

Welcome to the  
Aurubis Capital Market Day 2016

*September 30, 2016*



Welcome

Angela Seidler

**Keynote**

**Jürgen Schachler**

Supply Strategy & SCM

Christophe Koenig

Pirdop Shutdown

Ivailo Vatev

Concentrate and Scrap Markets

Christophe Koenig

Sulphuric Acid Markets

Peter Harrisson (CRU)

Sales Market for Copper

Somayeh Hakimi

Rod/Shapes/FRP

Stefan Gröner, Hans  
Rosenstock, Stefan Boel

Earnings Improvement Project

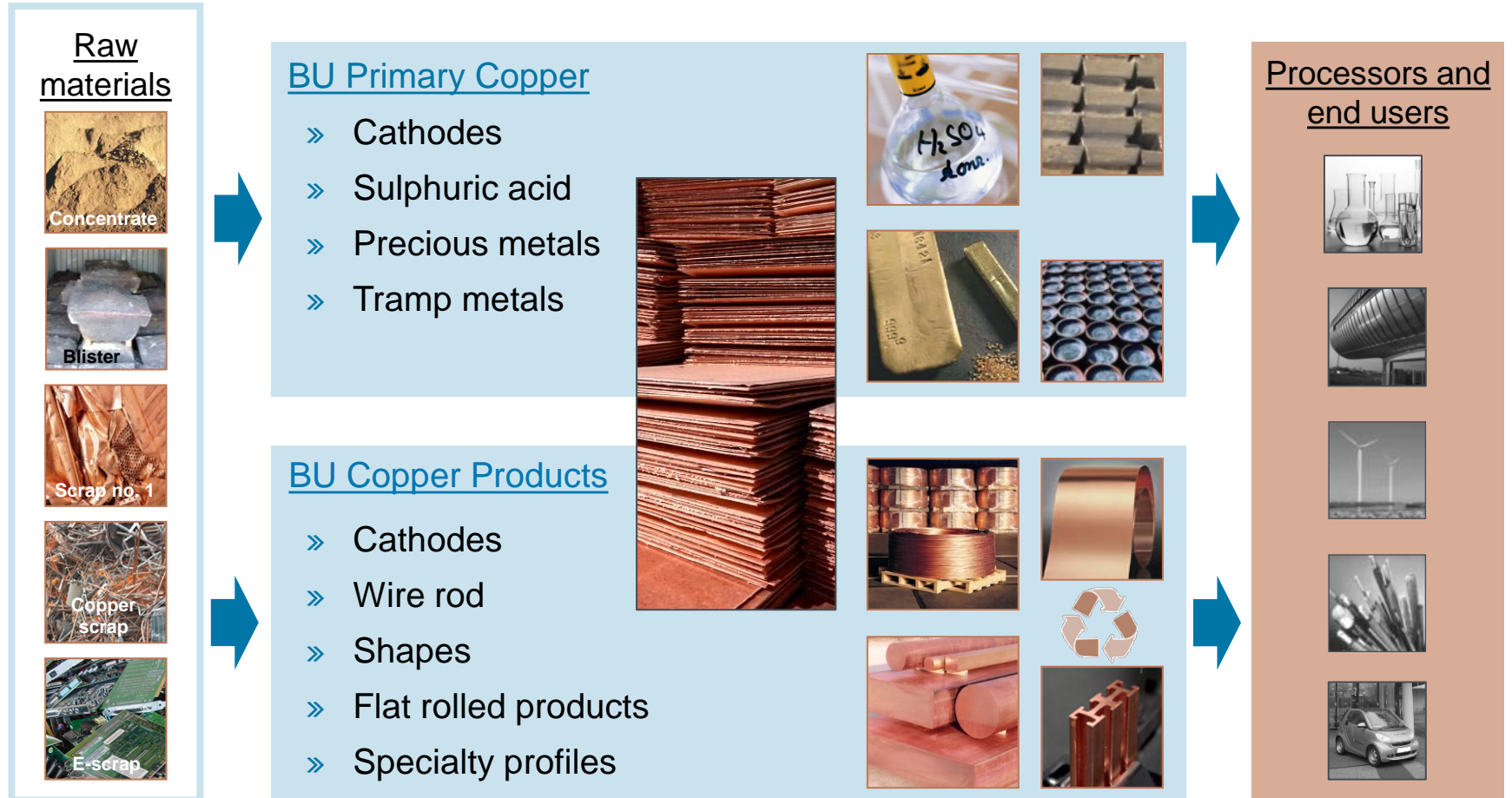
Thomas Bünger

Closing remarks

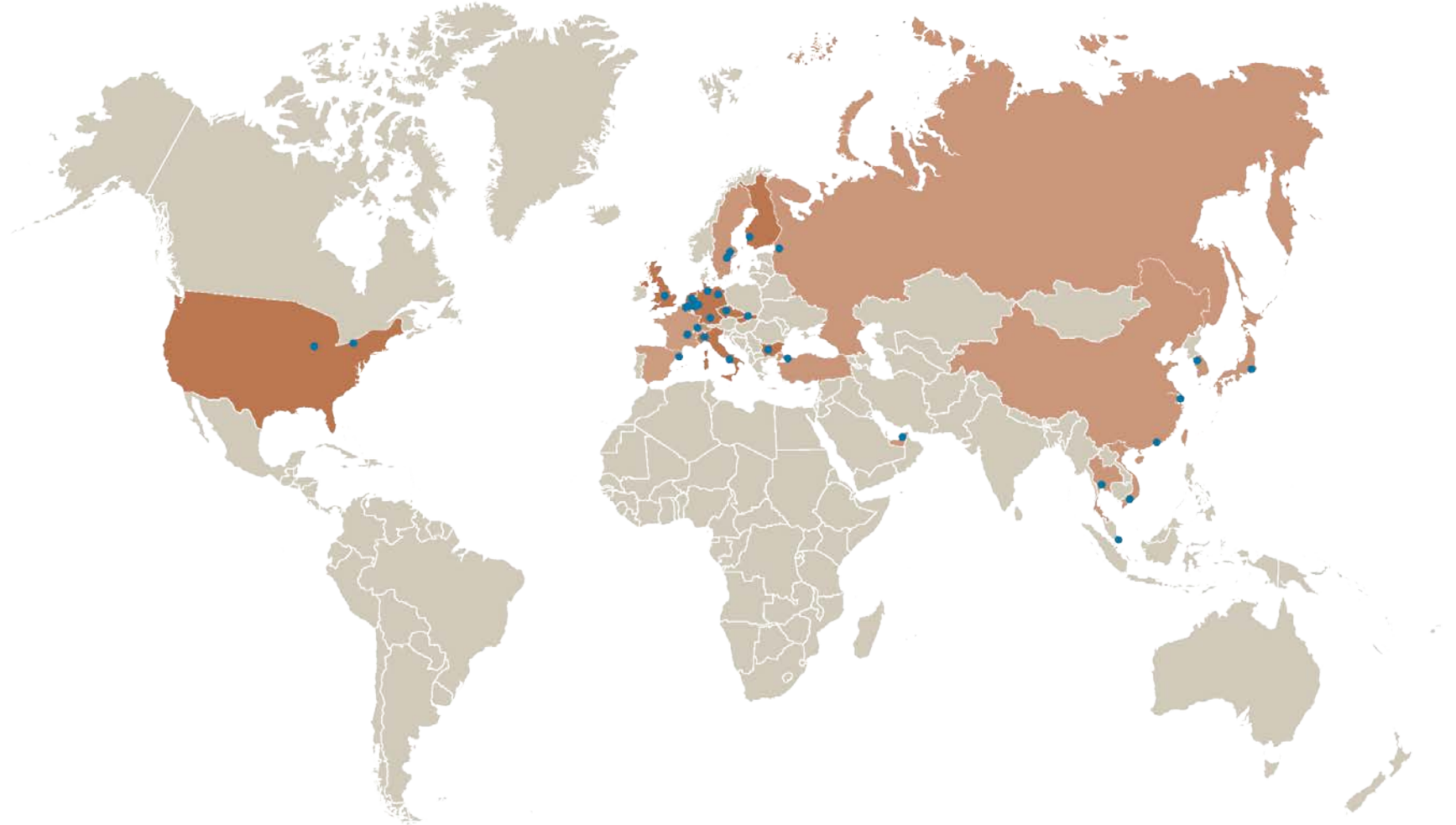
Jürgen Schachler

Aurubis' strengths include productivity, efficiency, environmental protection and processing expertise

## Aurubis: an integrated copper producer











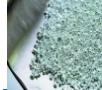
Aurubis has developed into a leading international copper producer over the past 150 years





Aurubis is a world leader in the copper value chain

	FY 2014/15	Position
 Concentrate processing	2,294,000 t	No. 2 worldwide
 Copper scrap processing	294,000 t	No. 1 worldwide
 Cathode production	1,138,000 t	No. 3 worldwide
 Rod production	764,000 t	No. 1 worldwide
 Shape production	170,000 t	No. 1 in Europe
 Strip production	216,000 t	No. 1 worldwide

	FY 2014/15
 Sulphuric acid production	2,200,000 t
 Gold production	45 t
 Silver production	958 t

# Aurubis' strong market positions in key segments of the copper industry chain



- » TC/RCs, treatment and refining charges
- » Cost position
- » Metal recovery
- » Complex raw materials
- » Sustainability
- » Cathode quality
- » Innovation

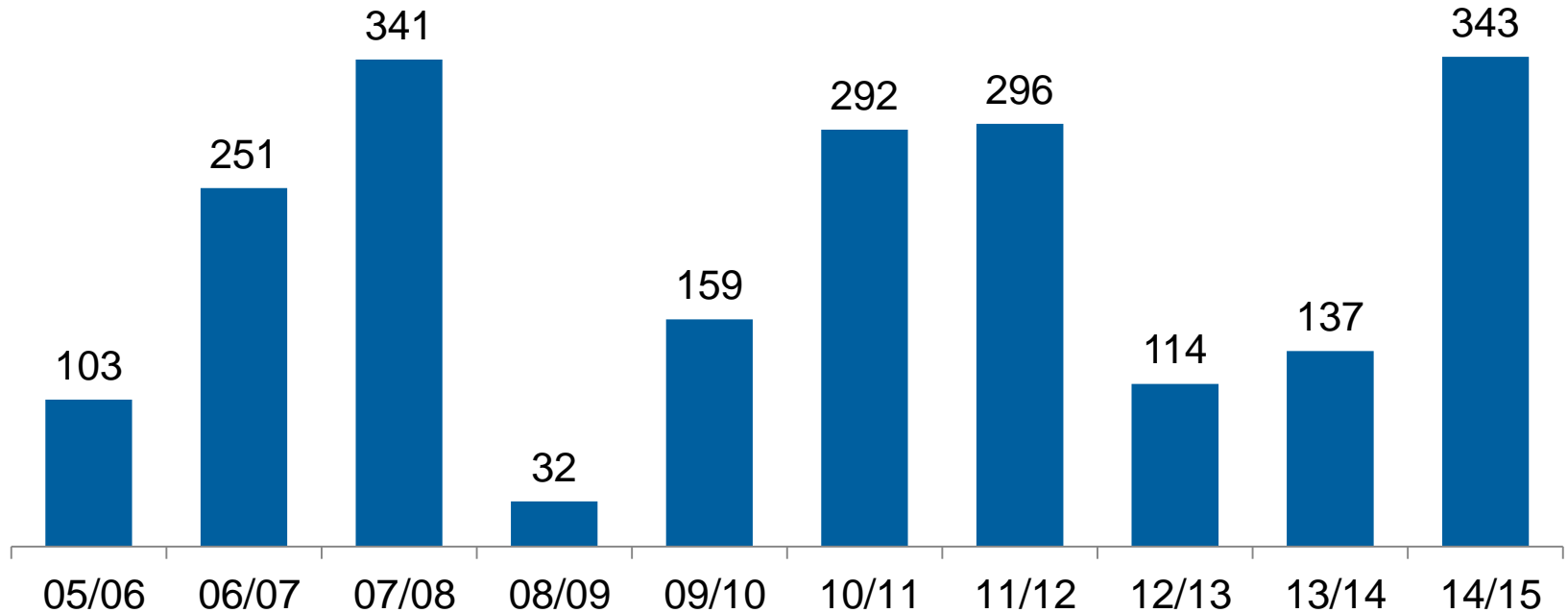
- » Surcharges
- » Cost position
- » Quality
- » Proximity to market
- » Sustainability
- » Customer service
- » Innovation



Aurubis' key success factors

## Operating EBT and ROCE development

■ Operating EBT (in € million)



Year	ROCE
05/06	16.8%
06/07	26.2%
07/08	21.7%
08/09	-1.9%
09/10	25.5%
10/11	23.9%
11/12	20.5%
12/13	7.0%
13/14	8.5%
14/15	18.7%



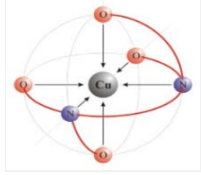
## Rising Copper Demand

Global refined copper demand will increase, compensating for substitution effects



## Multipolar Business World

Emerging countries (especially China) will outpace Western countries



## More Complex Materials

Rising no. of elements and decreasing metal content in primary and secondary raw materials



## Increasing Recycling Efforts

Volume and complexity of recycling materials will rise



## Growing Sustainability Ambitions

Shifting customer values towards sustainability

## Implications

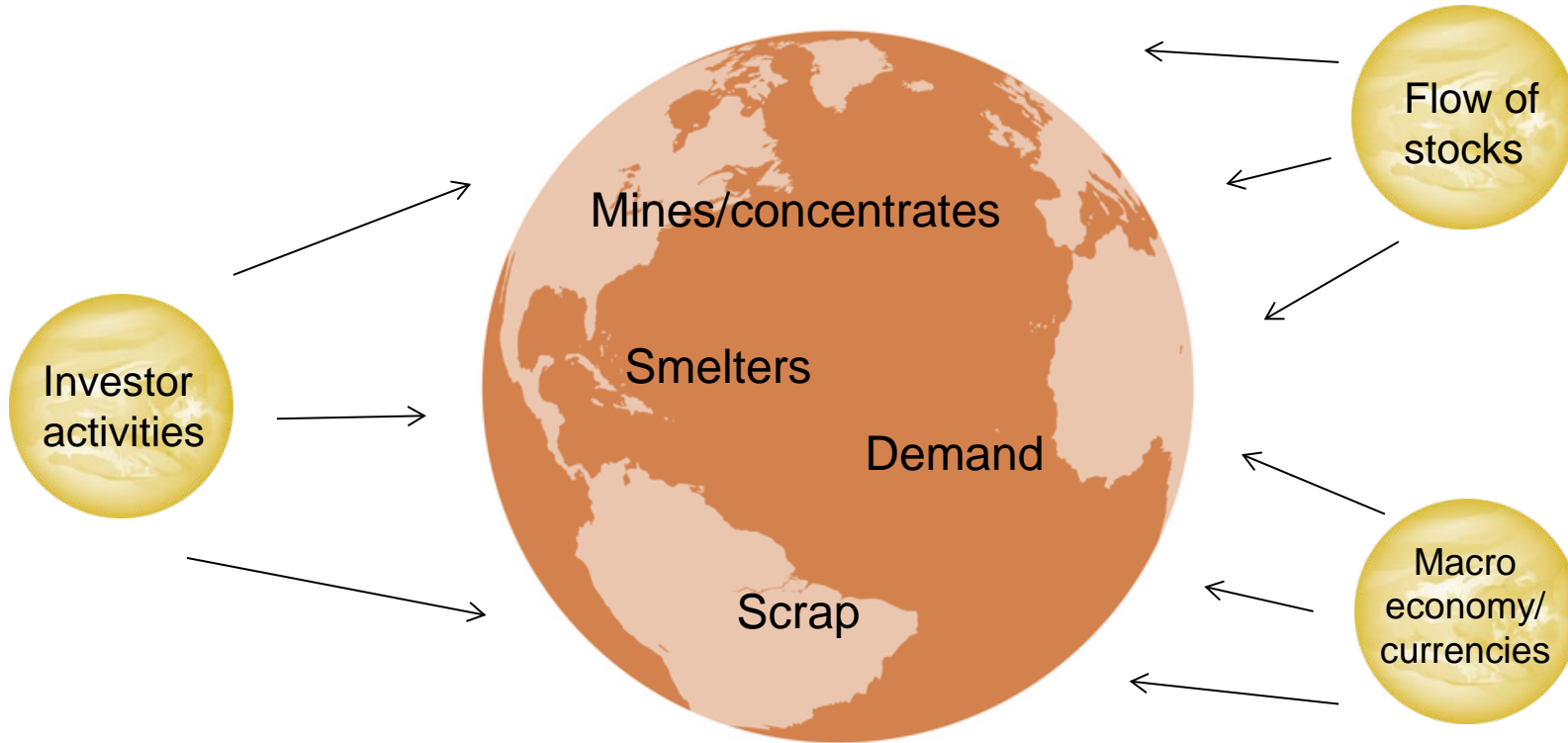
Global expansion of copper production capacity underway

Demand for global delivery and international production platforms

Requires extensive production know-how, innovative technologies and customized solutions for suppliers

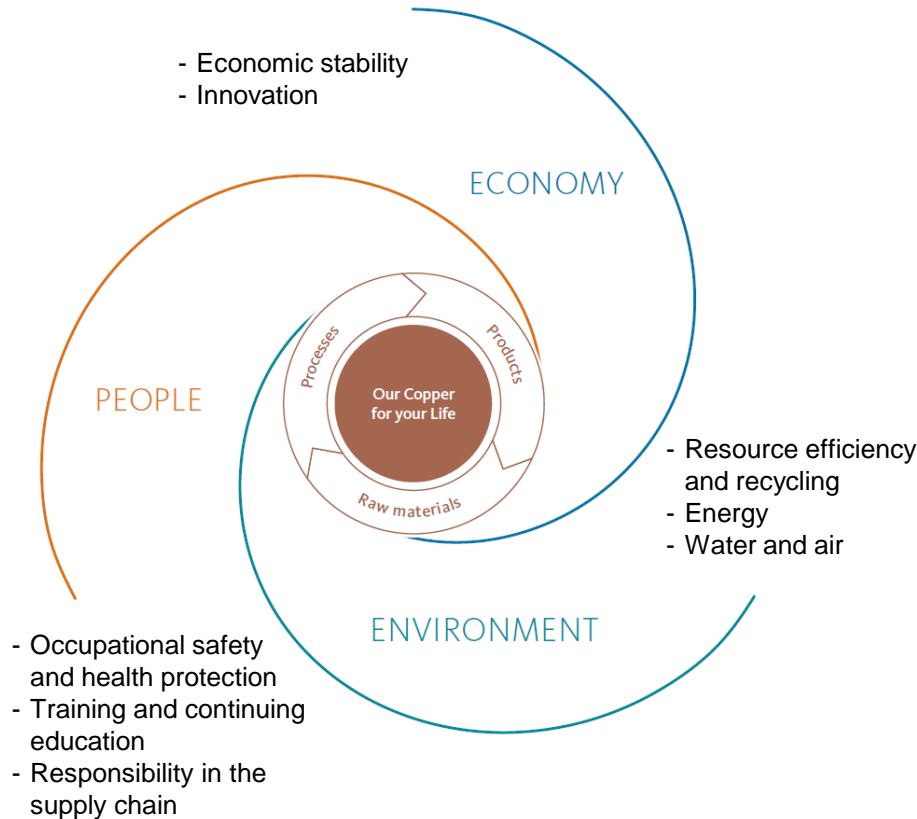
Recycling capacity and capability with high technical standards needed to meet customer and supplier requirements

Sustainable activities balancing economy, environment and people





# Sustainability is a fundamental component of the Aurubis strategy

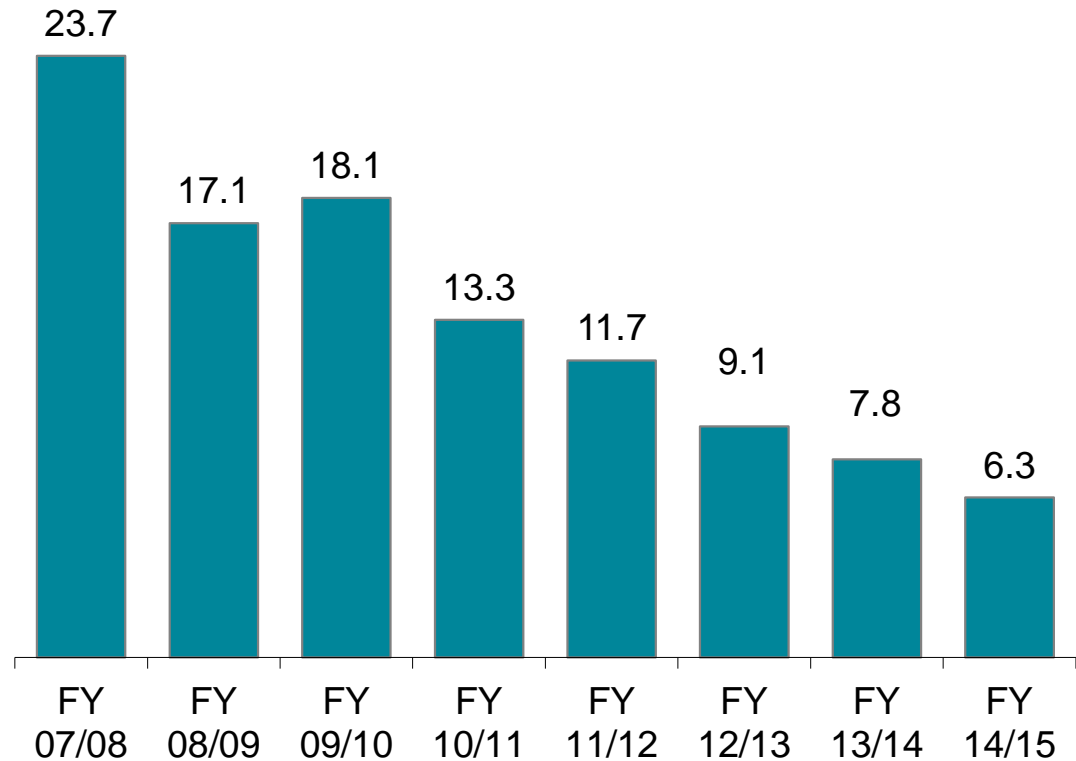


- » We put the highest possible effort into
  1. Environmental protection
  2. Occupational safety
  3. Responsible use of primary and secondary material
- » We have been committed to the internationally recognized United Nations Global Compact since December 2014
- » In addition to the basic principles of the International Labour Organization (ILO), this standard includes the areas of human rights, the environment and anti-corruption
- » Sustainable investment: environmentally friendly and resource-efficient – “Prime Status” classification from oekom Research AG

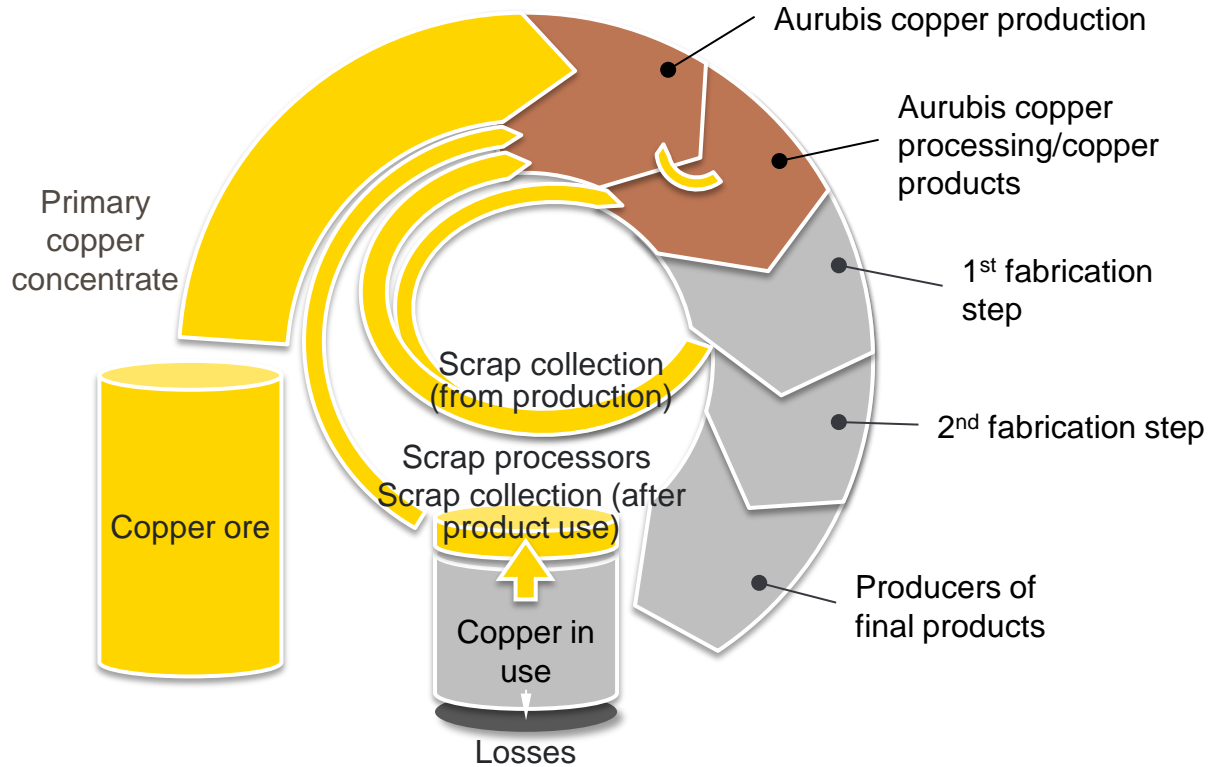


Safety is fundamental to our business

LTIFR<sub>(1-n)</sub>: Lost Time Injury Frequency Rate  
(Incidents/accidents with loss of time of one complete shift or more, per million h worked)



The target must be a far-reaching, closed value chain and increasing sustainability



The EU Commission's "Circular Economy Package" from December 2015 highlights the fact that Europe's ability to base growth and progress on innovations from the circular economy will lead to increased due diligence in the use of primary resources.

