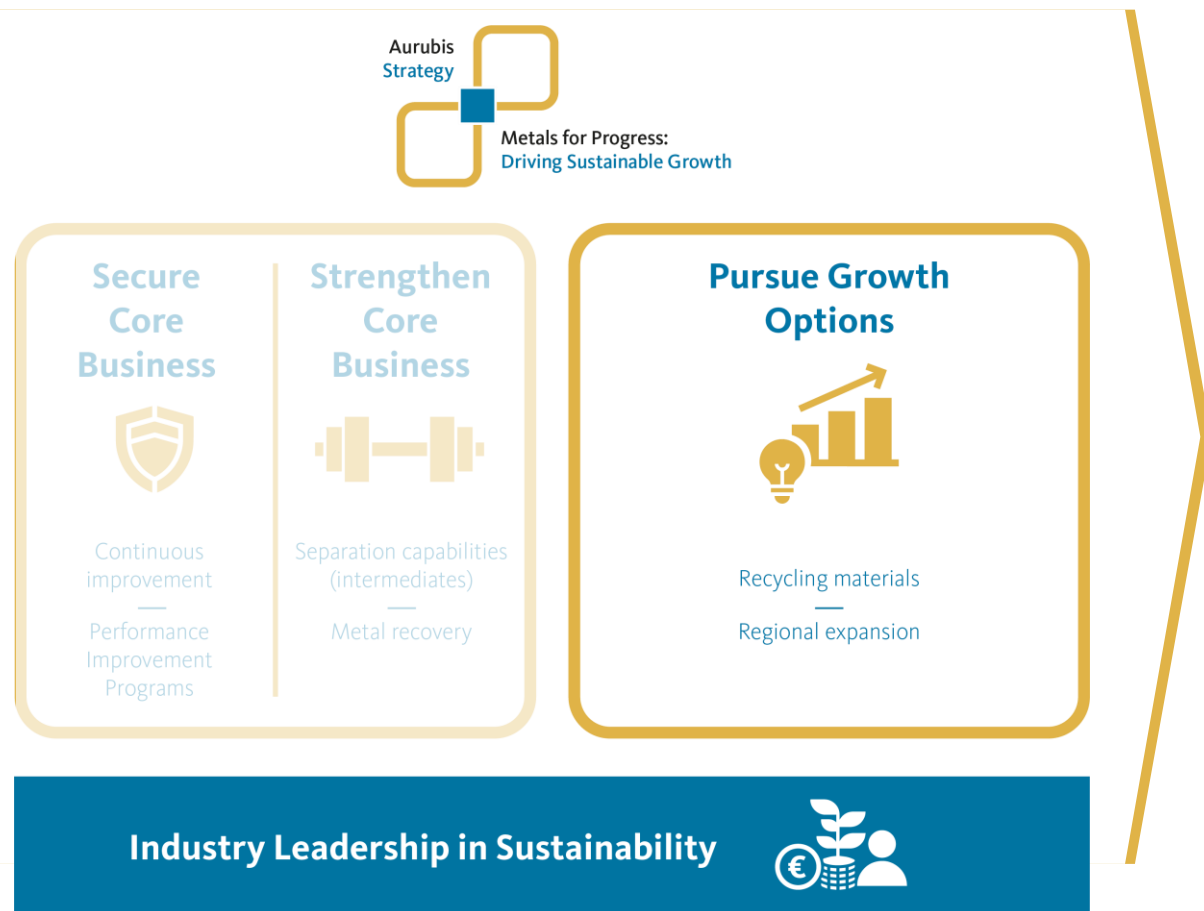
Increasing collection rates, especially of bulk e-waste and PCB materials (currently only ~30 %)



Import/Export

Net export of copper scrap **continuously decreasing with increasingly restrictive import policies in current outlets** (China/Southeast Asia)

Recycling markets are the focus of Aurubis' growth ambitions



Growing material availability

Strong growth in European and US recycling markets driven by global macro trends.

Higher material complexity

Miniaturization and increasing collection rates will drive availability of low-grade recycling materials – a sweet spot for Aurubis!

Low competition

Aurubis is a frontrunner in recycling of low-grade materials in Europe; limited low-grade recycling capacity in the US is a great opportunity.

