Breakout session 3a:
Scaling up recycling of complex products

Christian Hagelüken, Umicore
Metal recycling plant for complex material streams

Umicore Hoboken
The challenge - no recycling without collection

Order of magnitude of # of actors worldwide

Use

1,000,000,000s

local

Product distribution

WEEE Collection

100,000s

Product manufacturing

Dismantling

1,000s

Regional/national

Pre-processing

(manual-mechanical)

Shredding Sorting

End-processing

(metallurgical-chemical)

Metal Recycling

~ 10

International

Ag

Au

Cu

Pd

... Co

Strategic Materials for a Low-carbon Future: From Scarcity to Availability – Christian Hagelüken
Precious Metals in a Circular Economy?

Umicore process yields: >> 95%

- **Real recycling rates***:
  - Jewellery, ingots, coins: >> 90%
  - Chemical process catalysts: > 90%
  - Automotive catalysts: 60-70%
  - Electronic products: << 50%

**Recycling driver:**
- Value
- B2B
- B2C, value
- B2C, legislation
Recycling of Li-Ion Batteries