We will determine our own way forward





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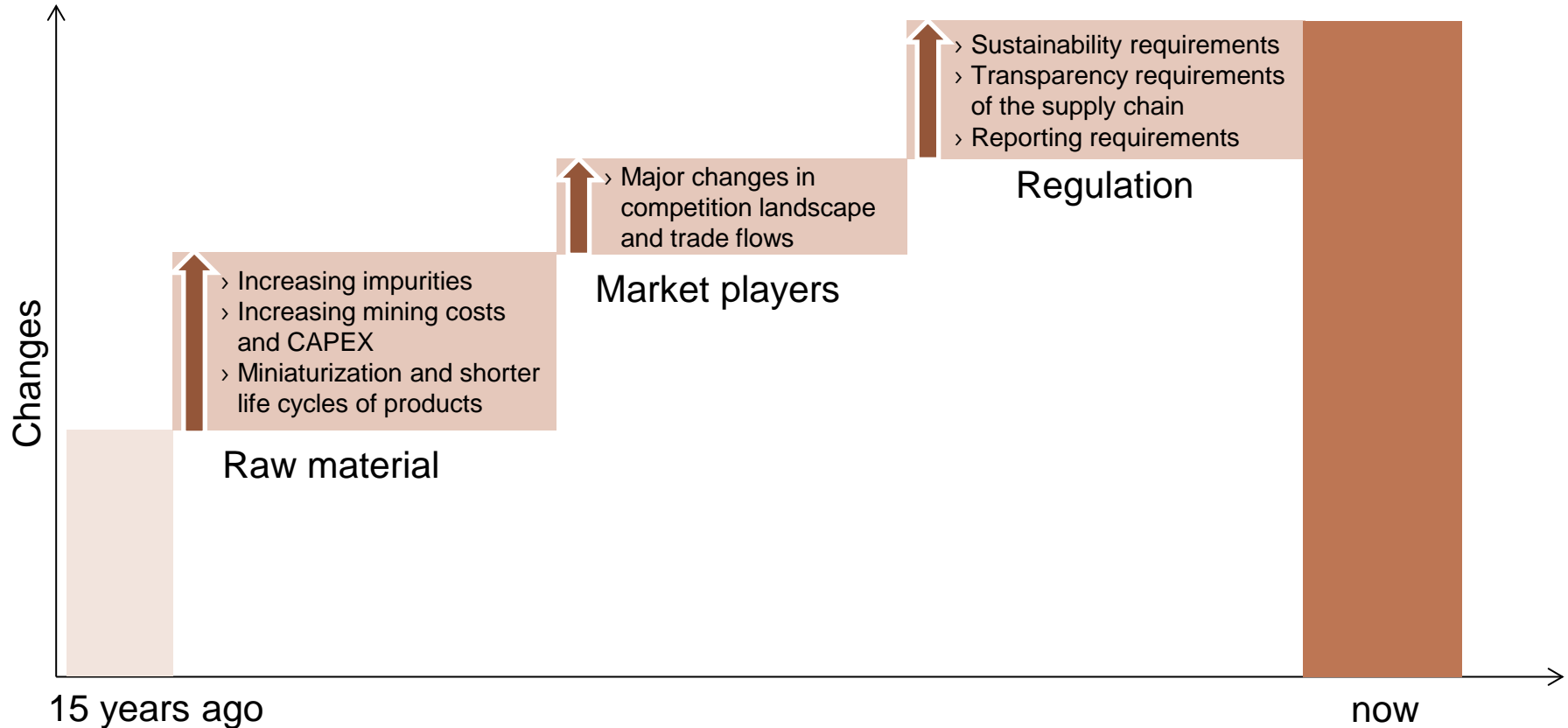
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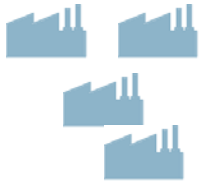


The changes in the external environment have been profound in the last 15 years

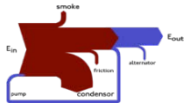


Aurubis has developed into a global organization leveraging synergies between the plants

## 15 years ago



4 different non-integrated companies



Simple or limited flows between production sites

» 9 elements being continuously monitored



## Today



**Aurubis**

9 major production sites in 6 countries



4 smelters  
4 tankhouses



Increase of flows between sites and further processing of intermediate products

» Benchmark in environmental protection  
» 40 elements being continuously monitored

The changes provide an opportunity for Aurubis to leverage its capabilities and global portfolio.

- › Raw materials will continue to become more complex
- › Our drive towards managing complexity required a development in our way of managing our supply chain
- › Aurubis' chosen path of a strategy based on developing capabilities to treat a variety of complex raw materials that follow different market drivers has been a recipe for success and stability.

- » The increasing complexity of raw materials combined with stricter regulation is an opportunity for Aurubis.
- » Changes in the way we manage our flows and our supply chain led to a change in the organization, in our data management and a drive towards algorithmic optimization.
- » The optimization is not only to **maximize the use of our capacities** but also first and foremost to **maximize the use of our capabilities.**

The SCM tactics derived from our strategy are the basis for our actions and development

---

## **MANAGE SOLUTIONS**

Optimize margin end-to-end and optimize NWC

**Key competences:** production planning, metallurgical know-how, advanced process decision-making

## **OFFER SOLUTIONS**

Proactively market our solutions

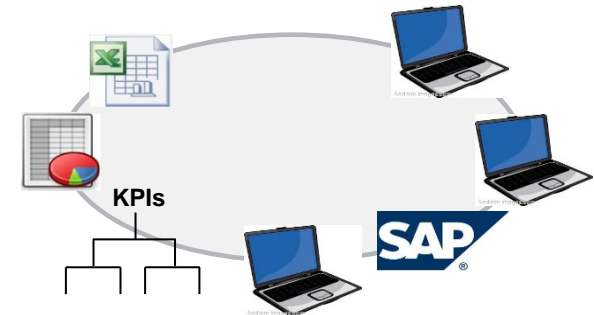
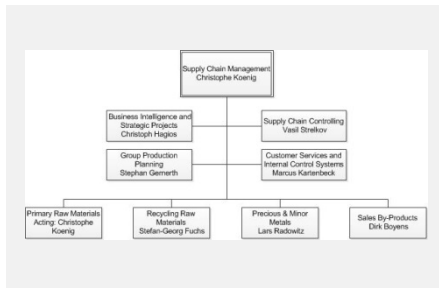
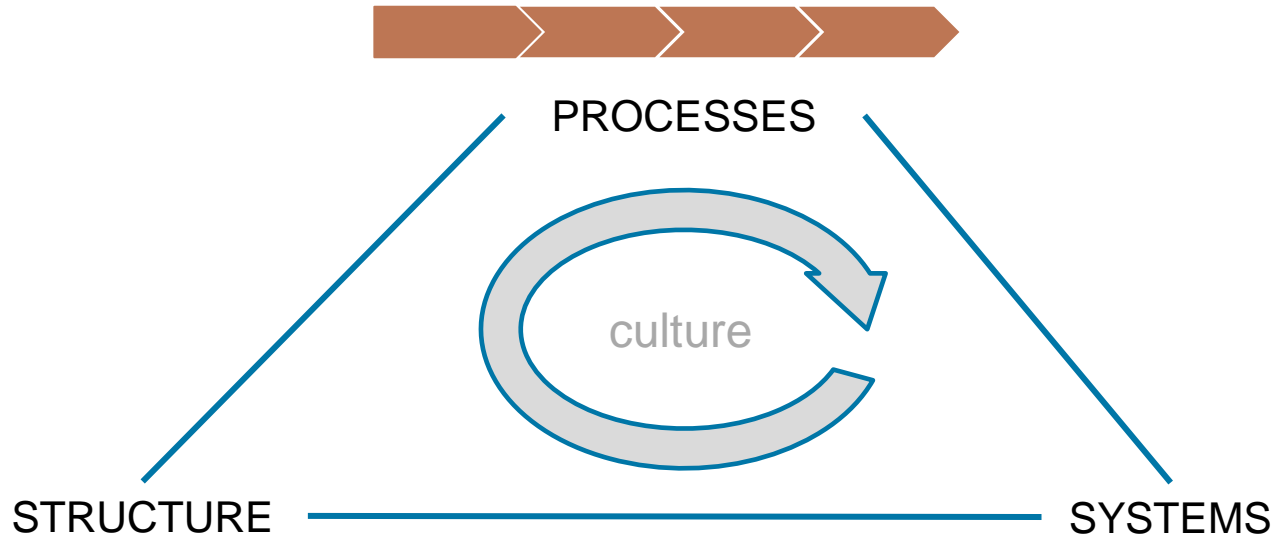
**Key competences:** commercial know-how, customer services

## **DEVELOP NEW SOLUTIONS**

Identify new markets and push new solutions

**Key competences:** project management

The general conditions of our SCM have been checked and adjusted





The tactics derived from our SCM strategy are the basis for our actions and development

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- » Managing our flow charts in an **optimal value-based** way means **maximizing the use of our capacities AND capabilities**
- » Key objective in purchasing is to maximize our delta to benchmark terms, fully leveraging our competitive advantages
- » The purchasing strategy and goals are formulated to allow for the opportunity of optimization, taking uncertainties into account
- » Decision support tools have been developed to support the optimization of our input mix flexibility and purchasing decisions

Our project SCOPE (Supply Chain Optimization and Excellence) helps to manage complexity in Production Portfolio Planning with analytical tools

## Complexity in Production Portfolio Planning (Example: primary copper production)



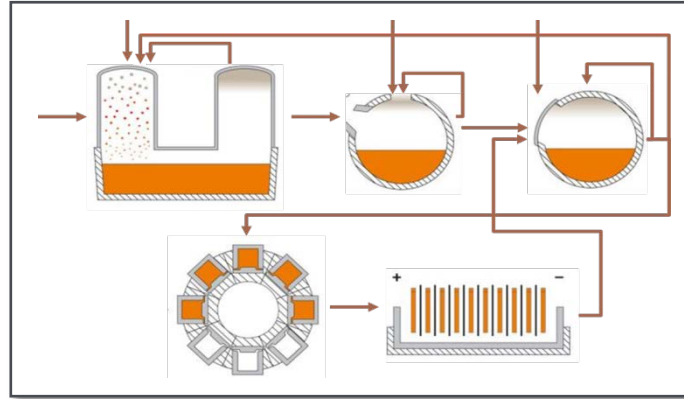
Mines



Recycling centers



Transport



Production process



Products

Inherent high combinatorial complexity makes an Advanced Analytics approach necessary to enable value-based end-to-end planning and to support planners' experience

The tactics derived from our SCM strategy are the basis for our actions and development

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Our purchasing markets are segmented in 2 types of raw materials:

1. Typical supplier-customer relationship for commodity material/volume-driven
  - » Driven by our processing capacities
  - » Mostly driven by the market
2. Solution provider for non-commodity or more complex materials/capability-driven
  - » Driven by our processing capabilities/margin-driven
  - » Driven by our USP/competitive advantages
  - » Driven by close customer relationships with a selected number of industrial/mining companies



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Maintaining our competitive advantages in terms of capabilities is key to sustaining the success of Aurubis, which means:

- » Being able to be the first mover developing solutions for the mining and industrial applications' recycling challenges in the medium and long term
- » New solutions are based on the systematic identification of possible future trends and close coordination between SCM, R&D and Production

# Example of developed solution: The CESL Cu-As technology – sustainable processing of high-As copper concentrate



Pilot autoclave



LME Grade A cathode



Non-hazardous residue

- » Since 2010, Aurubis and Teck have jointly developed a technology to sustainably process copper concentrate with very high arsenic content, which could not be fed into smelters
- » In a hydrometallurgical process (autoclave) the copper is leached, while arsenic is precipitated simultaneously into a stable non-hazardous mineral
- » High-quality copper cathode is the main product
- » Gold and silver are recovered with additional technology
- » Long-term stability of the arsenic residue has been proven in a 4-year test
- » The technology has been successfully validated on more than 20 concentrates with arsenic content up to 12 % and a patent has been granted
- » The CESL Cu-As technology is ready to be applied in production
- » Aurubis and Teck are assessing a commercial-scale CESL Cu-As refinery



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Smelter



Refinery



Acid plant



Flotation plant

## Key figures 2014/15

Location	Pirdop
Number of employees	824
Part of Aurubis Group since	2008
Concentrate throughput	1,190,000 t
Scrap throughput	59,000 t
Cathode copper	232,000 t
Sulphuric acid	1,217,000 t

## Total investments

€ 235 million (Jan 2008 – June 2016)

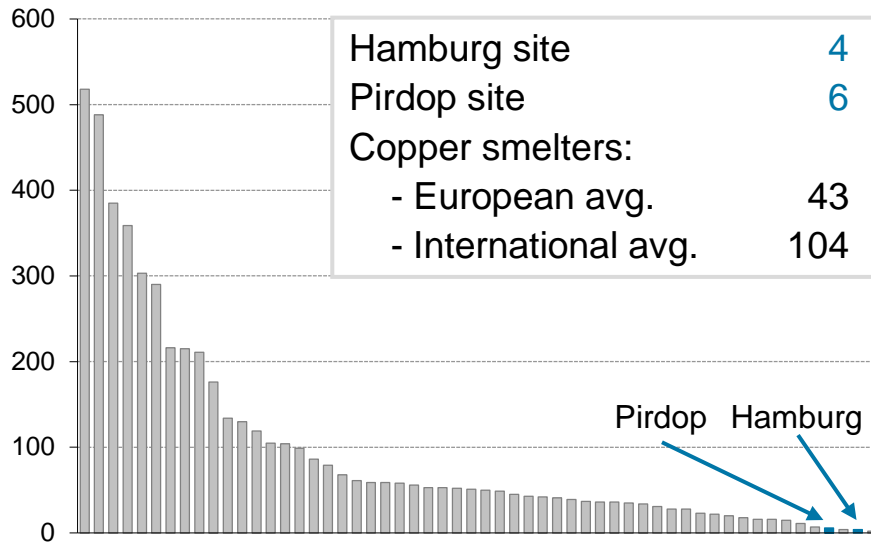
## Share in the Bulgarian economy

9 % of total national exports  
9 % of total national exports to EU  
5 % of total imports of goods and services

Aurubis Bulgaria is the leading copper producer and recycler in Southeastern Europe

On top of excellent standards, additional improvements in environmental protection are planned at the Pirdop site

SO<sub>2</sub> emissions of primary copper smelters  
(in kg SO<sub>2</sub> per t of copper output)



Source: Wood Mackenzie, 2016 / internal data, Aurubis (preliminary)

Aurubis has achieved outstanding successes in environmental and climate protection and is currently one of the world's most environmentally friendly copper producers

- » About € 160 million has been invested in environmental protection measures since 2000
- » Capital expenditure program “Aurubis Bulgaria 2014” to improve production and reduce emissions comprised investments of more than € 26 million in environmental protection measures
- » New off-gas treatment facility commissioned in late 2015
- » Additional investment of € 6.4 million for the construction of a new surface water cleaning facility, commissioned in 2014
- » Regular dialogue with neighbors at our information centers in Pirdop and Zlatitsa
- » Cooperation with environmental associations in environmental protection projects, e.g. environmental training for schoolchildren

# Large-scale shutdown completed within budget



	Plan	Actual
Total budget (€ mill.)	43.8	43.7
Duration (days)	50	54
EBIT impact	25	29

- » Largest renovation project for the plant: replacement and overhaul of 11 units
- » 52 companies and 1,200 workers involved
- » No accidents: strict safety measures with professional consultants
- » Faster ramp-up period compensating the slight delays in the project duration
- » EBIT effect:
  - › Higher actual TC/RC than planned
  - › Longer duration but faster ramp-up



# Positive impact of the shutdown on operations

- » Repair and replacement of main aggregates (last shutdown in 2007)
- » Environmental measures in waste heat boiler and acid plant; launch of off-gas treatment plant
- » Capacity optimization leading to a 170,000 t increase in concentrate throughput p.a.





# Comprehensive work program at smelter and acid plant fully implemented

- » Complete re-bricking of the flash smelting furnace and anode furnaces
- » Replacement/extension in the following sections of the smelter and acid plant:
  - › Dryer section (dryers, water head tank, dry concentrate bin)
  - › Replacement of main aggregates of waste heat boiler
  - › Anode casting wheel
  - › Acid plant: replacement of cooling tower, drying tower, converter vessel and catalyst



# Shutdown and Fit for Future project (FFF) – Scheduled activities related to the future capacity optimization

- » Modification of foundations for two of the converters in relation to the removable converter project: capacity optimization with 170,000 t p.a. of concentrate reaching 1.47 million t p.a.
- » Modifications in acid plant
- » Knowledge transfer within Aurubis: the concept was originally developed in Hamburg and implemented in Pirdop

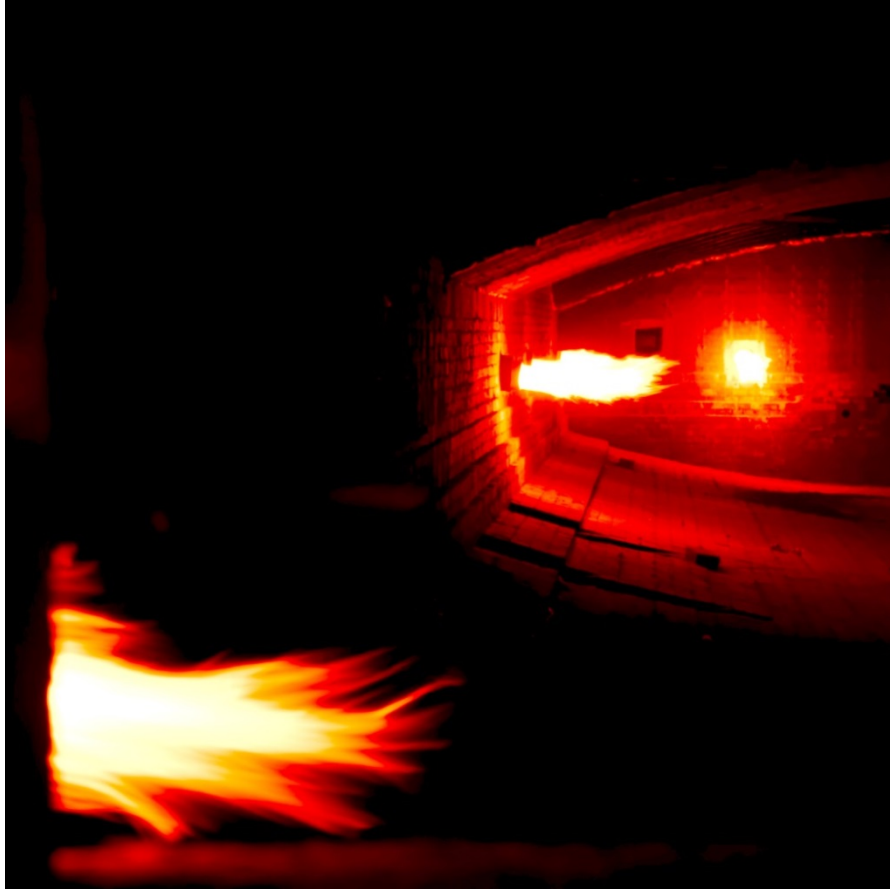




Pirdop benefited from the Hamburg shutdown experience in 2013 by the exchange of know-how within the Group

- » Extensive know-how sharing on shutdown activities
- » Result is improved processes in:
  - › Managing subcontractors' post-project claims
  - › Faster demolition work and scaffolding
  - › Better budget controlling
  - › Regular safety procedures implemented, resulting in more excellence



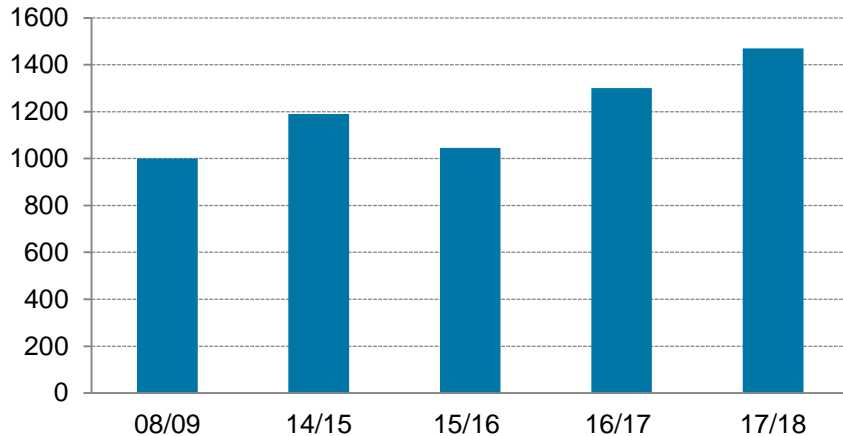


- » FFF project – maximizing capacity to 1.47 million t p.a.: the leading European smelter in concentrate throughput
- » Ability to process more complex concentrates:
  - » Improved fluorine capacity
  - » Improved arsenic throughput capacity
- » Precious metal-rich concentrates
- » Slag cooling project:
  - » Fewer SO<sub>2</sub> emissions from slag cooling
  - » Cu losses in waste reduced

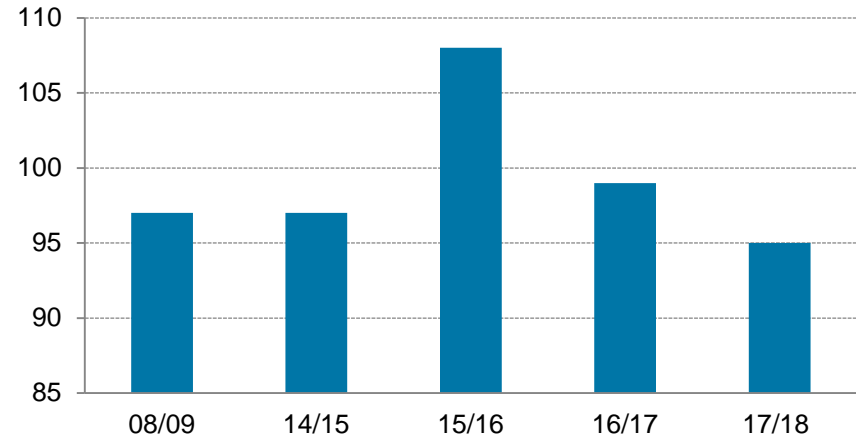
# Improved perspectives for Aurubis Bulgaria: increased throughput capabilities at even better environmental standards (cont.)