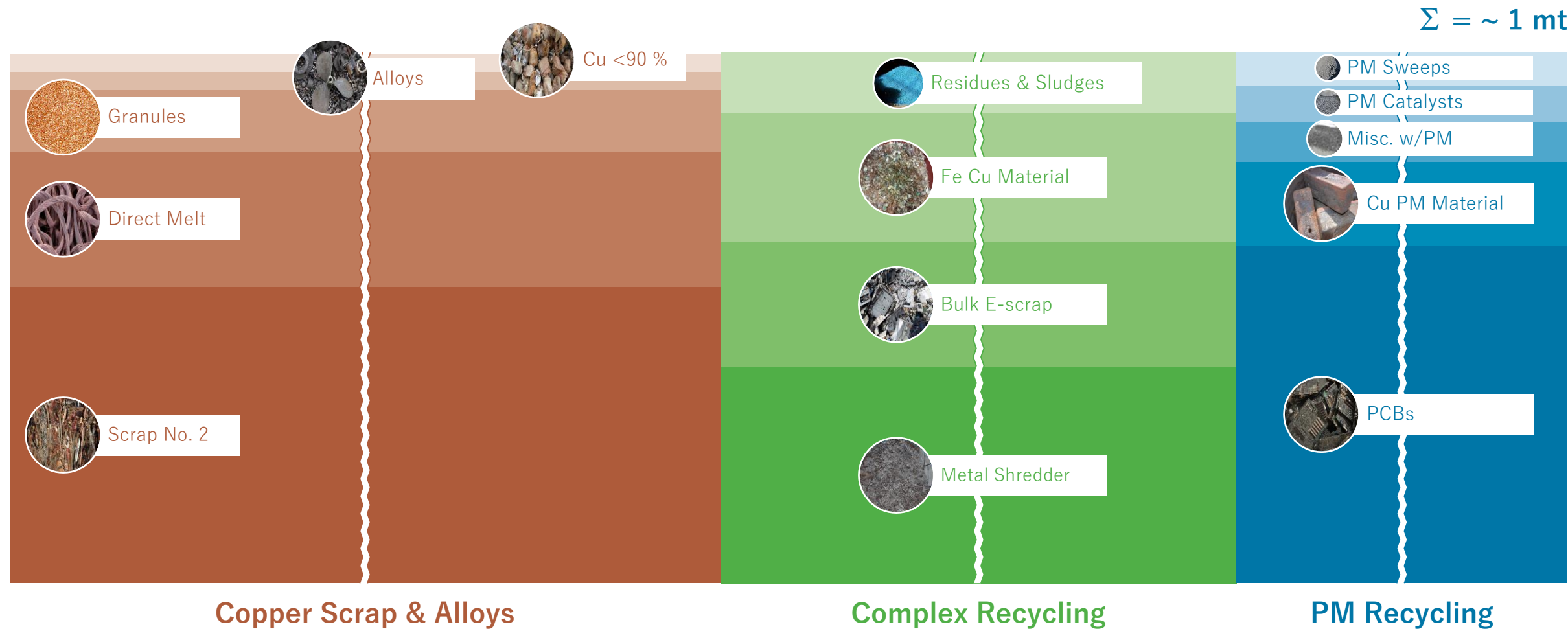
Stable supply base

Aurubis already has a diversified, reliable supply base in Europe & the US – closed-loop solutions convert customers into reliable suppliers.

» **The perfect mix for Aurubis to pursue future growth.**

Our metallurgical capabilities ensure necessary flexibility for feed mix

Illustrative



Our state-of-the-art integrated smelter network makes us partner-of-choice



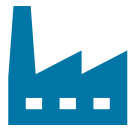
Aurubis Richmond, USA, sets stage for expansion in recycling business and execution of updated strategy



Richmond County, Georgia, USA

In a greenfield project, Aurubis will set up the largest specialized **recycling smelter** in the United States

Plant designed to recycle **PCBs, shredder**, and other **metal-containing recycling materials**



- 2 Top-Blown Rotary Converters
- 1 Lead-Tin Alloy Furnace



2022 – 2023

Construction timeframe and plant equipment orders confirmed

Using **proven market technologies**

employed in the Aurubis network

Producing blister copper as a **marketable product**

and processing it within the Aurubis smelter network and for external sales

Option for **brownfield expansion** on site



> 35,000 t blister copper recovered from recycling materials



100+ employees and managers planned



Future improvement of CO₂ footprint

For Aurubis growth means sustainable growth

Tomorrow Metals is our Aurubis promise to stay best in class in all sustainability challenges of today and the future by using our metals.



ENVIRONMENTAL
FOOTPRINT



CO₂ FOOTPRINT



RECYCLING



RESPONSIBILITY
(SOCIAL, SOURCING, SUPPLY)

However, tomorrow's challenges can only be tackled through a combination of Recycling & Primary Raw Materials