- » Consolidation of logistics activities in the port of Bourgas
  - » Improved concentrate intake facilities
  - » Lower Cu losses (positive EBIT and environmental impact)

Capacity usage (selected years)  
(in 1,000 t of fresh concentrate)



Cost evolution (selected years)  
(cash cost in €/t of smelted concentrate)



Aurubis will further improve the position of its Bulgarian operation as one of the most efficient plants in the copper industry



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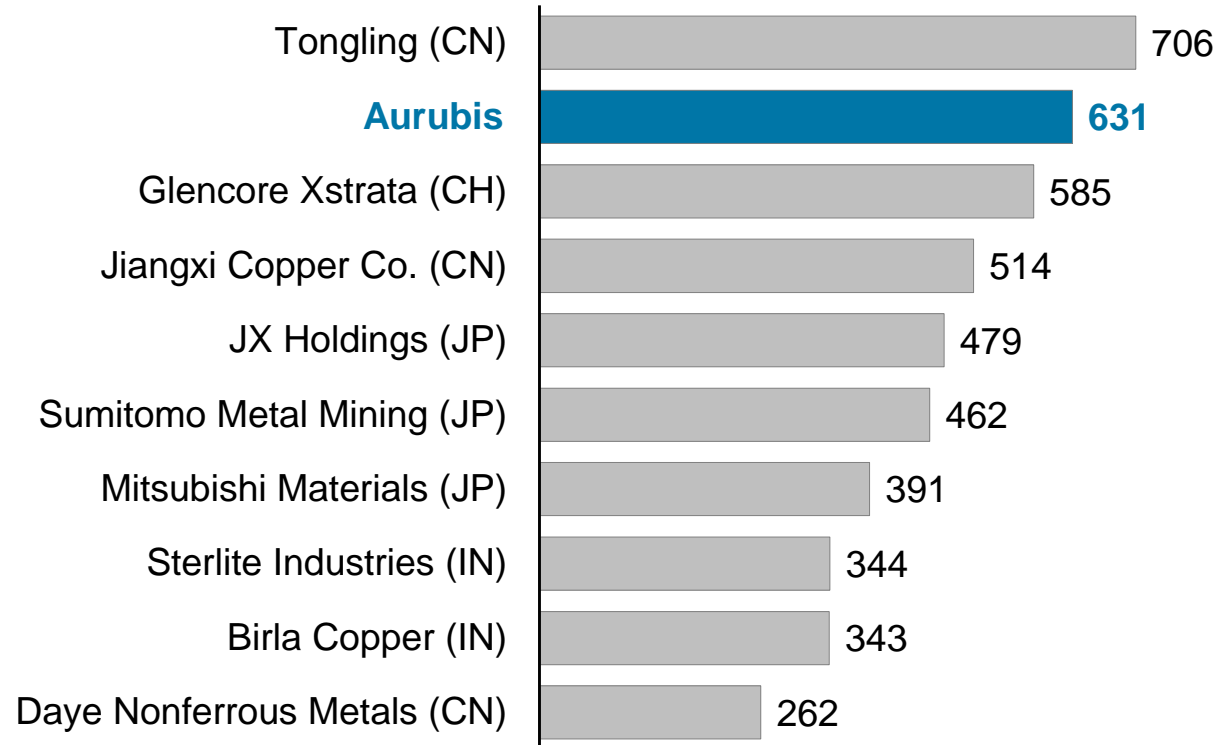


Aurubis is the second largest buyer of custom concentrates worldwide (7.9 % market share)



## Copper production from custom Cu concentrates

(2015; per 1,000 t Cu content\*)



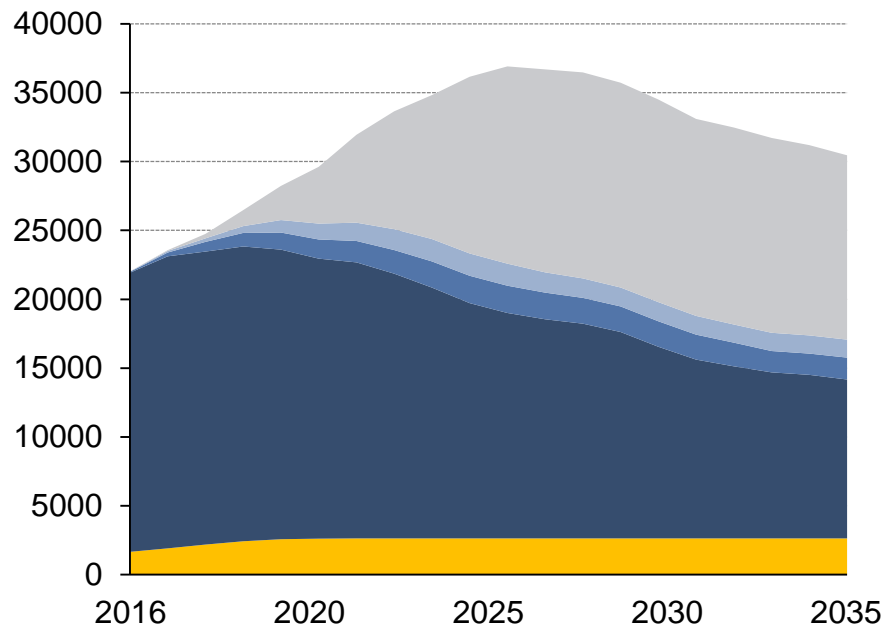
\* Copper production from concentrates from non-controlled mines

Source: Wood Mackenzie 02/2016, Aurubis Annual Report 14/15

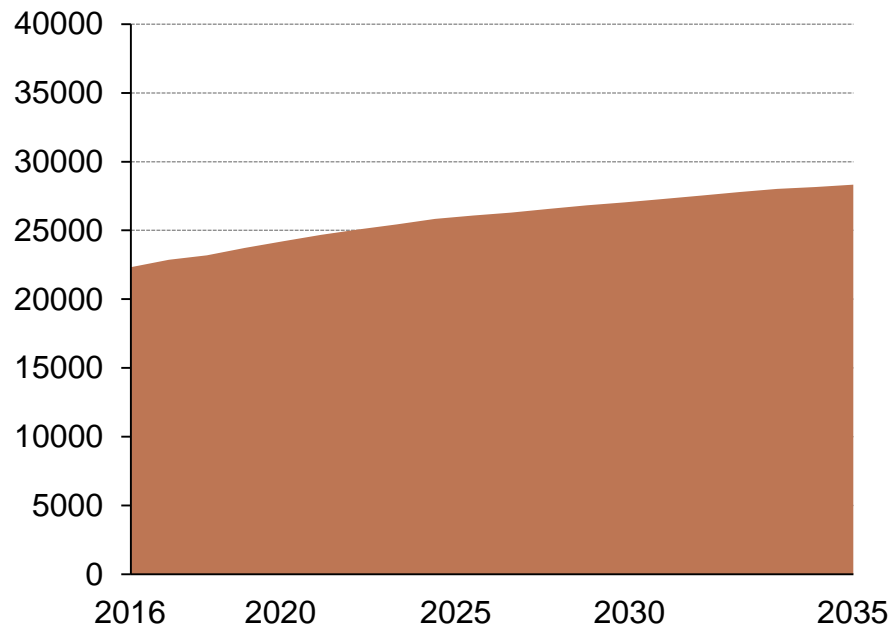
The global copper supply/demand balance is in favor of smelters in the short term

### Copper production from mining and secondary materials

(Cu in concentrate & leach, in kt)



### Refined copper consumption forecast (Cu in concentrate & leach, in kt)

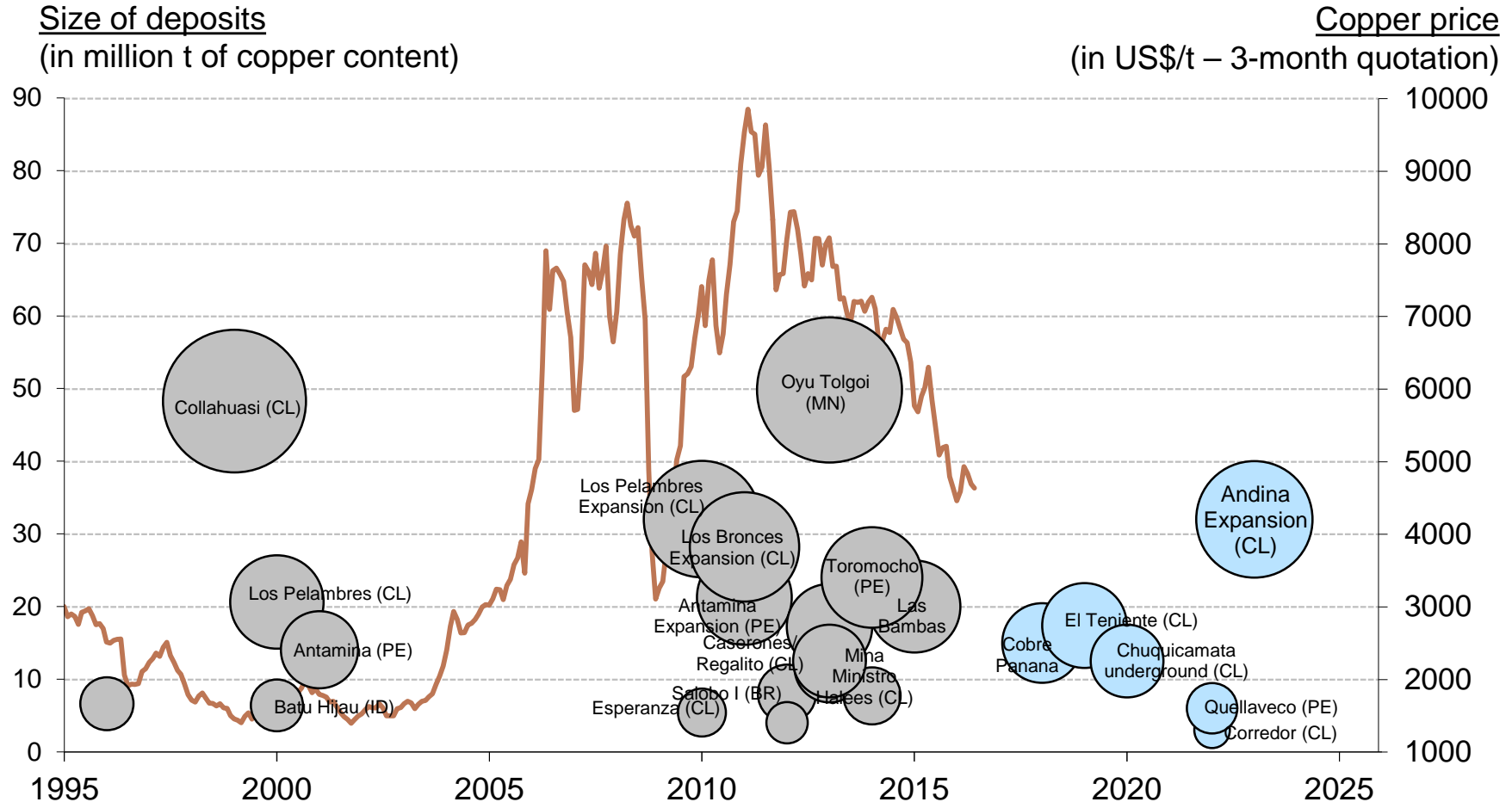


- Possible mine projects
- Probable mine projects
- Highly probably mine projects
- Base case production capability
- Cu from secondary materials

Source: Wood Mackenzie Q2 2016



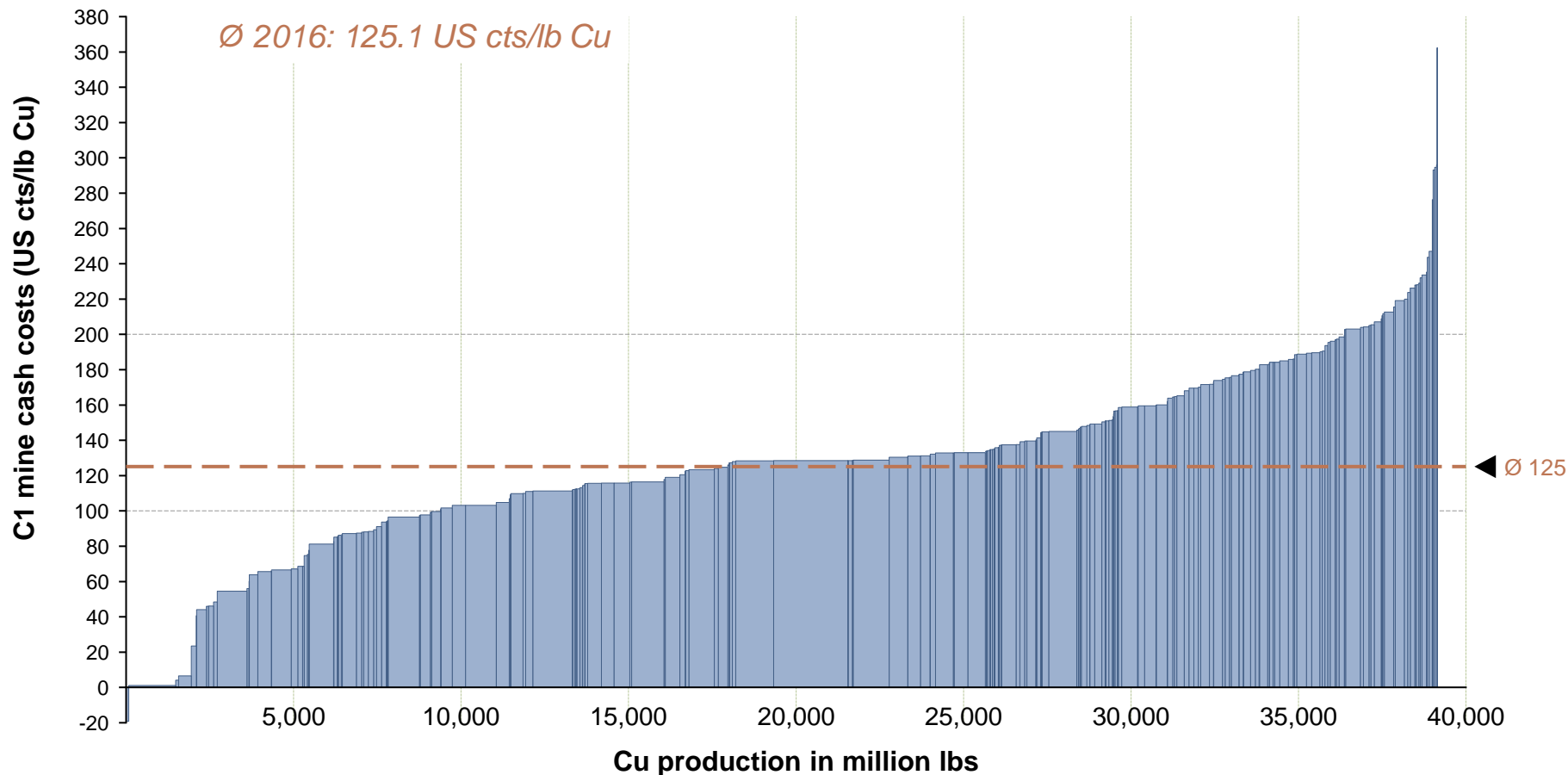
# Additional projects will start up production before 2025 and replenish the supply pipeline



Source: company data

The risks of closure posed by a low copper price have been decreasing lately

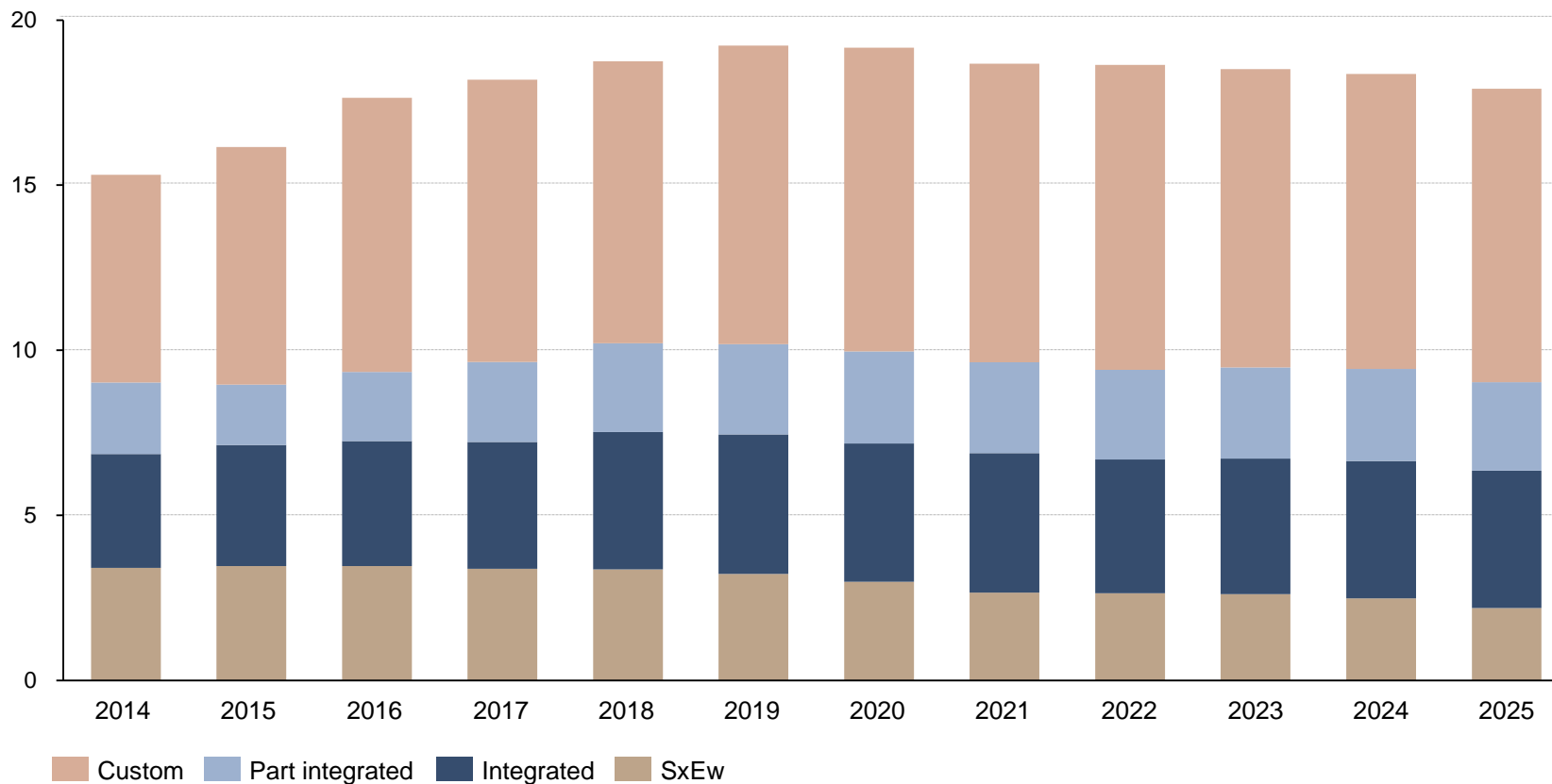
## Global copper mine cash cost (2016)



Source: Wood Mackenzie 2016

The increase in copper concentrate supply has been driven by custom mines in which Aurubis is a player

## Copper concentrate allocation forecast (paid Cu – in million t)

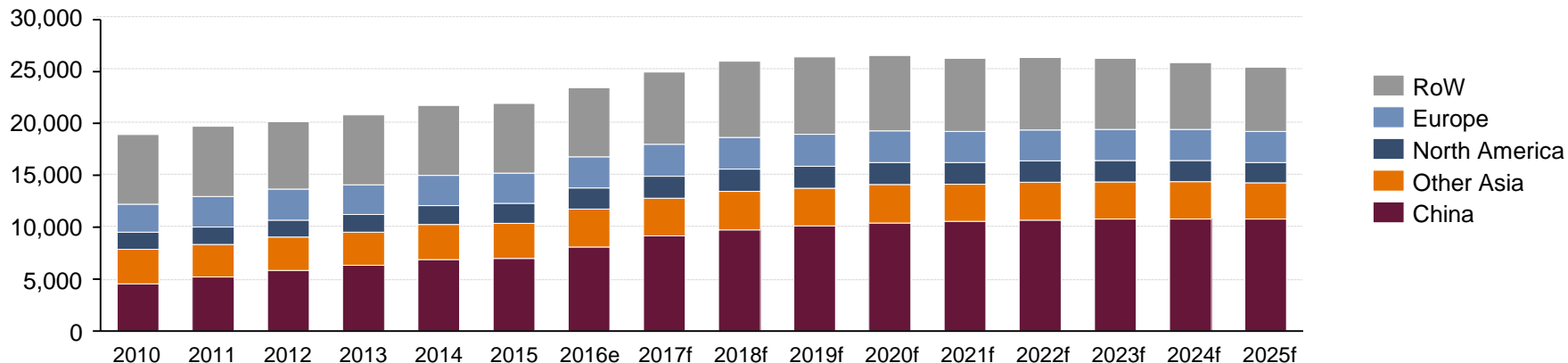


Forecasts include base case and probable projects

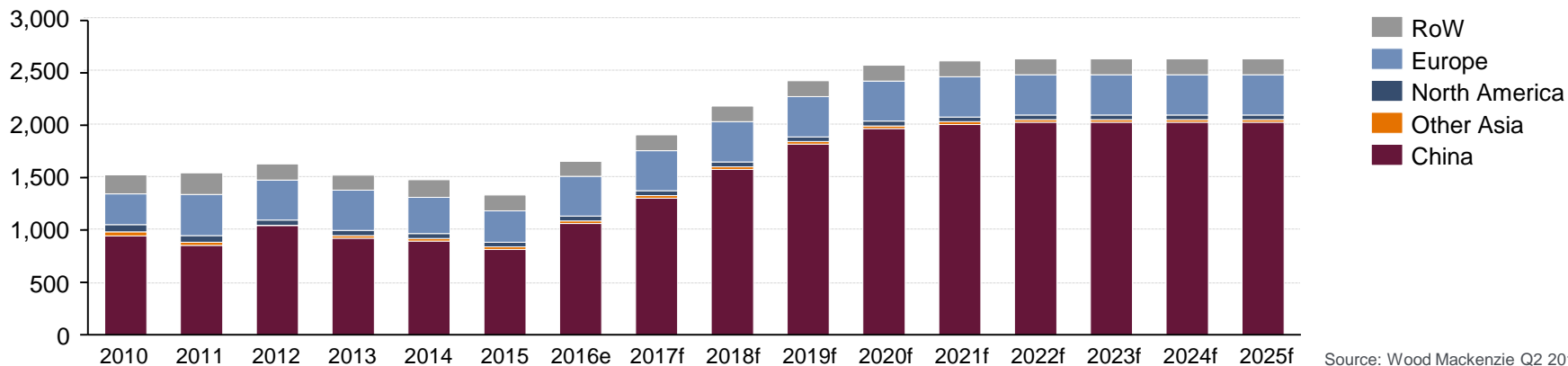
Source: Wood Mackenzie 2016

The increase in Cu production from secondary materials in China is a positive trend for European producers

Global copper refinery production (in kt Cu including production from scrap)

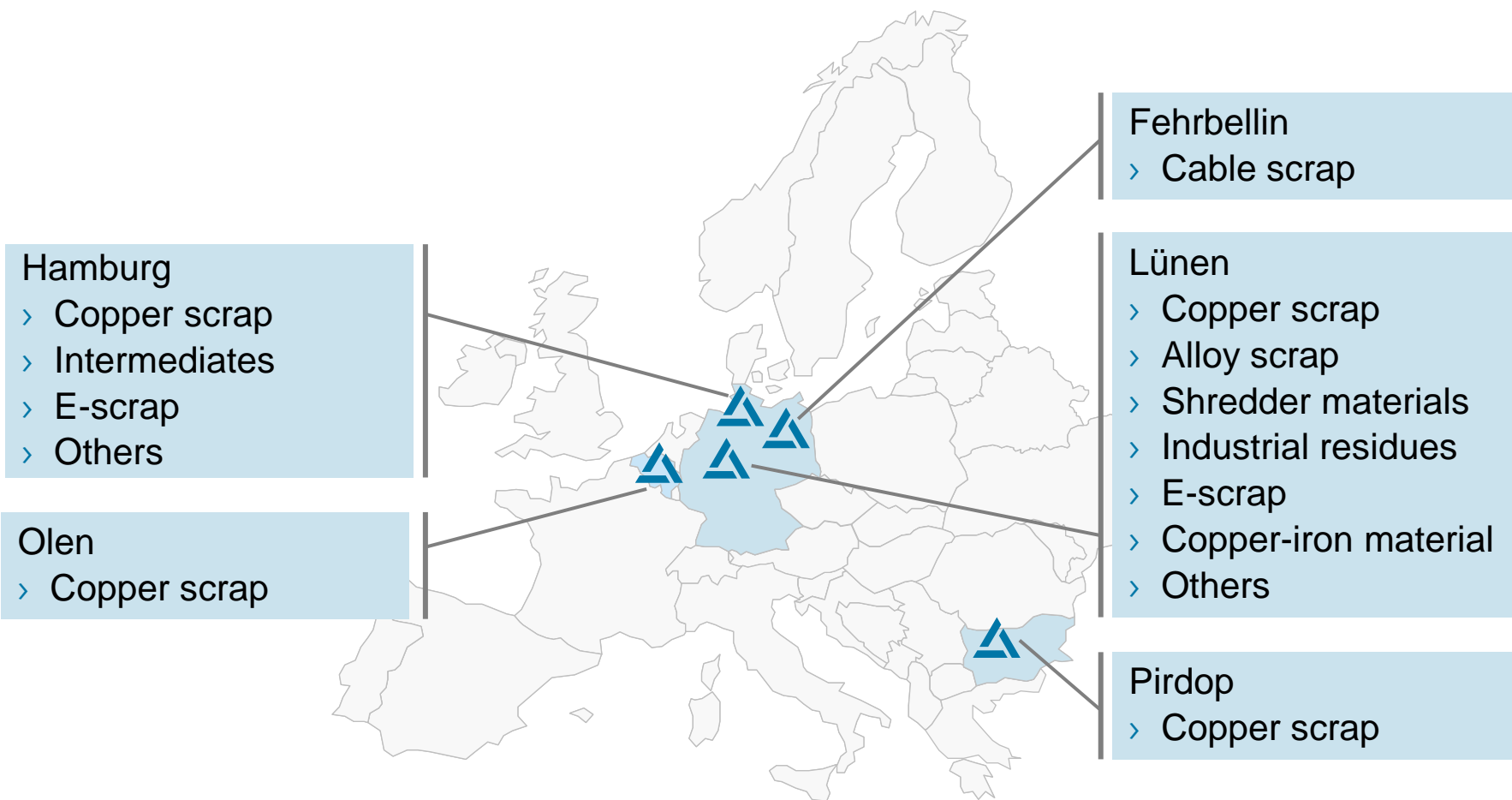


Global copper refinery production from secondary materials (in kt Cu)



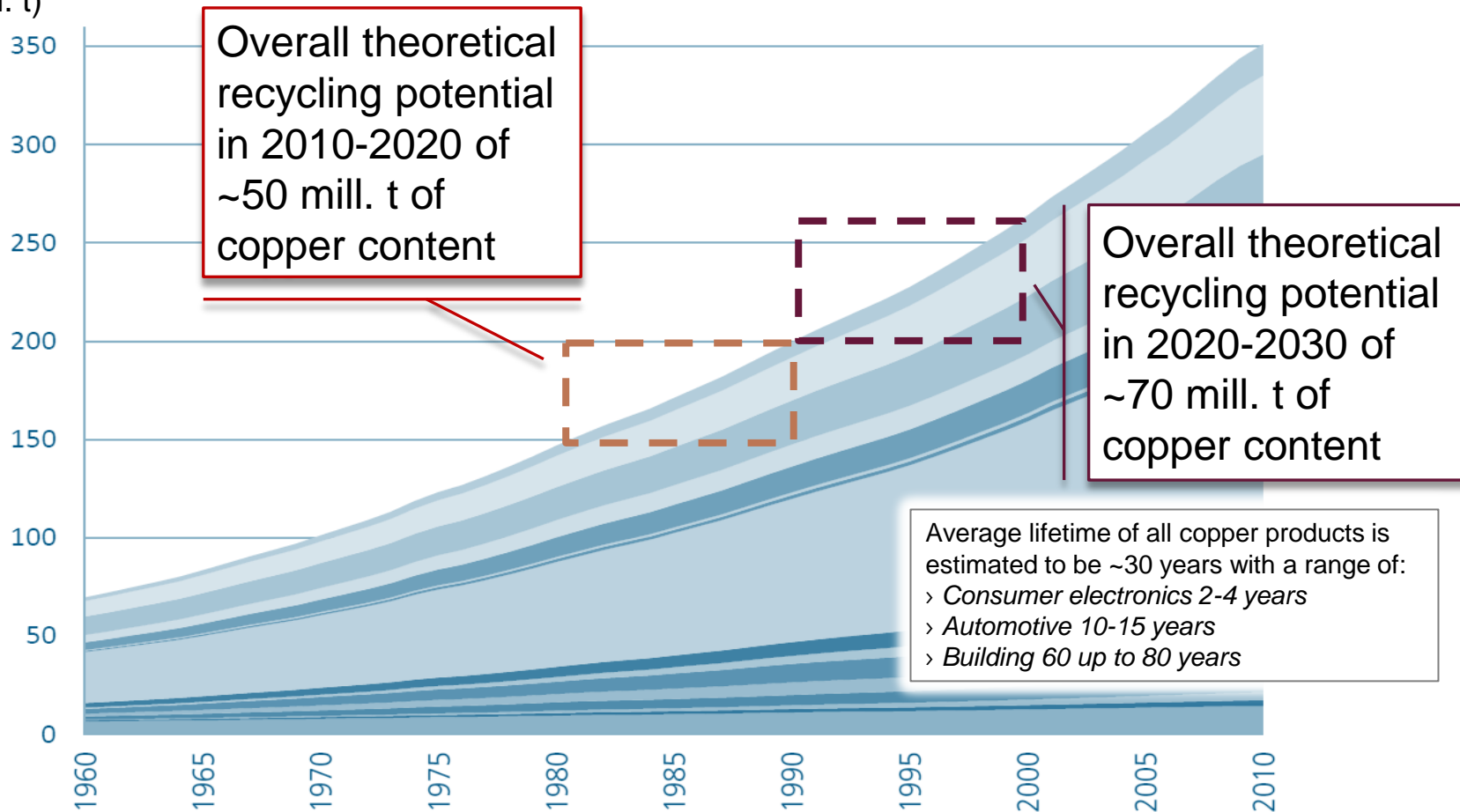
Source: Wood Mackenzie Q2 2016

Aurubis treats more than 730 kt of all kinds of recycling materials p.a.



# Global copper scrap market will increase over the next decades

(in mill. t)



Source: Fraunhofer ISI, Global Copper Flow Model; Aurubis

Overall, copper scrap will increase; however, "quality" of copper scrap will change

	CU content	Scrap category			Life cycle	
	1950 low		No2	Shredder	WEEE	60-80 years
	2015 high* -> Trend for substitution					
	1990 ~9 kg/car		No2	Shredder	WEEE	10-15 years
	2015 ~ 25 kg/car					
	2000		No2	Circuit boards	WEEE	2-4 years
	2015					

\* Increase of copper in buildings due to replacement of lead tubes, installation of central heating systems and substantial electricity supply (beginning 1970s)



Complexity of recycling will increase over the next decades

## E-scrap

*a complex mix of*

Ag	Au	Pt	Pd
Cu	Ni	Sn	Al
Fe	Pb	Sb	Bi
In	Be	Hg	Cd
As	Br	Cl	F
Rare earth elements			
Plastics/organics			
Glass/ceramic			

- » Complex material, especially EOL electronics (end of life), combines **values from different metals** and/or other materials
- » **Decreasing copper content** (miniaturization and new technologies/production process efficiency) and **increase of other elements** require a successful **management of impurities**
- » Upcoming “new applications” (complex materials) require “**new recycling technologies**”

Multi-metal recycling is required to enable input of complex raw materials and high metal recovery

Aurubis already processes a variety of different and also complex recycling materials

Raw Material

Copper scrap



Residues



Shredder materials



Printed circuit boards



Copper-iron



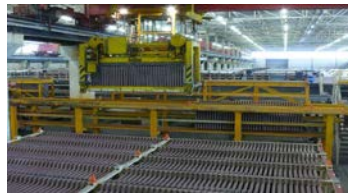
Slimes



E-scrap

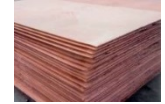


Processing



Products

Copper cathode Grade A



Nickel-sulfate



SnPb alloy



Precious metals



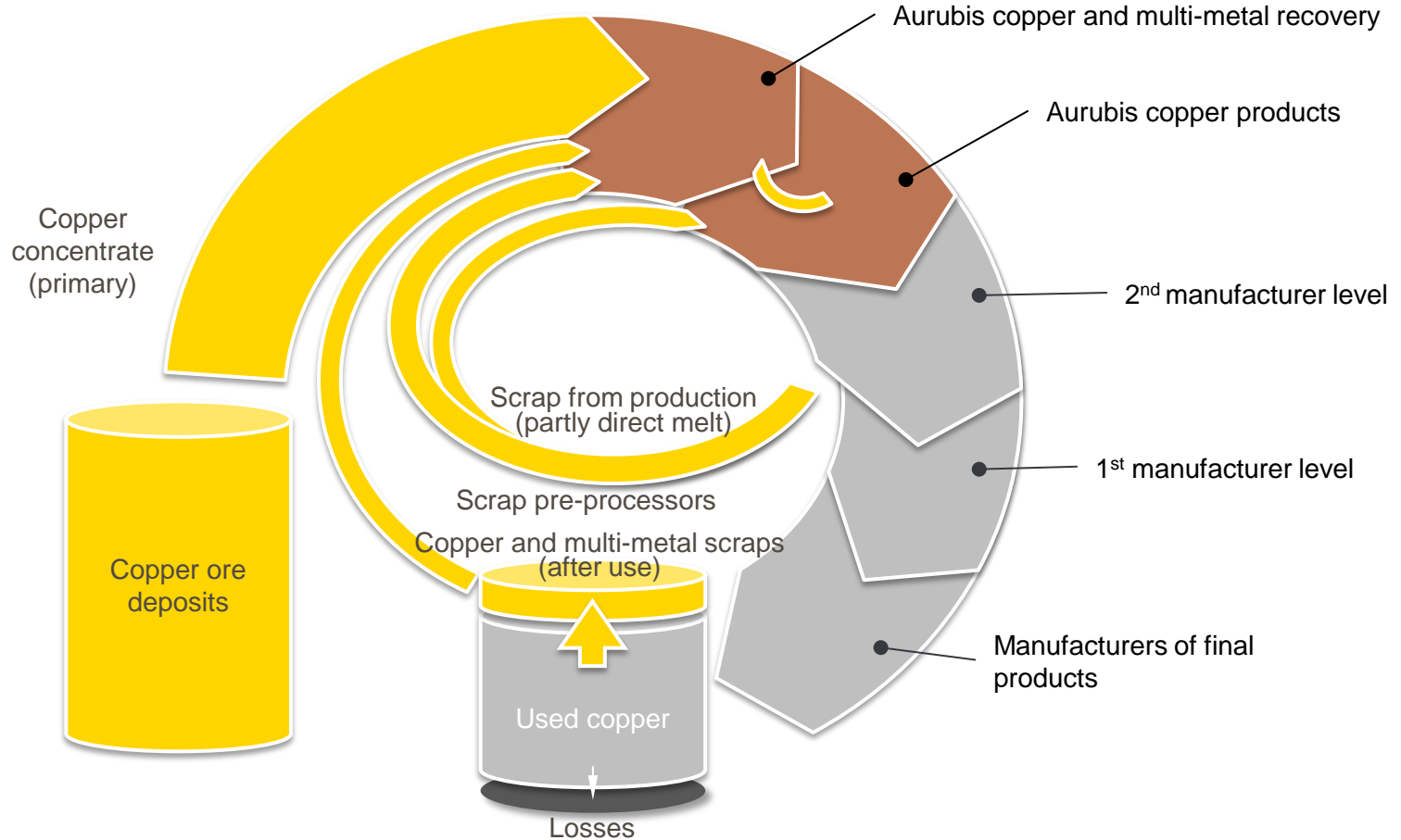
KRS Oxide



Ferro-silicate sand



Closing the loop is necessary and actively pursued by Aurubis but will not replace the need for Cu from primary material in the near future





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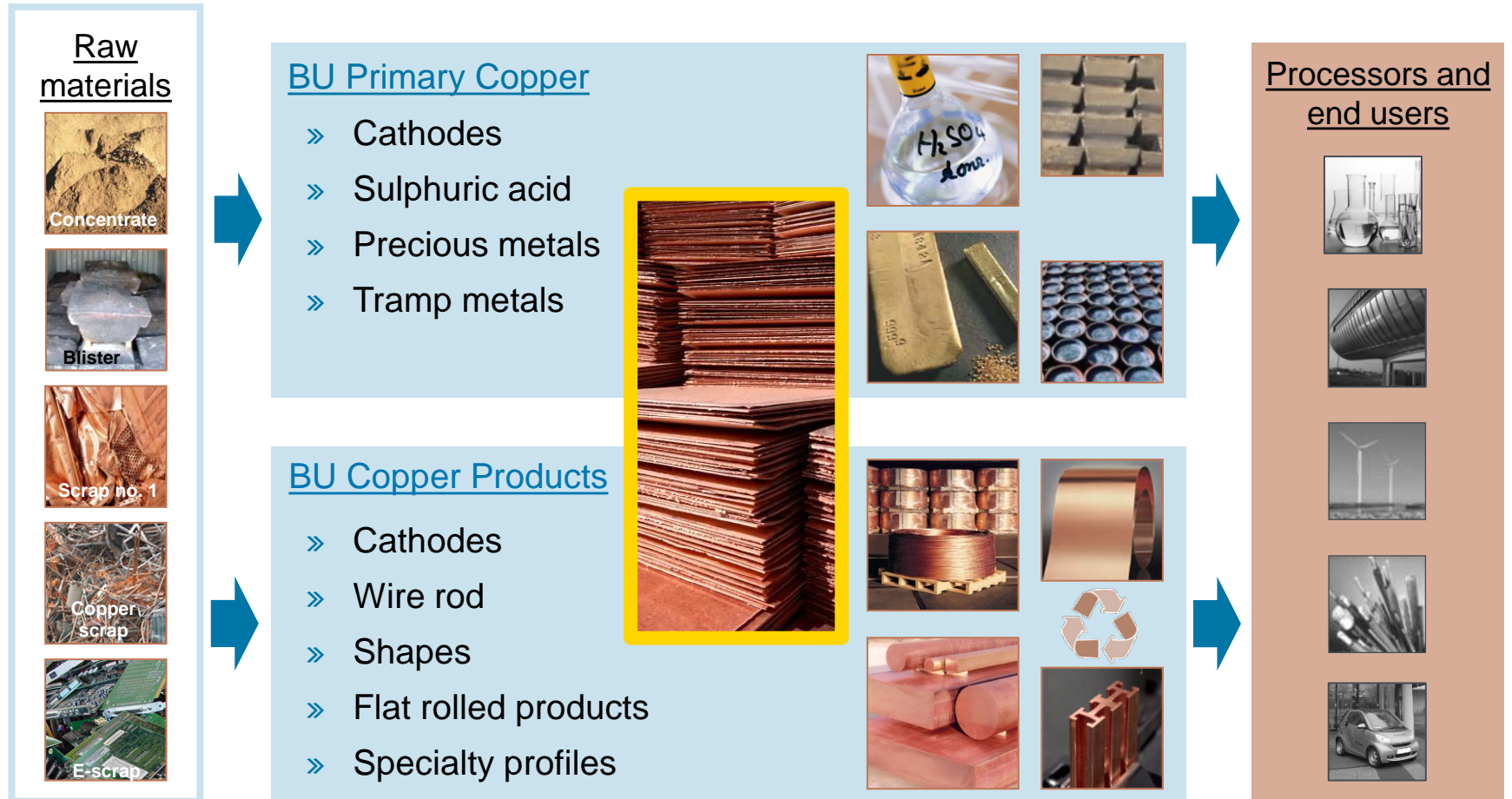
Stefan Gröner, Hans  
Rosenstock, Stefan Boel

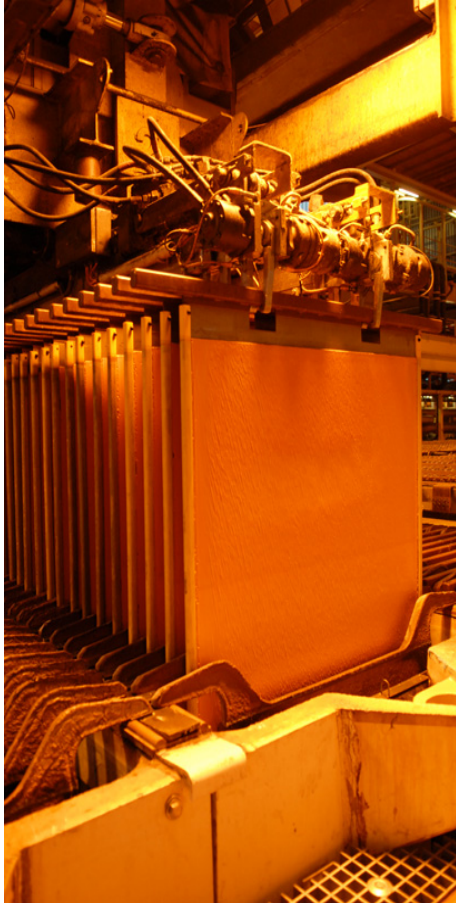
Earnings Improvement Project

Thomas Bünger

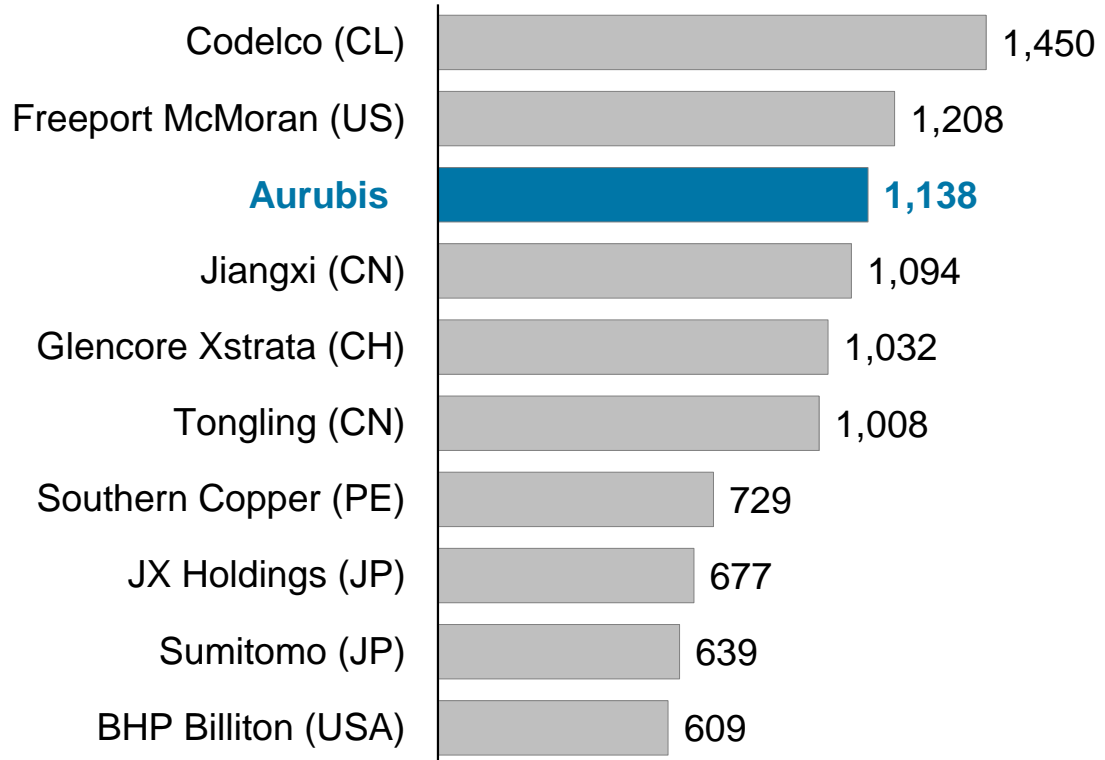
Closing remarks

Jürgen Schachler





## International cathode production (in 1,000 t)



Source: Wood Mackenzie 06/2016, Aurubis Annual Report 14/15

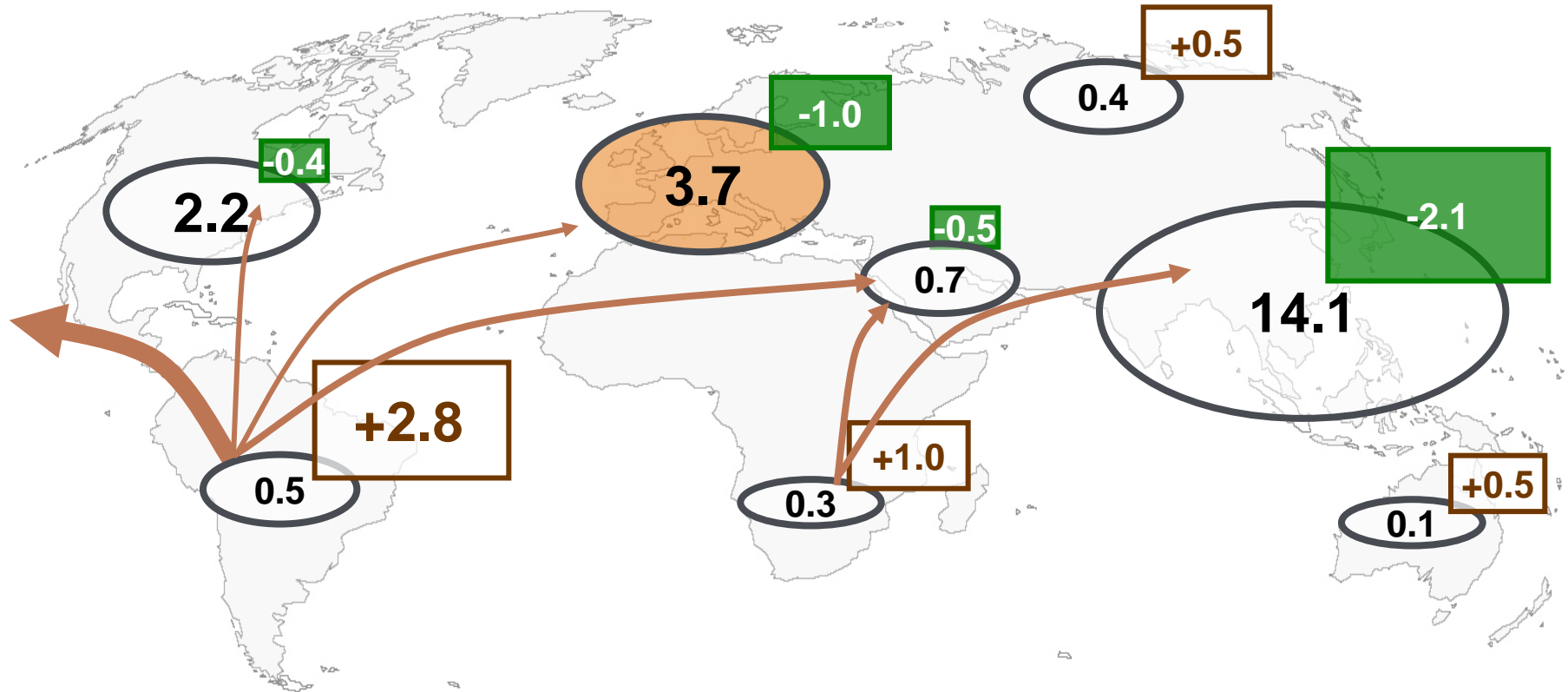


- » Aurubis produces approx. 1.14 million t of cathodes in 4 refineries in 3 European countries:
  - » Germany (Hamburg, Lünen);
  - » Belgium (Olen);
  - » Bulgaria (Pirdop)
- » We buy external cathodes globally
- » We sell to internal and external customers:
  - » Internal customers: 4 Rod plants in 3 European countries (Hamburg, Emmerich, Olen, Avellino), 1 Shapes plant in Hamburg and FRP plants
  - » External customers: diversified customer portfolio in different regions worldwide
- » We balance cathode production and rod production within our different sites
- » We ensure optimized stock levels and cathode flows within the Aurubis Group through our trading activities
- » We follow our marketing strategies and proactively adjust them to new trends, global economic developments and market fluctuations

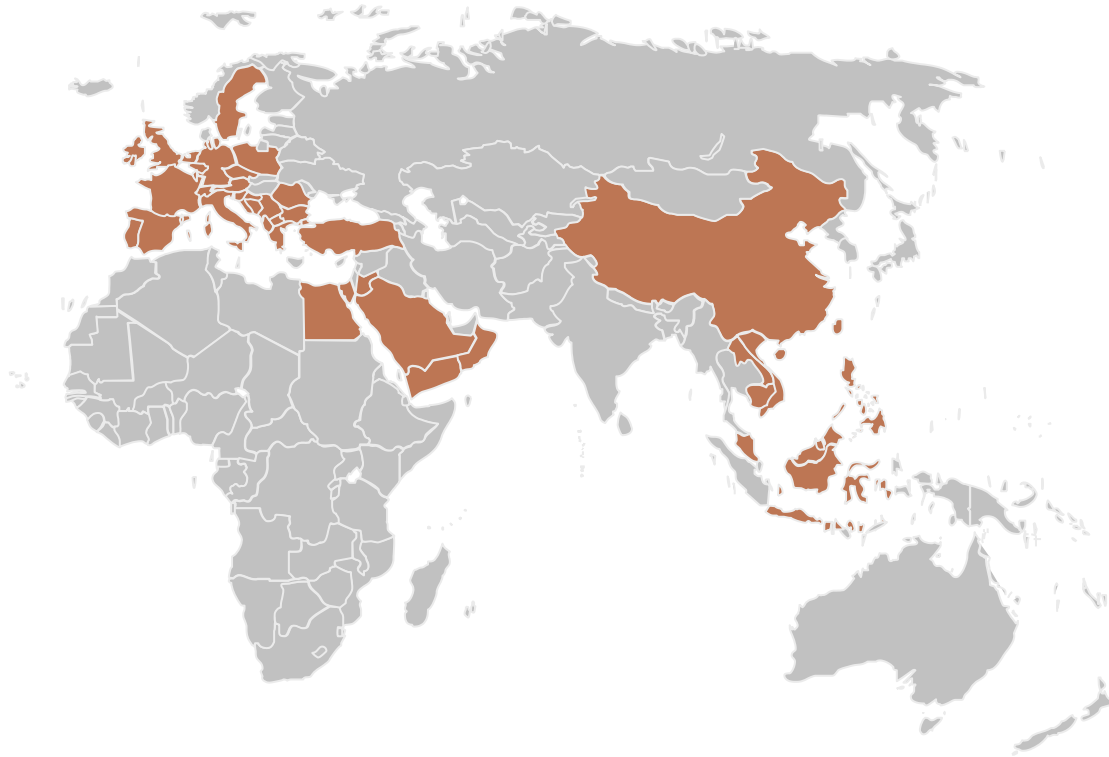


# Aurubis is in the middle of key cathode consumption areas

- Copper demand by regions 2016 (in million t)
- Copper surplus / deficit 2016



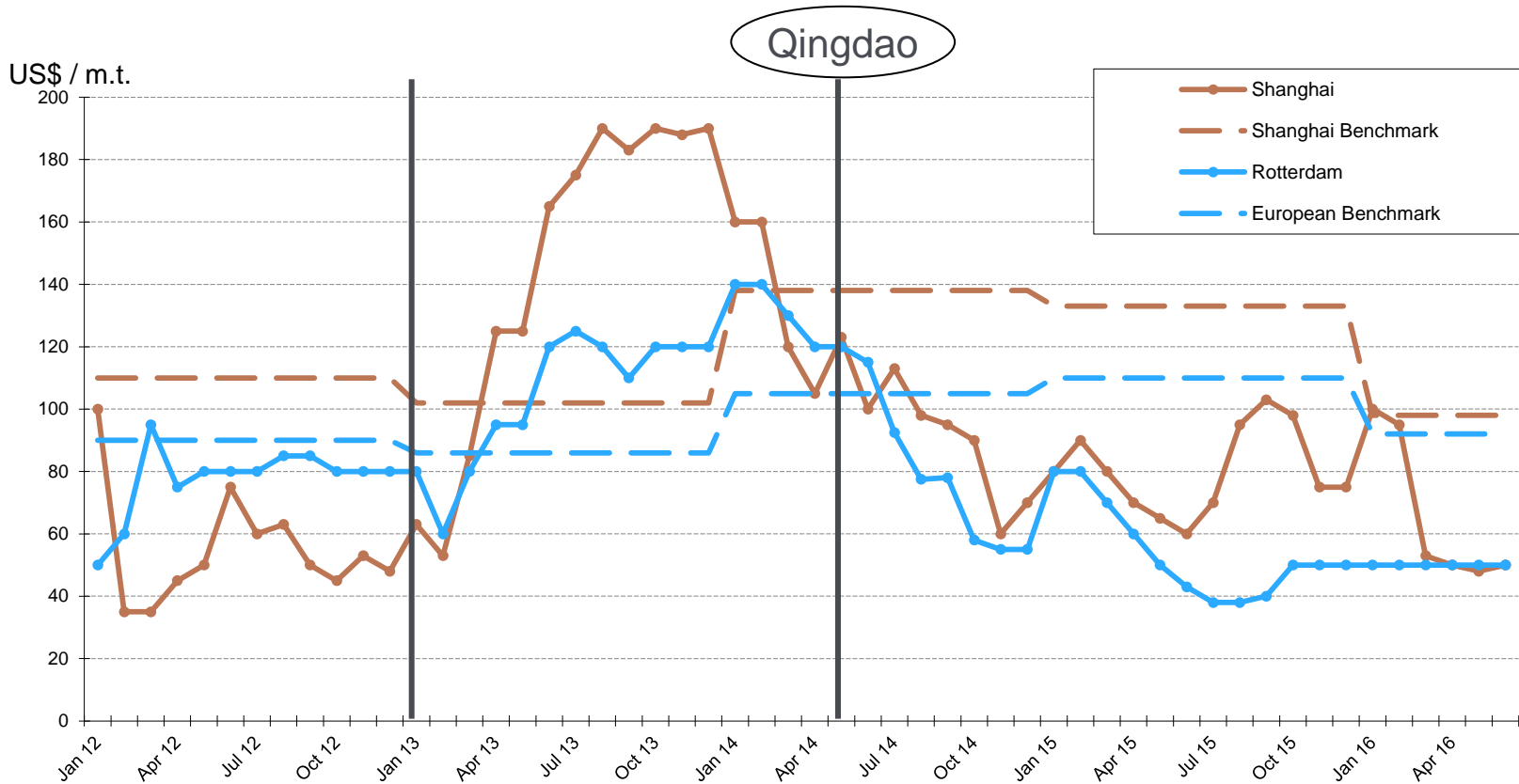
# Regional premium arbitrages and logistics costs drive our sales strategies



Aurubis cathodes currently have 5 main sales regions

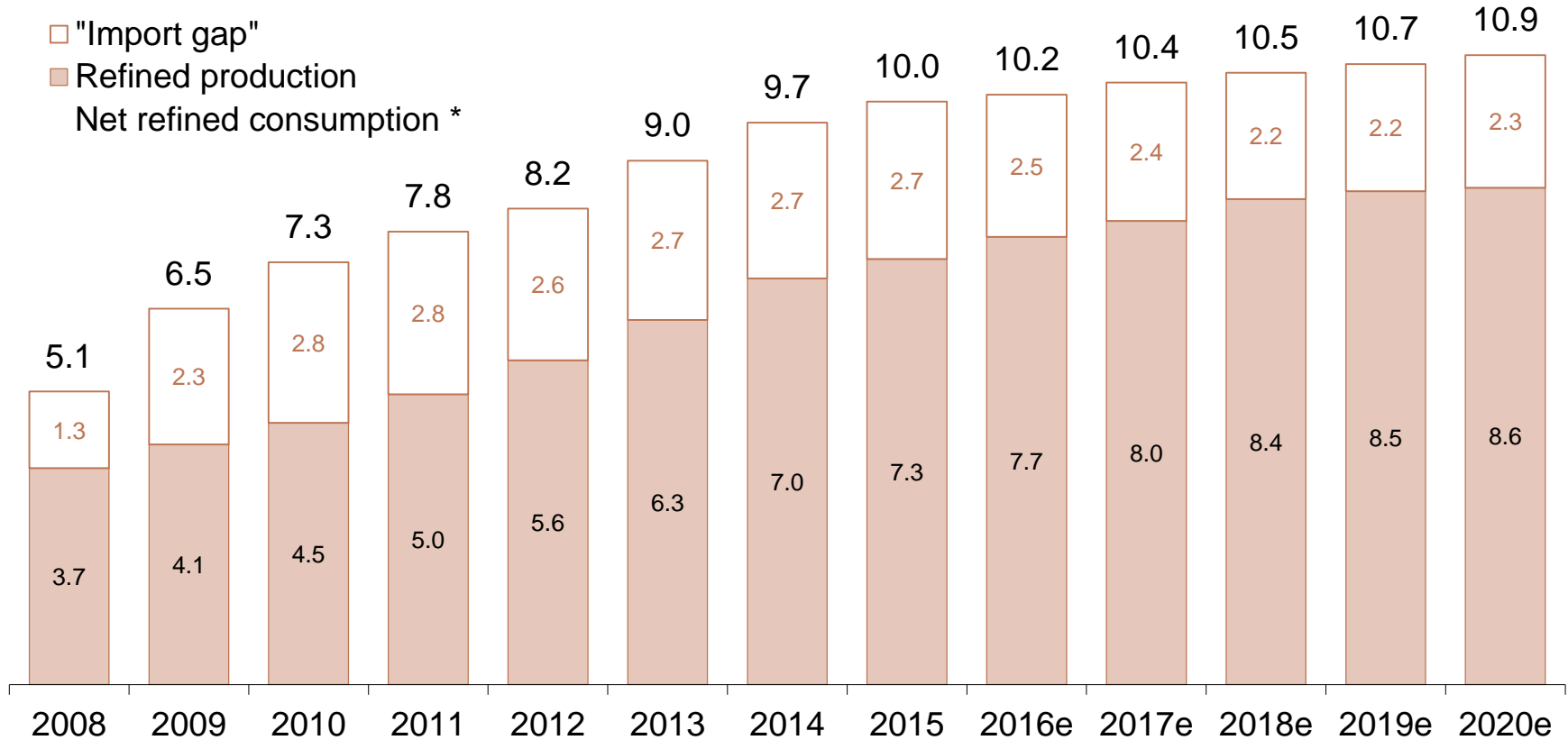
- » Western Europe
- » Southeastern Europe
- » Turkey
- » MENA
- » Asia

# Adverse premiums and low logistics costs in China support premium optimization for Aurubis cathode sales



# China remains a big importer of refined copper

## Chinese refined copper supply / demand (in 1,000 t)

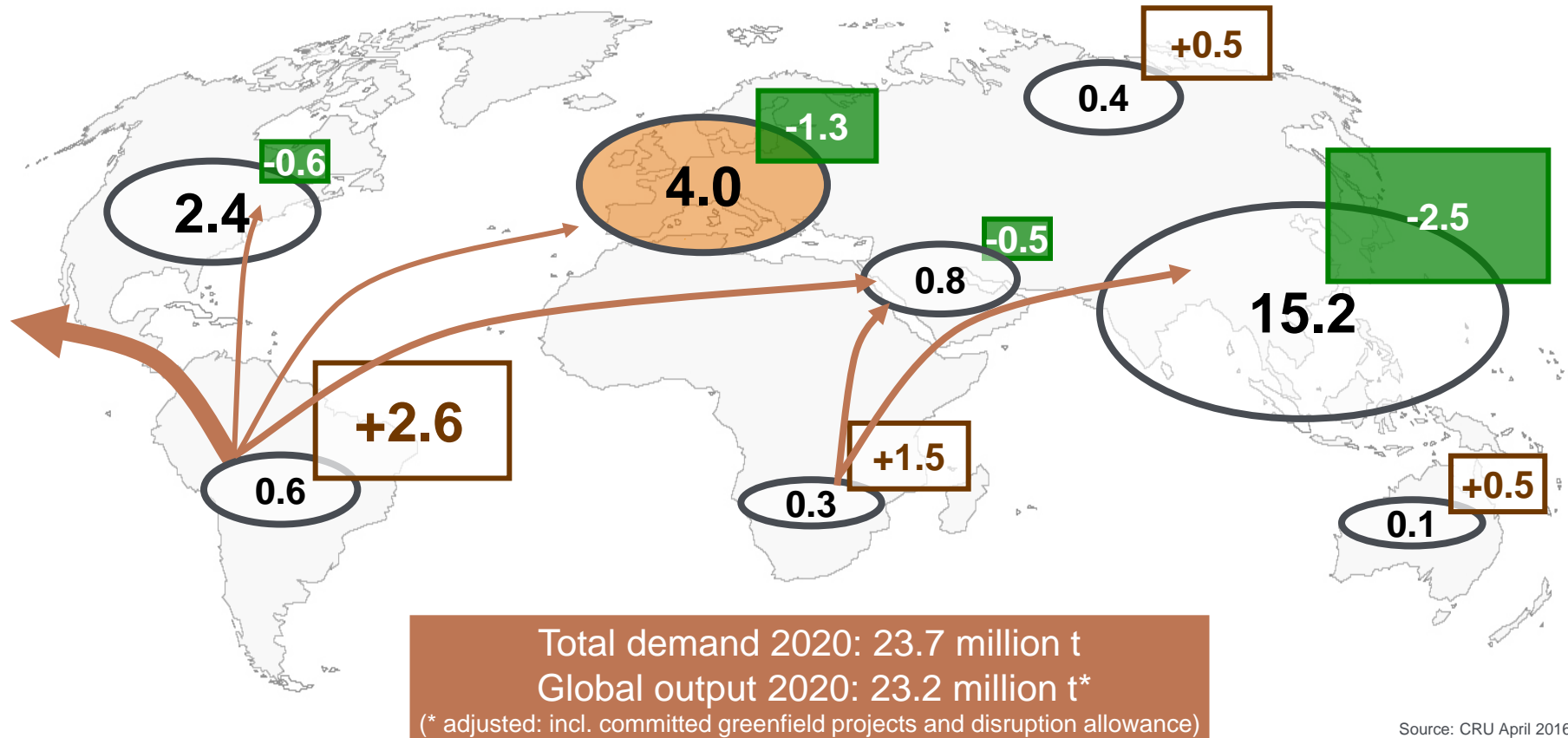


\* Net refined consumption: consumption w/o government purchases

Source: CRU, Apr 2016

# Significant import deficit remains in Europe and Asia in 2020

- Copper demand by regions 2020 (in million t)
- Copper surplus / deficit 2020





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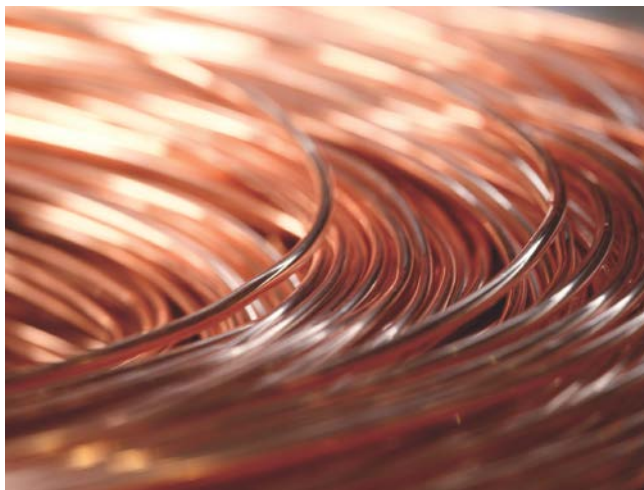
Thomas Bünger

Closing remarks

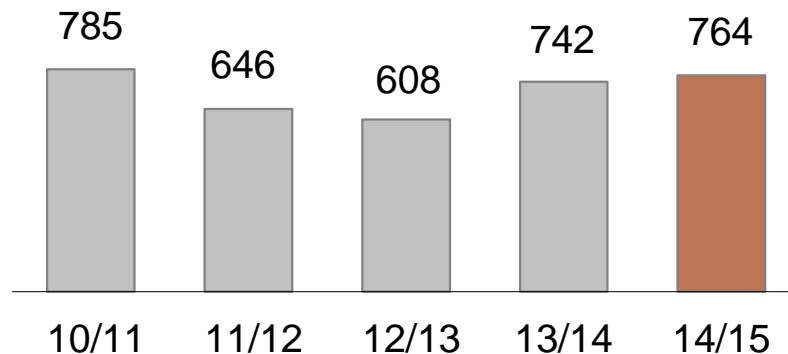
Jürgen Schachler



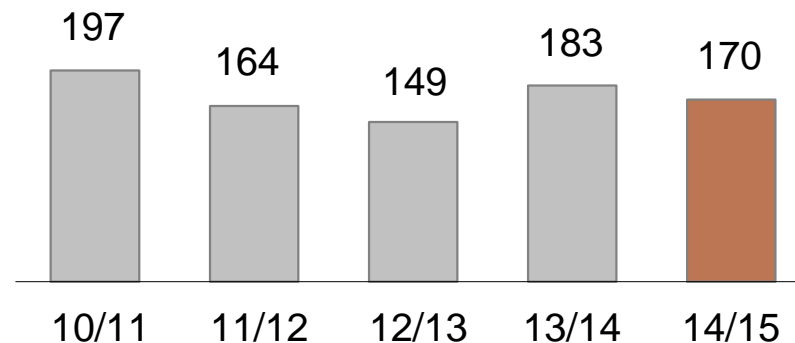
Aurubis is no. 1 worldwide in Rod production and no. 1 in Europe for Shapes



Rod production (in 1,000 t)

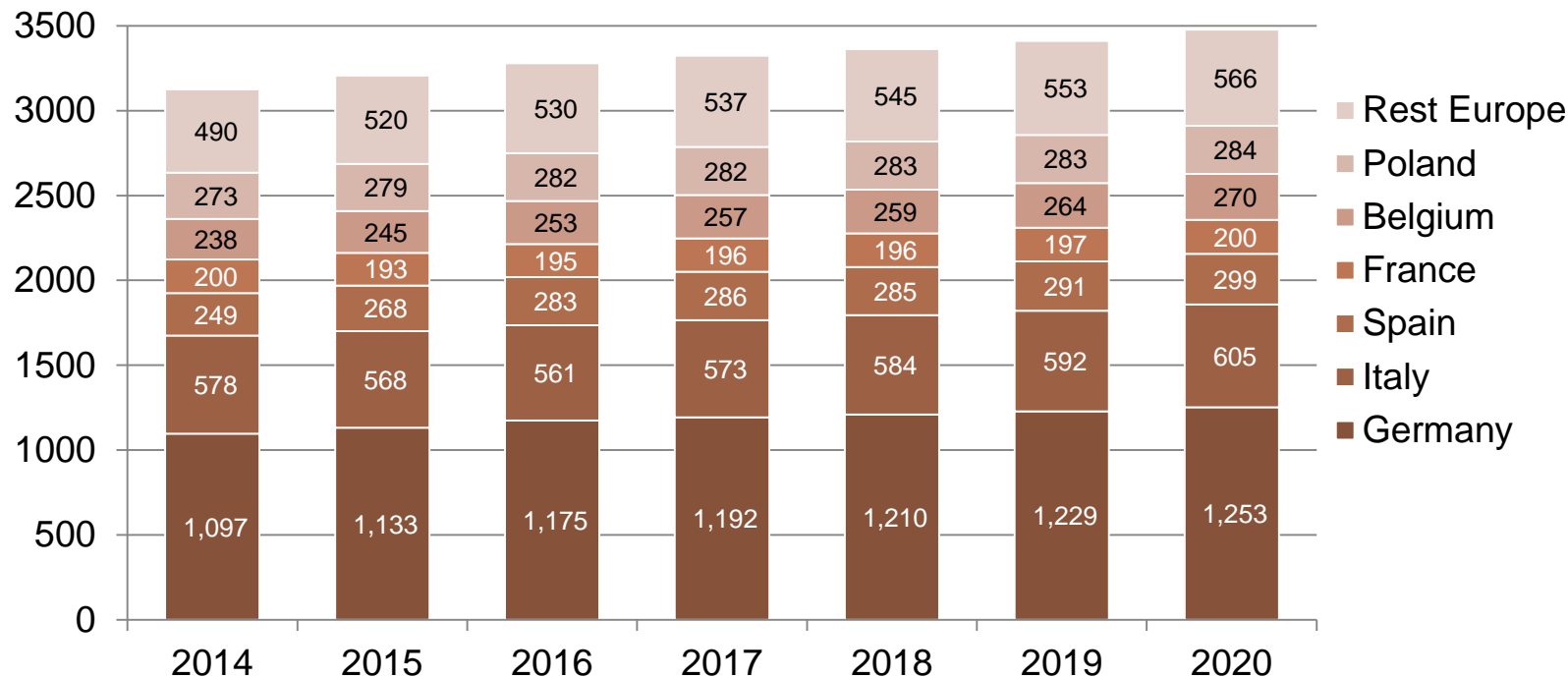


Shapes production (in 1,000 t)



European demand for copper semis is expected to continue to rise

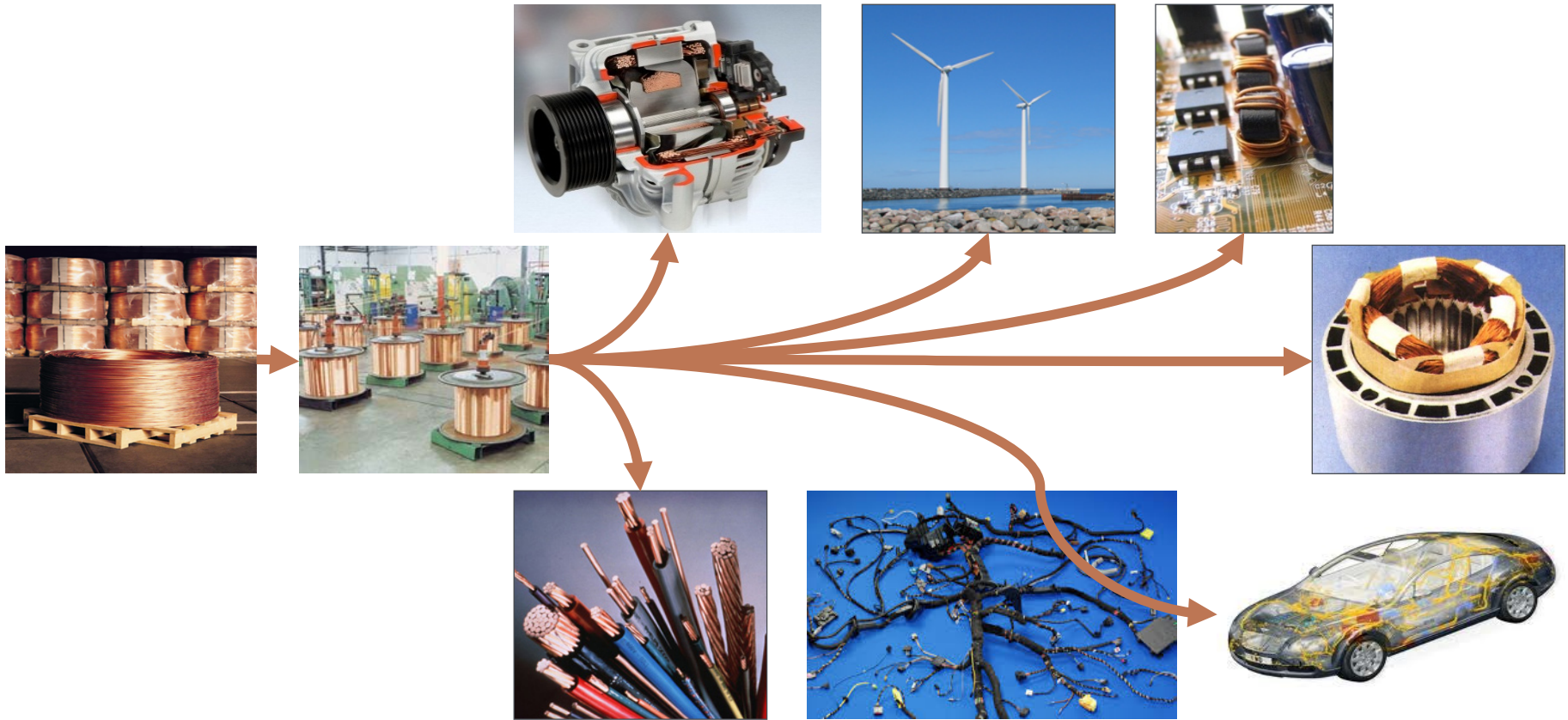
European demand for copper semis (in 1,000 t)



Source: CRU Copper Market Outlook 07/2016, figures excl. Russia

Copper wire rod and copper shapes are the pre-product for nearly all copper applications

# Most copper applications start with wire rod



Cable, magnet wire and automotive are the main application sectors



### Capabilities

- » Flexibility due to size –  
4 wire rod plants in Europe
- » Customer focus –  
360° support
- » Highest product quality
- » Renowned for reliability

### Environment

- » Latest filter technologies  
installed to clean the shaft  
furnace off-gases
- » Closed environment
- » Direct water cooling system
- » EHS benchmark

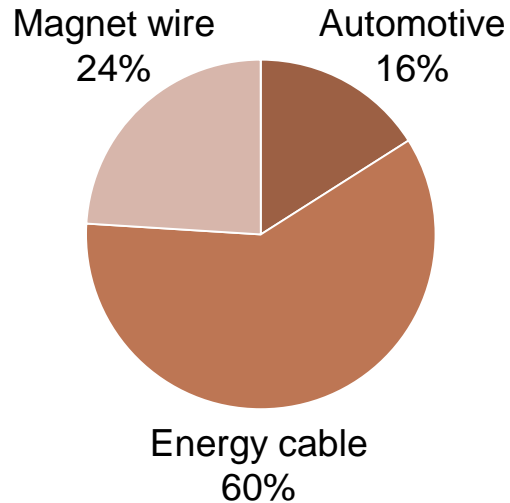
### Research & product development

- » Benchmarking among the four lines
- » Alcohol pickling
- » Wax-free rod
- » Jumbo coils
- » Alloys for special applications

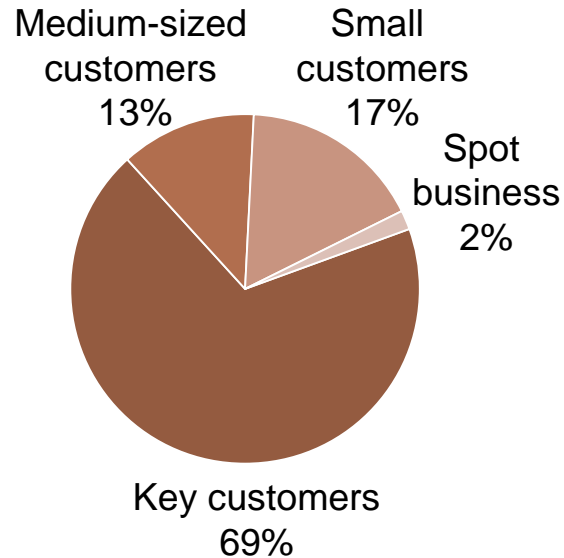
European market leader with 29% share

# Key facts about AURUBIS ROD (2015) market shares

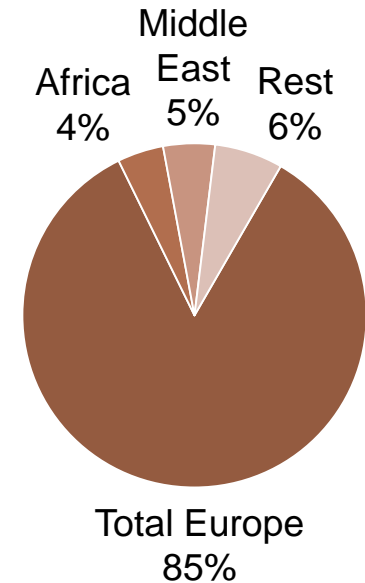
## Industry split



## Volume by customer group



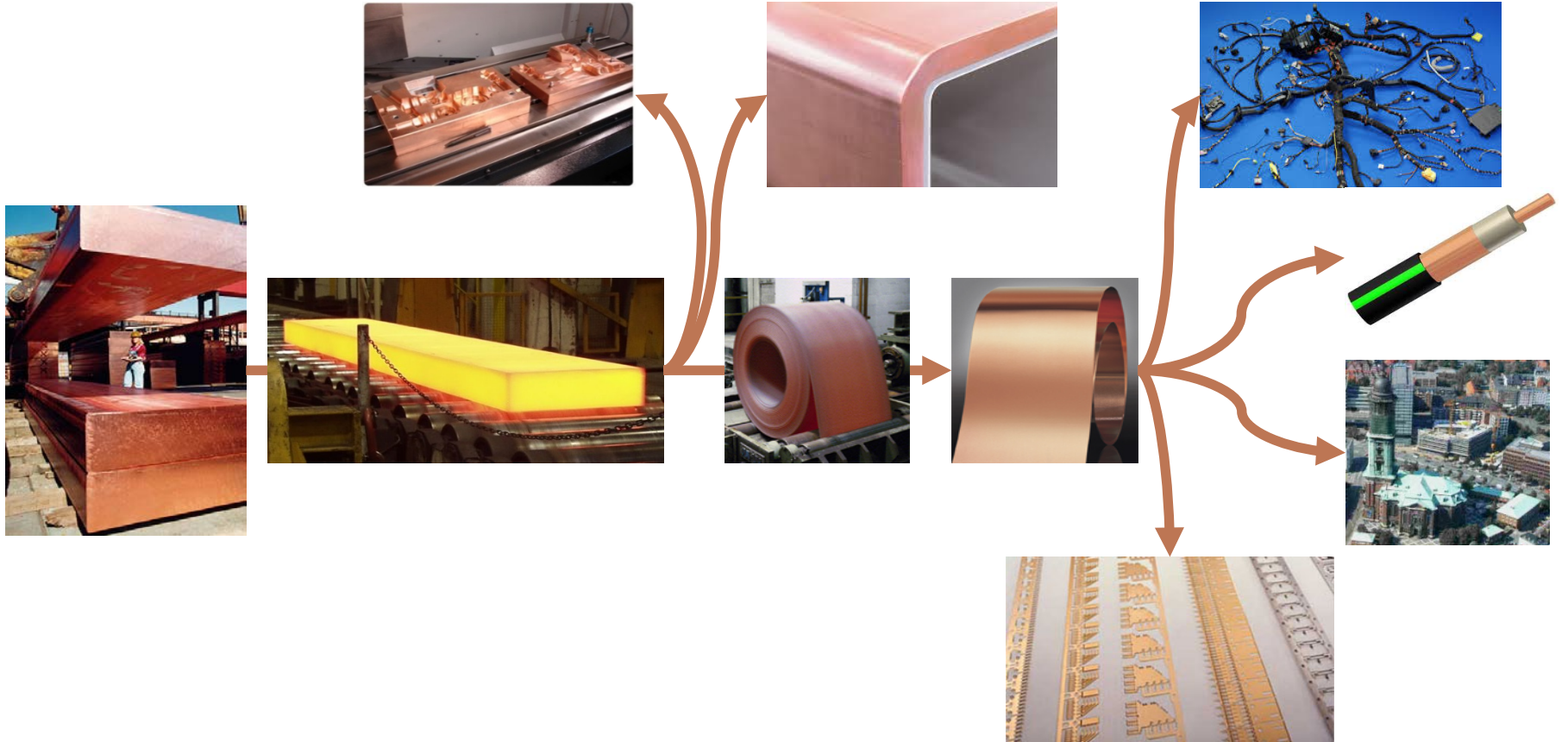
## Deliveries by region



AURUBIS ROD is delivered to over 200 active customers in over 50 countries

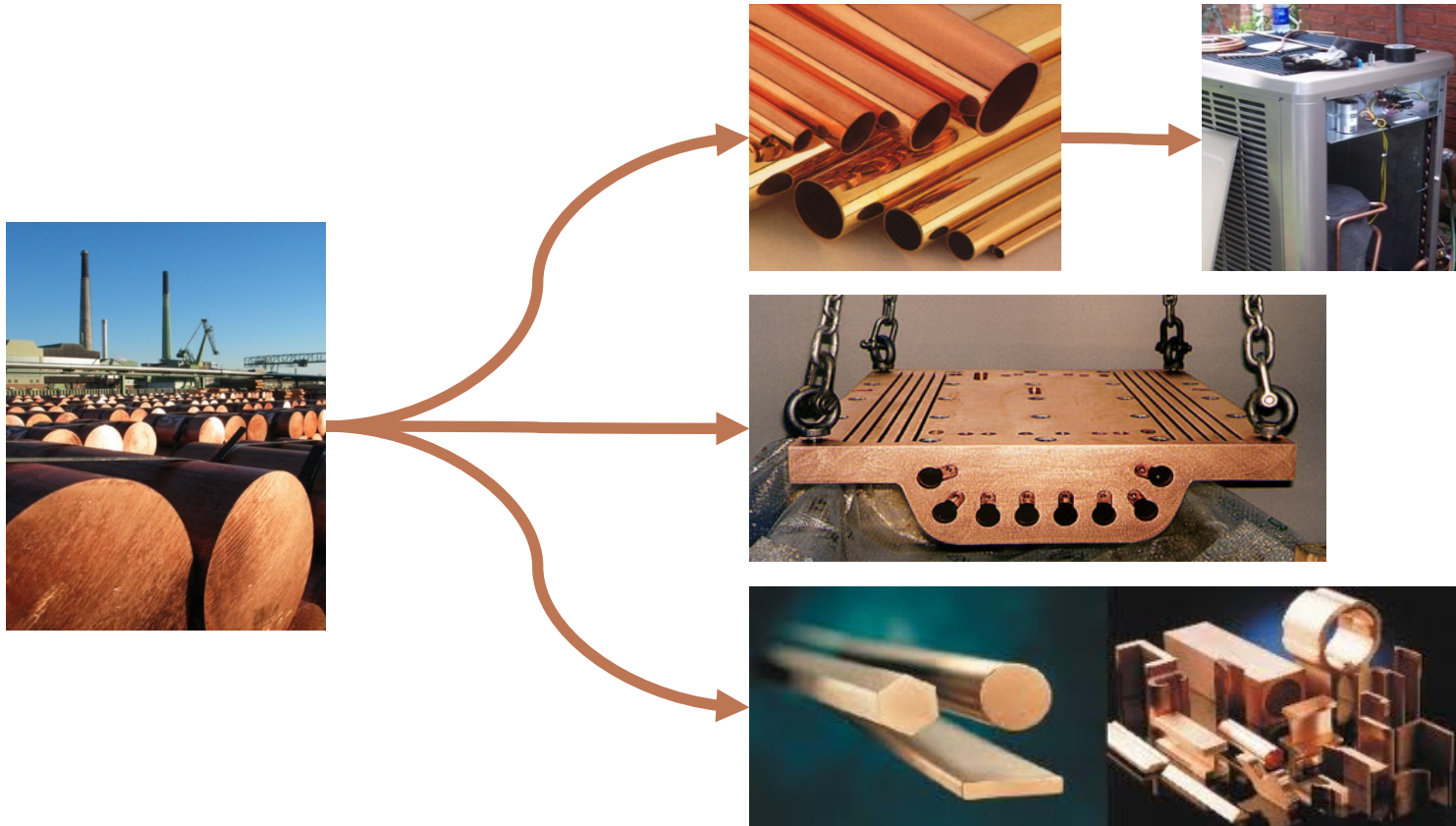


# Copper cakes for rolled products and piece parts



Different copper grades as well as individual geometries are crucial

# Copper billets for tubes, forgings and sections



Aurubis has focused early on specialties for industrial applications



### Capabilities

- » Flexibility and reliability
- » Highest piece weights and quality standards for both billets and cakes
- » Oxygen-free benchmark
- » Own technologies

### Environment

- » Latest filter technologies installed to clean the shaft furnace off-gases
- » Closed direct water cooling system
- » EHS benchmark

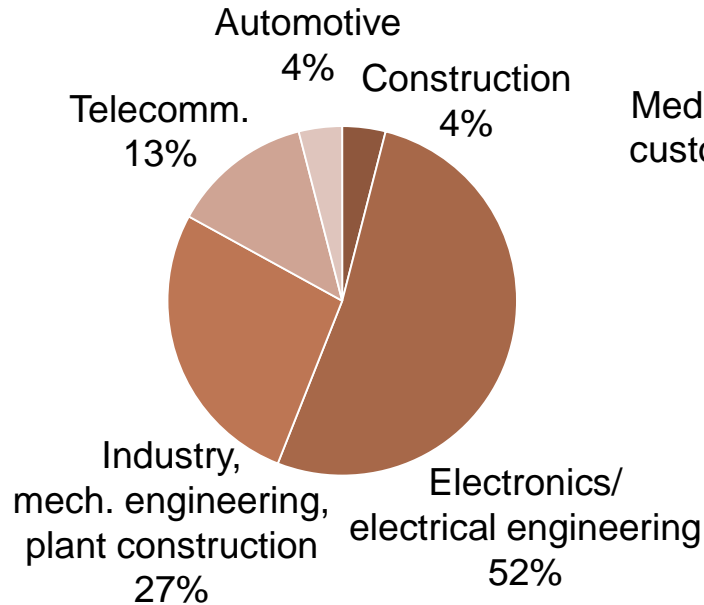
### Research & product development

- » Cooperation with universities
- » Simulation of solidification process
- » Development of new Cu grades and high-performance alloys based on Cu-OFE

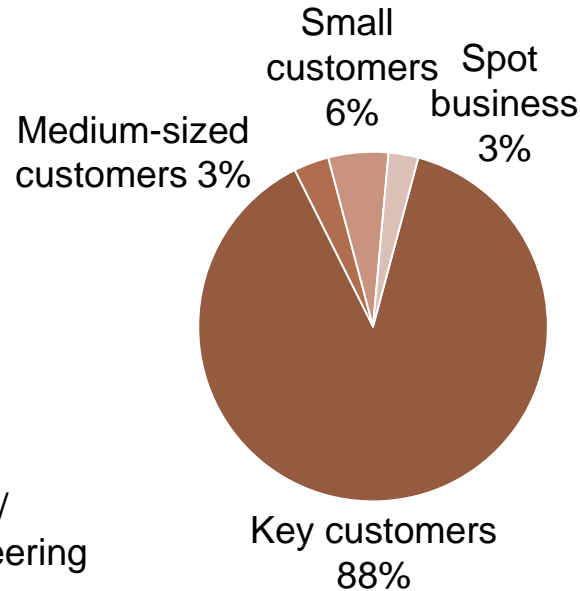
Major European market player with 16% market share

# Key facts about AURUBIS SHAPES (2015)

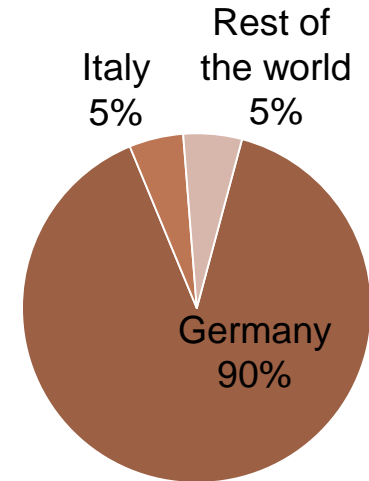
### Industry split



### Volume by customer group



### Deliveries by region



AURUBIS SHAPES are shipped to 60 active customers in 18 countries





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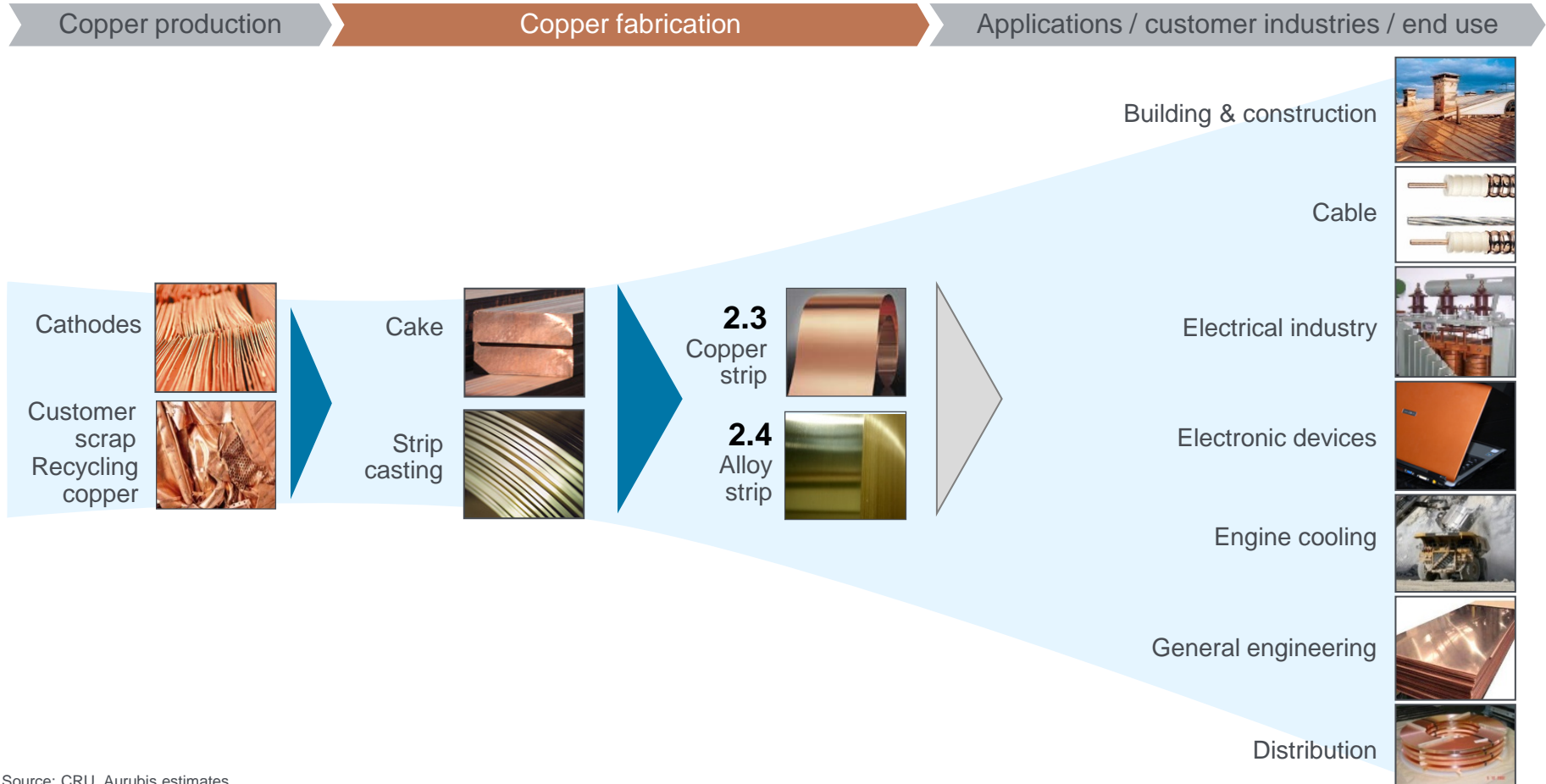
Closing remarks

Jürgen Schachler






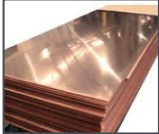


Customer industries require approximately 4.7 million tons of flat rolled products per year

## World demand 2015 (Flat Rolled Products in million t)

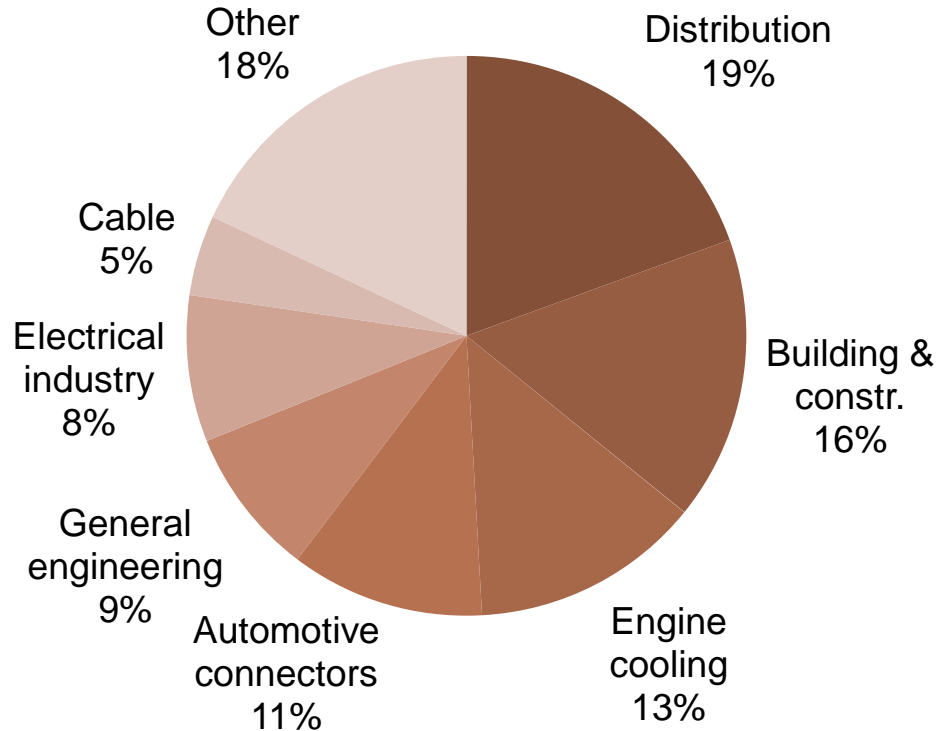


# Business driven by the need for electrical and thermal conductivity or by copper's appearance

<u>Industry</u>	<u>Applications</u>	<u>Drivers</u>
Building & construction	 <p>Roofing &amp; façade systems Climate control</p>	<p>Residential &amp; commercial building investment GDP</p>
Cable	 <p>Power cable RF and optical communication</p>	<p>Infrastructure investments (power grids, communication networks, renewable energy) Industrial production</p>
Electrical industry	 <p>Transformers Power control systems Power connectors &amp; switches</p>	
Electronic devices	 <p>Automotive connectors Consumer electronics White goods</p>	<p>Automotive production (on-board electronics, electric vehicles) GDP, technical development</p>
Engine cooling	 <p>Heat exchangers for mining trucks, construction equipment, trains &amp; mobile power generation</p>	<p>Commodity prices (investments in mining, oil and gas, substitution) Infrastructure investments</p>
General engineering	 <p>Deep drawn products, fashion, stamped parts, cooling elements, printing plates</p>	<p>Industrial production GDP</p>

Aurubis Flat Rolled Products serves more than 2,500 customers in all key market segments

Segment distribution 2015 (volume-based)

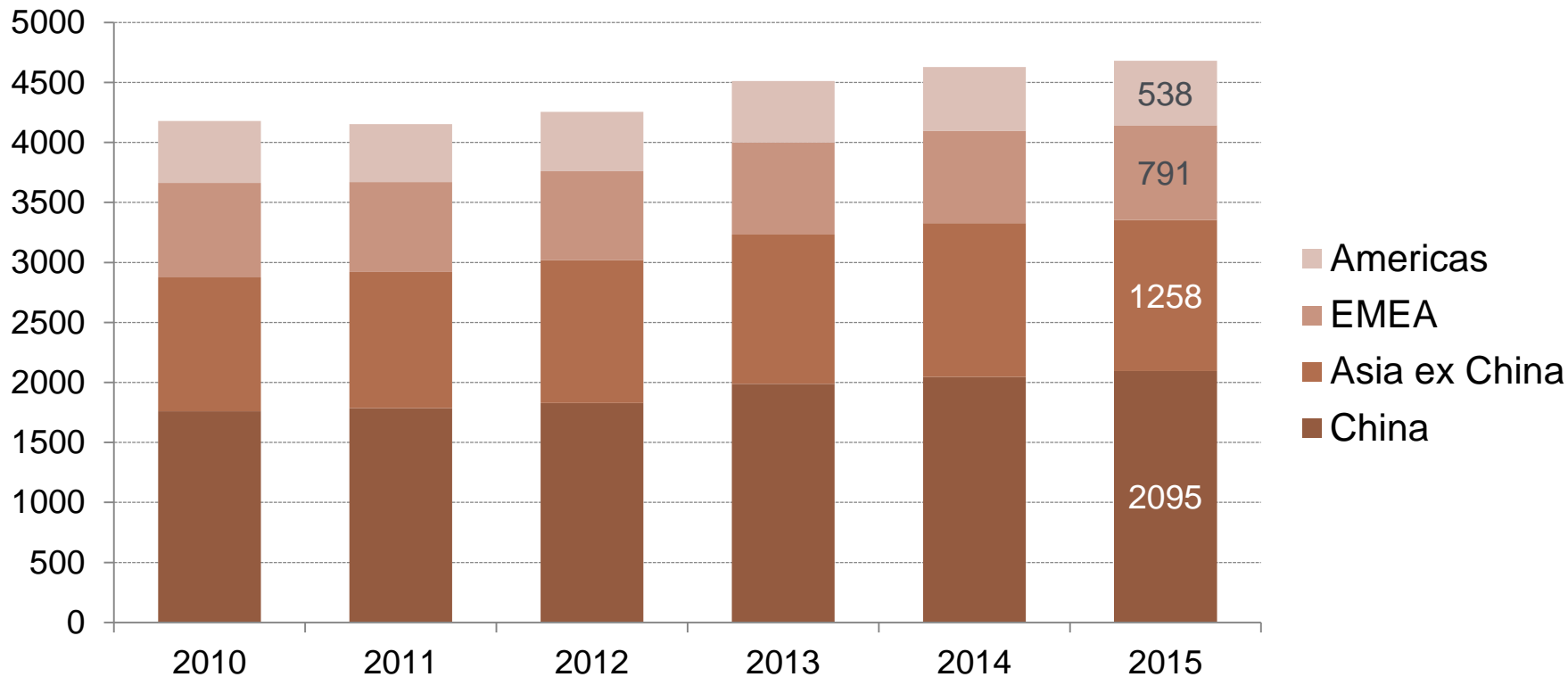


Source: CRU, Aurubis internal sales data

Well-diversified segment portfolio

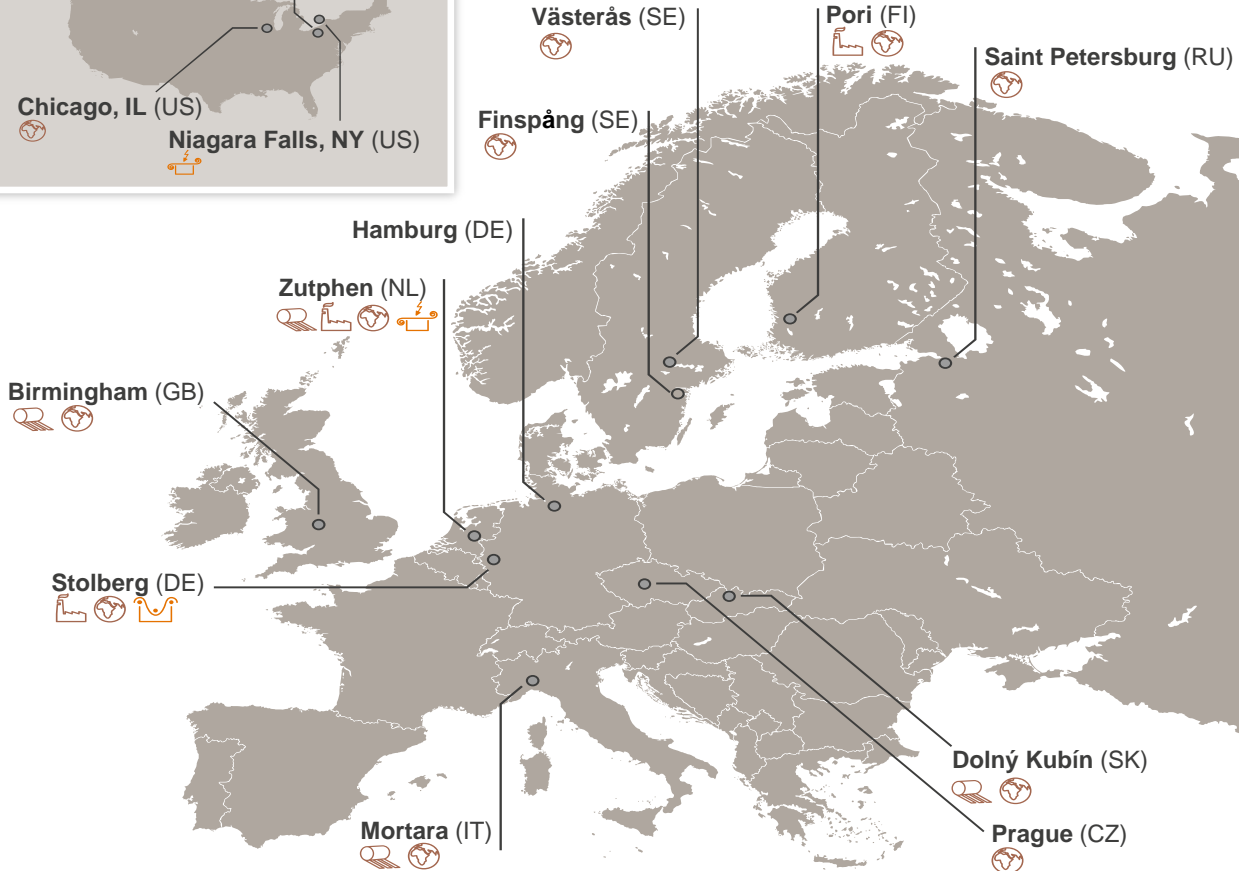
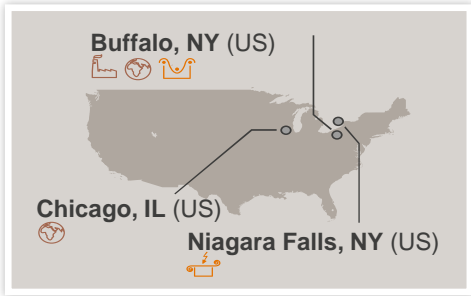
# Global market demand for flat rolled products continues to grow

Global market size by region (in 1,000 t)



Expected CAGR 2016-2020 around 2-2.5%

# Global presence with focus on Europe and North America



**Description**

- L Plant
- S Slitting center
- W Sales office
- C Cooperation partner

**Tinning**

- T Electroplating line
- U Hot-dip tinning line

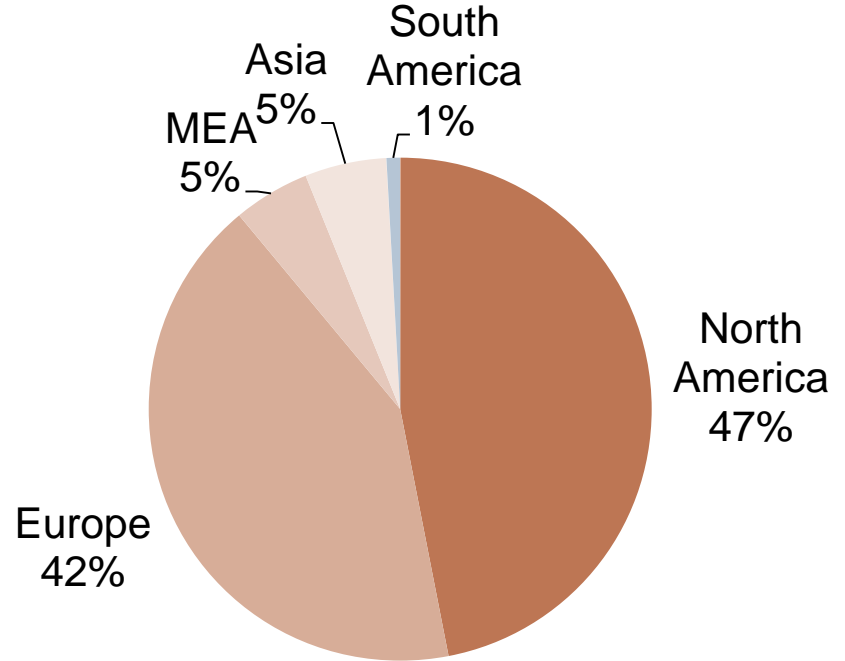




Aurubis Flat Rolled Products serves more than 2,500 customers around the world

Market share 2015 and regional distribution of sales  
(volume-based)

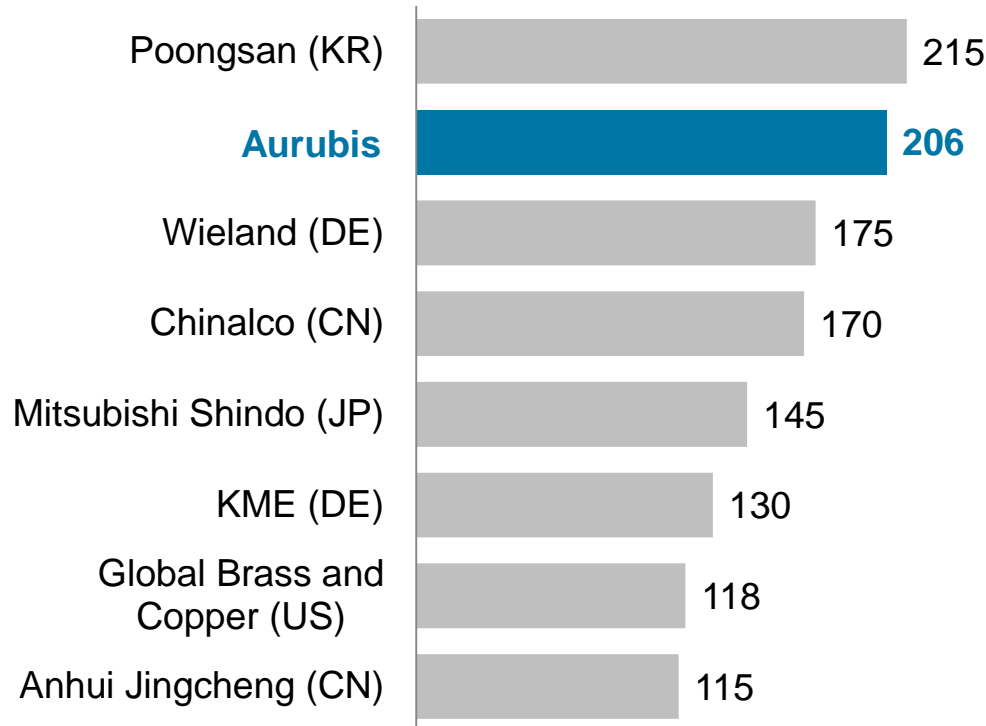
Global market share	4.4%
North America	22%
Europe	11%
Asia	<1%



Stable position in home markets

Aurubis is one of the leading rolled products producers worldwide

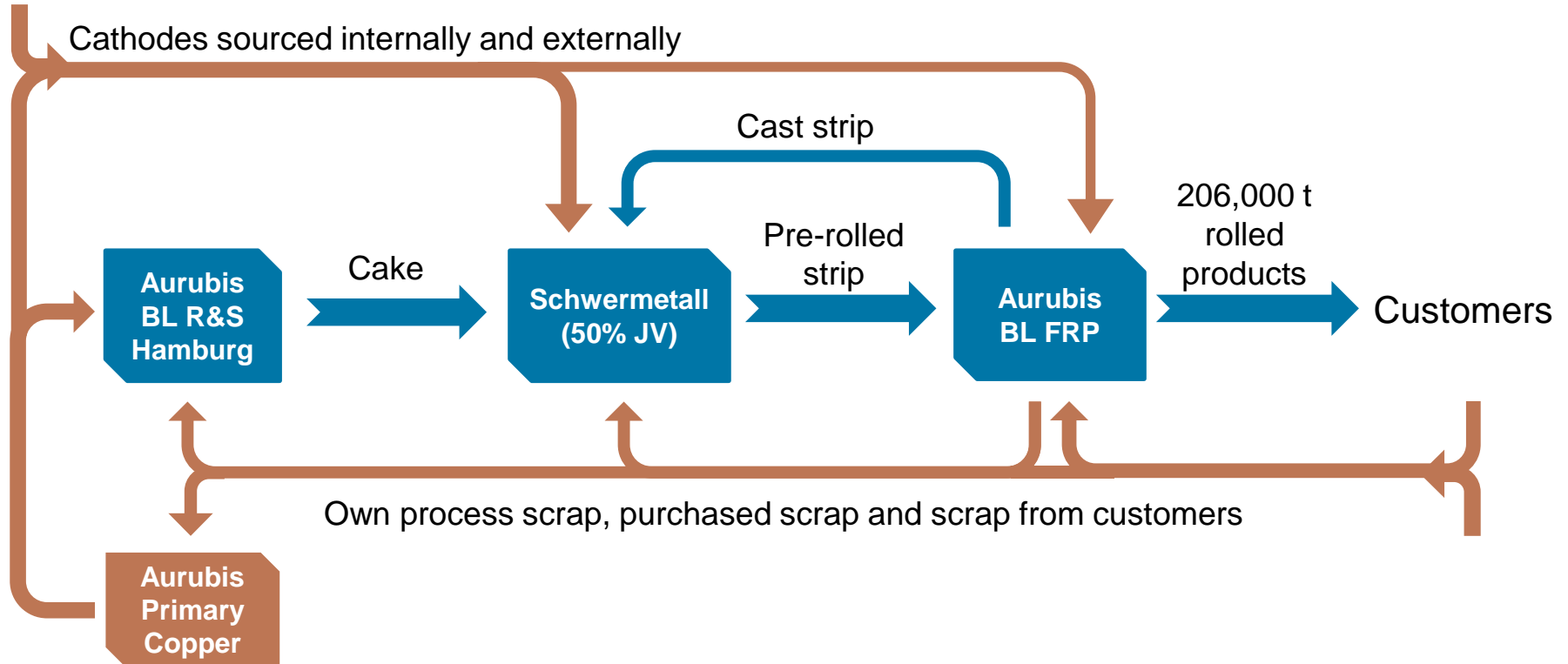
Copper and copper alloy plate, sheet, strip & foil output from producers worldwide 2015  
(in 1,000 t)



- » Only company with integrated production in both Europe and North America
- » Only company with strong market positions in both Europe and North America
- » Global sales and service network
- » Comprehensive customer base with long-term relationships, covering both global and regional customers

# Strong connections with other Aurubis Business Lines

## Flows on behalf of BL Flat Rolled Products, approximate values



Business Line Flat Rolled Products is an integral part of the Aurubis copper and alloy ecosystem

# Aurubis has many competitive advantages in the flat rolled products markets



## Local & global

- » International production footprint
- » Global sales and service network
- » Own service centers

## The right products

- » Comprehensive product portfolio
  - » Alloys and dimensions
  - » Surface plating
- » Technical competence
  - » Internal processes
  - » Customers' processes
- » Certified quality systems (ISO, ISO-TS)

## Customer-focused

- » Customer-specific product development
- » Logistics solutions
  - » Vendor-managed inventories
  - » Just-in-time programs
- » Metal services
  - » Price information & hedging services
  - » Closing the loop – scrap handling

## Stable

- » Strong industrial ownership
- » Strong raw material market position

Making Aurubis one of the best positioned manufacturers of Flat Rolled Products in the world



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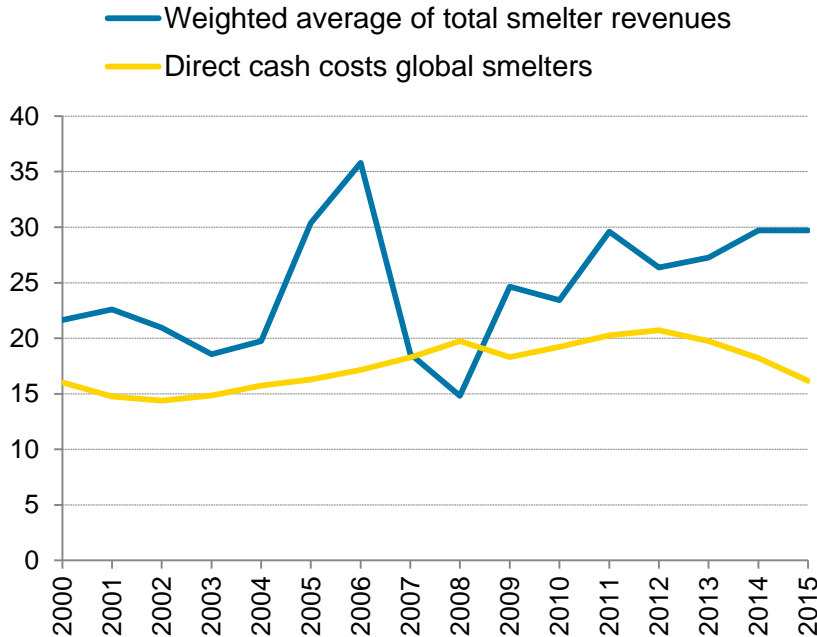
Thomas Büniger

Closing remarks

Jürgen Schachler

# Continuous improvement is mandatory for Aurubis as a high-standard copper smelting and refining company

## Smelter revenues vs. cash cost (in UScts/lb, 2015 \$)

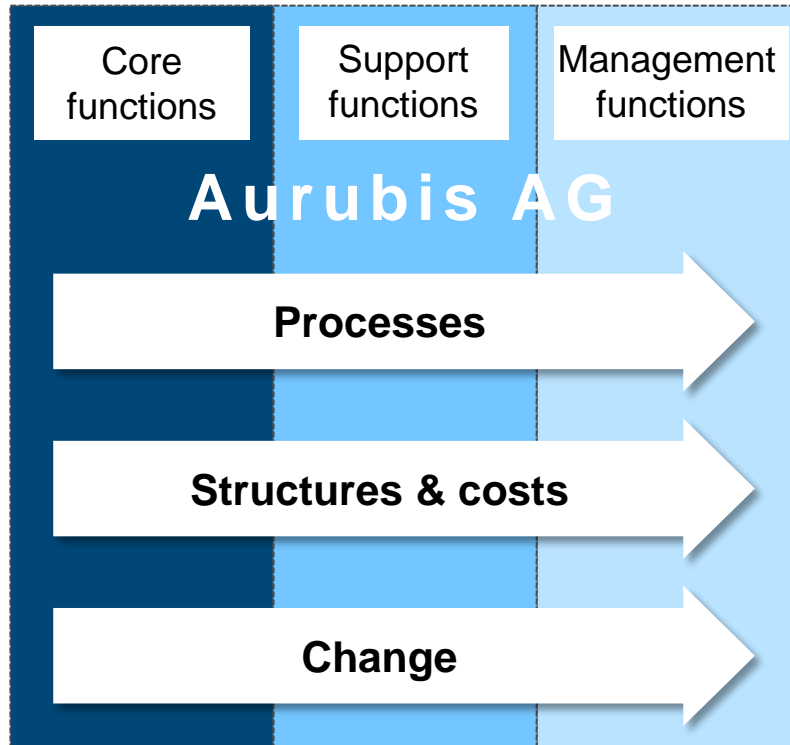


Source: WoodMac

- » Standard TC/RCs are determined by global supply/demand balance for primary and secondary materials
- » Terms for standard by-products only allow limited differentiation
- » Cash cost development is driven by global and regional cost drivers and productivity
- » Smelting and refining business does not allow cost inflation to be passed on structurally
- » Improvement of revenue base as well as cost efficiency is key for Aurubis to stay in a leading position
  - » Earnings Improvement Project (EVP) in Hamburg and Lünen
  - » Fit for Future in Pirdop

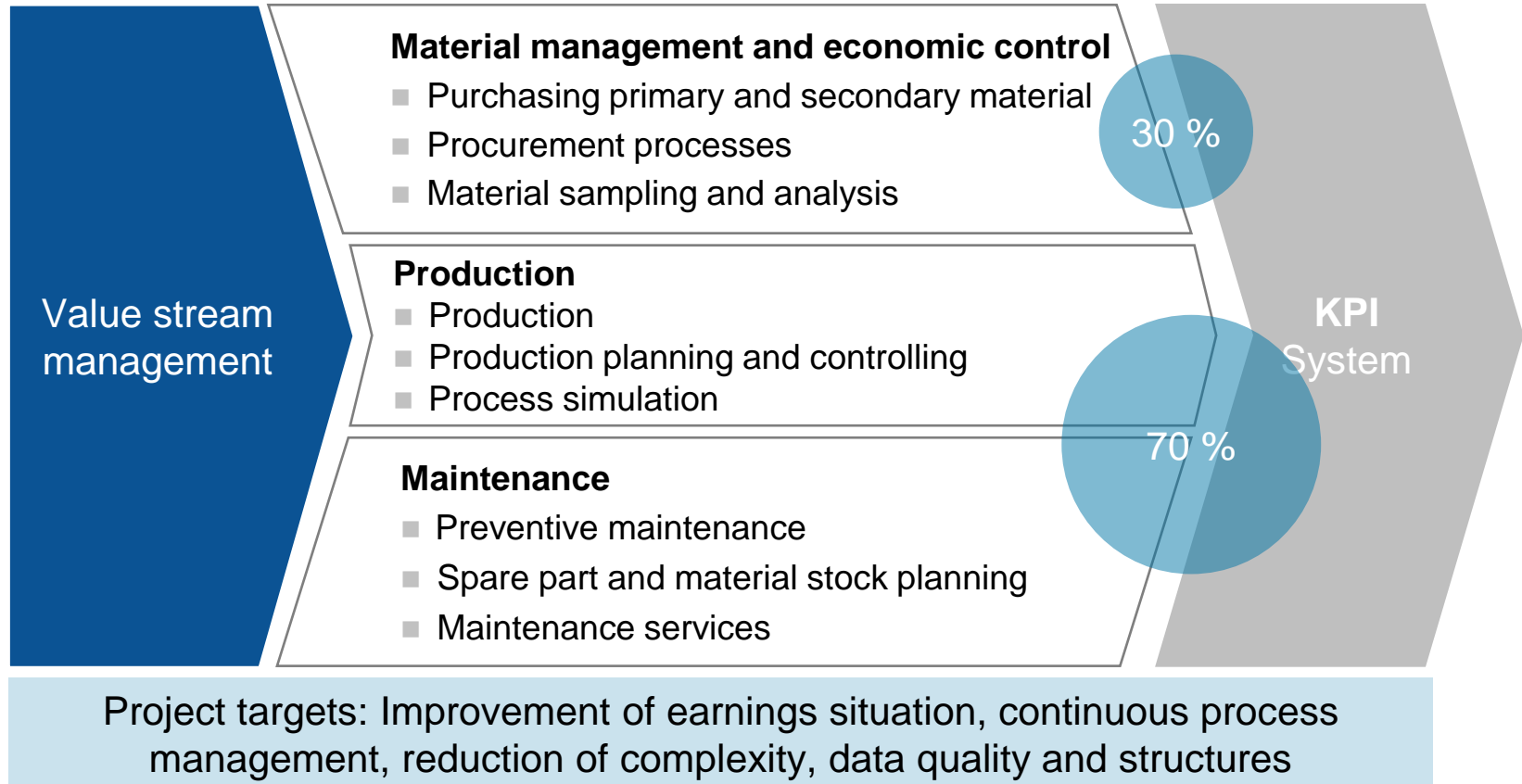
**EVP is a comprehensive project to improve revenue and cost performance sustainably and on a long-term basis**



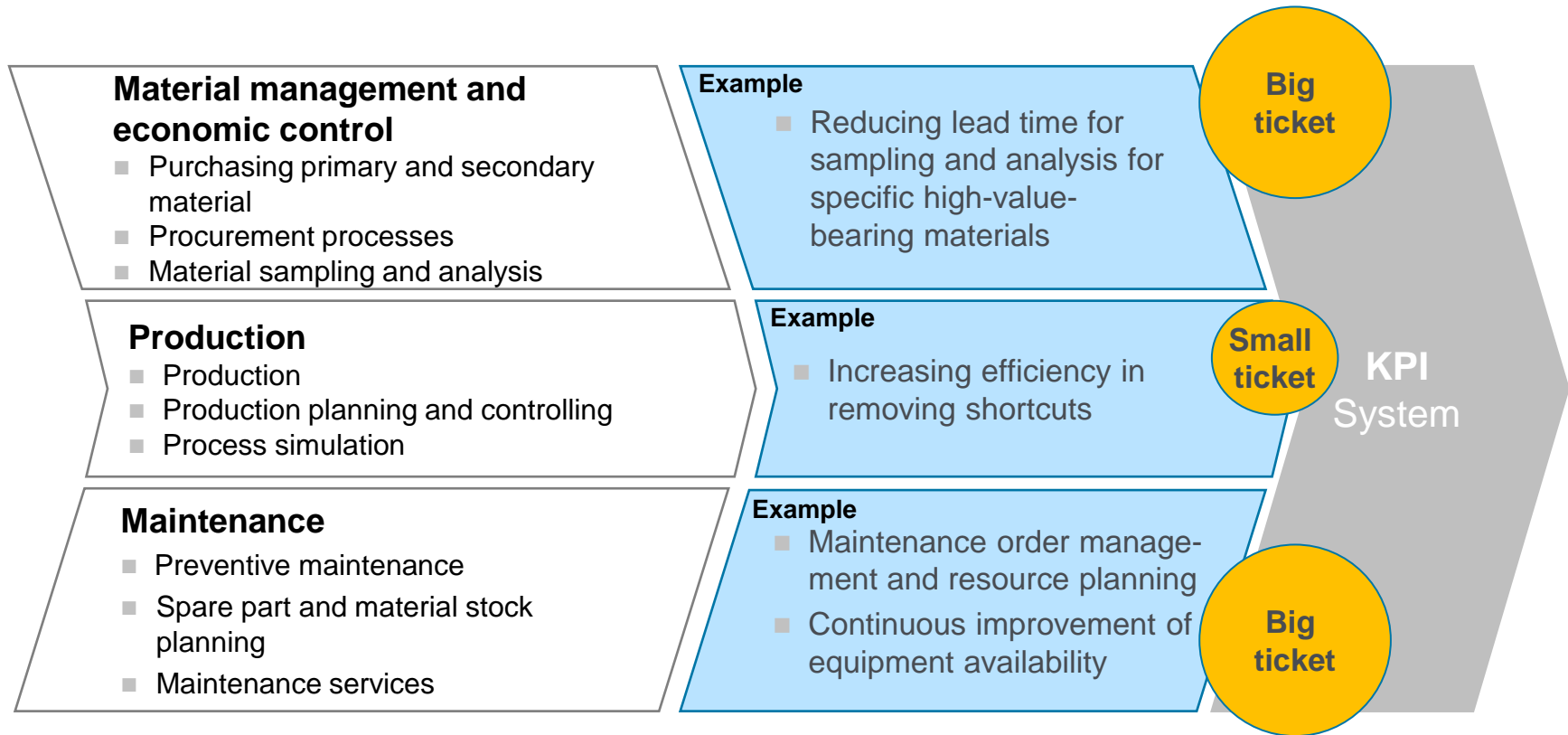


- » In times of adverse market conditions for concentrates, copper scrap and sulphuric acid, we have limited influence
- » At the same time, our German entities in particular are subject to global and regional cost drivers
- » By improving our results, we gain the freedom to finance projects
- » The focus is on analyzing our business processes in Hamburg and Lünen with the objective of improving margins and reducing costs
- » The goal is to reduce complexity and improve Aurubis' competitiveness further

# The improvement of earnings results from value stream management in three focus areas



# The improvement of earnings results from value stream management in three focus areas



In line with EVP, we have updated our operational management system and tools to safeguard continuous improvement and avoid non-sustainable one-time effects

# Improvements in our operations management system are supporting the sustainable implementation of measures

Handlungsfelder	Adressierbare Potenziale	Prozess bei P	Beteiligte Funktionen
Arbeitsplatzgestaltung/ Handing/ Materialfluss	Effizienz	●	IH
5-S – Arbeitssicherheit, Ordnung und Sauberkeit	Effizienz	●	IH
Anlagenverfügbarkeit (Schwerpunkt IH)	Verfügbarkeit/Durchsatz	●	IH
Anlagenverfügbarkeit (Schwerpunkt P)	Verfügbarkeit/Durchsatz	●	IH
Qualität	Ertrag	●	IHPN/Labor
Analytik (PN + Labor)	Ertrag	●	PN / Labor
Struktur / Segmentierung / Standardisierung (Produktion)	Effizienz	●	WL
Materialeinsatzplanung (Produktionsplanung / Einkaufsplanung)	Ertrag	●	REK/PP/Log
Produktionsorganisation (Steuerung)	Effizienz	●	PP/IT
Informationsfluss / Systeme	Effizienz	●	REK/PP/IT
Technologie / Verfahren	Verfügbarkeit/Durchsatz	●	Strategie/ED/FAE
Kennzahlen / Visualisierung	Effizienz	●	WCOB
Mitarbeiterqualifizierung	Effizienz	●	HR/AF

## Main fields of action

Occupational safety, order and cleanliness

Workplace organization/material flow/layout

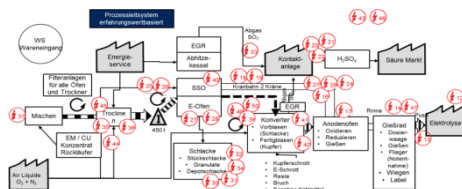
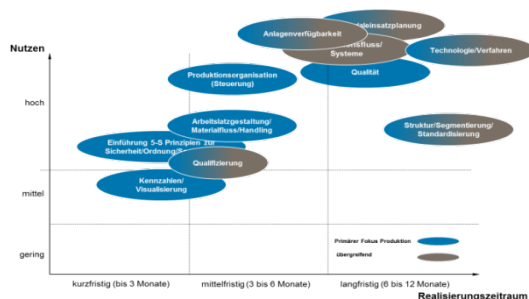
Production planning and organization

Structure/segmentation/standardization

KPIs and visualization

Quality in the production process

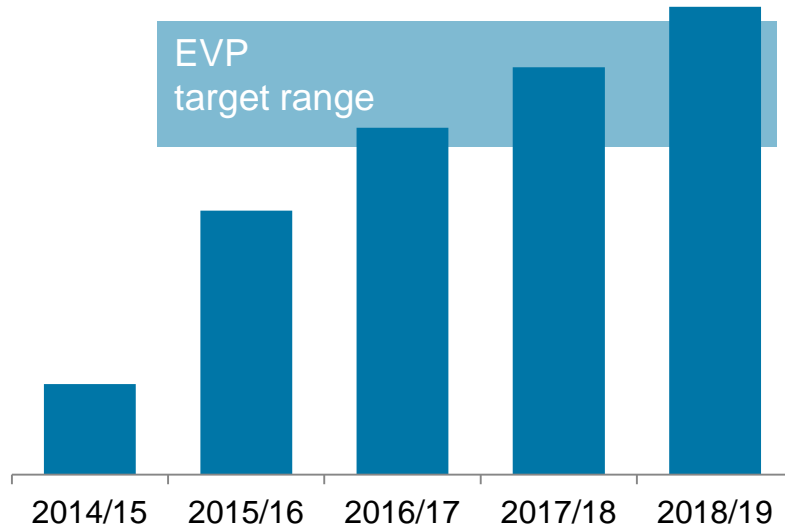
Equipment availability (main focus production)



The goal is to increase efficiency in the production areas significantly and sustainably

# Earnings Improvement Project: Aurubis expects effects within the target range

## Estimated result improvement



Note: Estimated effect on Aurubis AG EBIT

- » Estimated long-term result effects are fully within the target range
- » Effects on Aurubis profit in current fiscal year also in line with expectations
- » Project effects to be realized in operational, commercial and other functional areas
- » Effects include revenue and cost-related improvements
- » Sustainable implementation supported by integration of project measures into operational management and continuous improvement

Realization of improvement measures is integrated in our operational management and provides a strong basis for further continuous improvement



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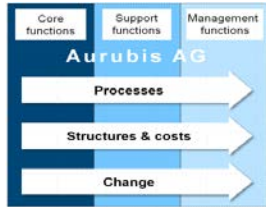
Closing remarks

Jürgen Schachler





We confirm our forecast for FY 2015/16 and expect both operating EBT and operating ROCE to be significantly lower compared to the previous year.



## Earnings Improvement Project in Hamburg und Lünen



## Project Scope (Supply Chain OPTimization and Excellence)



## Project FCM (Future Complex Metallurgy)

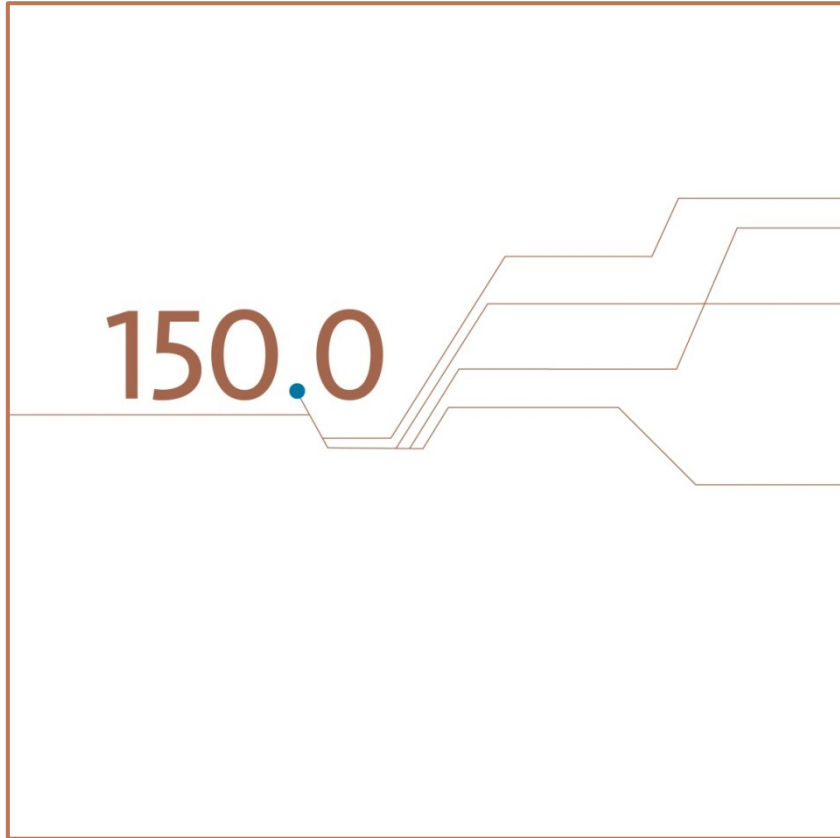


## Project MSO (Metallurgical Slag Optimization)



# Aurubis – 150 Years of the Future.





# Aurubis Capital Market Day 2016

*September 30, 2016*

IR contacts:



**Angela Seidler**

Head of Investor Relations

+49 40 7883-3178

[a.seidler@aurubis.com](mailto:a.seidler@aurubis.com)



**Dieter Birkholz**

Senior Manager

+49 40 7883-3969

[d.birkholz@aurubis.com](mailto:d.birkholz@aurubis.com)



**Elke Brinkmann**

Senior Manager

+49 40 7883-2379

[e.brinkmann@aurubis.com](mailto:e.brinkmann@aurubis.com)

Financial calendar



- » Annual Report 2015/16
- » Quarterly Report First 3 Months 2016/17
- » Annual General Meeting 2017

December 14, 2016

February 13, 2017

March 2, 2017



## Forward-looking statements

This document contains forward-looking statements that involve risks and uncertainties, including statements about Aurubis' plans, objectives, expectations and intentions. Readers are cautioned that forward-looking statements include known and unknown risks and are subject to significant business, economic and competitive uncertainties and contingencies, many of which are beyond the control of Aurubis. Should one or more of these risks, uncertainties or contingencies materialize, or should any underlying assumptions prove incorrect, actual results could vary materially from those anticipated, expected, estimated or projected.