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Legal Statement

The purpose of the information in this presentation is to guide ICA programs and provide members with information to make independent business decisions.

**ANTITRUST GUIDELINES
FOR
COPPER INDUSTRY TRADE ASSOCIATION MEETINGS**

The following guidelines with respect to compliance with antitrust laws of the United States, Japan and European Community[1] are intended to govern the conduct of participants in copper industry trade association meetings, both at the meeting itself and in informal discussions before or after the formal meeting.

Price. Competitors should not discuss future prices (including terms of sale) of their products. There is no blanket prohibition against the mention of or reference to current or past prices but limits must be observed. Such references or mentions should occur only when necessary in connection with the development of association programs. For example, reference to a particular price level in comparing the cost of a copper product to a competing product is permitted. Whenever possible, such references should be discussed in advance with legal counsel.

Competitive Information. Competitors should not discuss the market share of a particular copper producer or copper fabricator's products. Furthermore, nothing should be said at a meeting which could be interpreted as suggesting prearranged market shares for such products or producer production levels. The overall market share of copper products may be discussed with regard to competition with non-copper products and general market acceptance.

New Products. Competitors should not encourage or discourage the introduction of a new product by another competitor or reveal a particular copper company's plans to change the production rate of an existing product or to introduce a new product. No company should disclose to another company whether it is in a position to make or market a new product. New products may be discussed in a technical manner or from the standpoints of competition with non-copper products and general market acceptance. In addition, proposed methods for and results of field and laboratory testing can be considered.

The Role of Legal Counsel. Legal counsel attends association meetings to advise association staff and other meeting attendees regarding the antitrust laws and to see that none of the matters discussed or materials distributed raise even the appearance of antitrust improprieties. During the course of a meeting, if counsel believes that the discussion is turning to a sensitive or inappropriate subject, counsel will express that belief and request that the attendees return the discussion to a less sensitive area.

A paper entitled
"Copper Industry Trade Associations and the Antitrust Laws"
is available upon request.

10/92, 5/93, 10/10

[1] Other foreign competition laws apply to International Copper Association, Ltd. (ICA)'s activities worldwide.

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Substitution and Regulatory Trends

Paul Dewison, Managing Director, MetalsPlus

CESCO, Chile, April 2017

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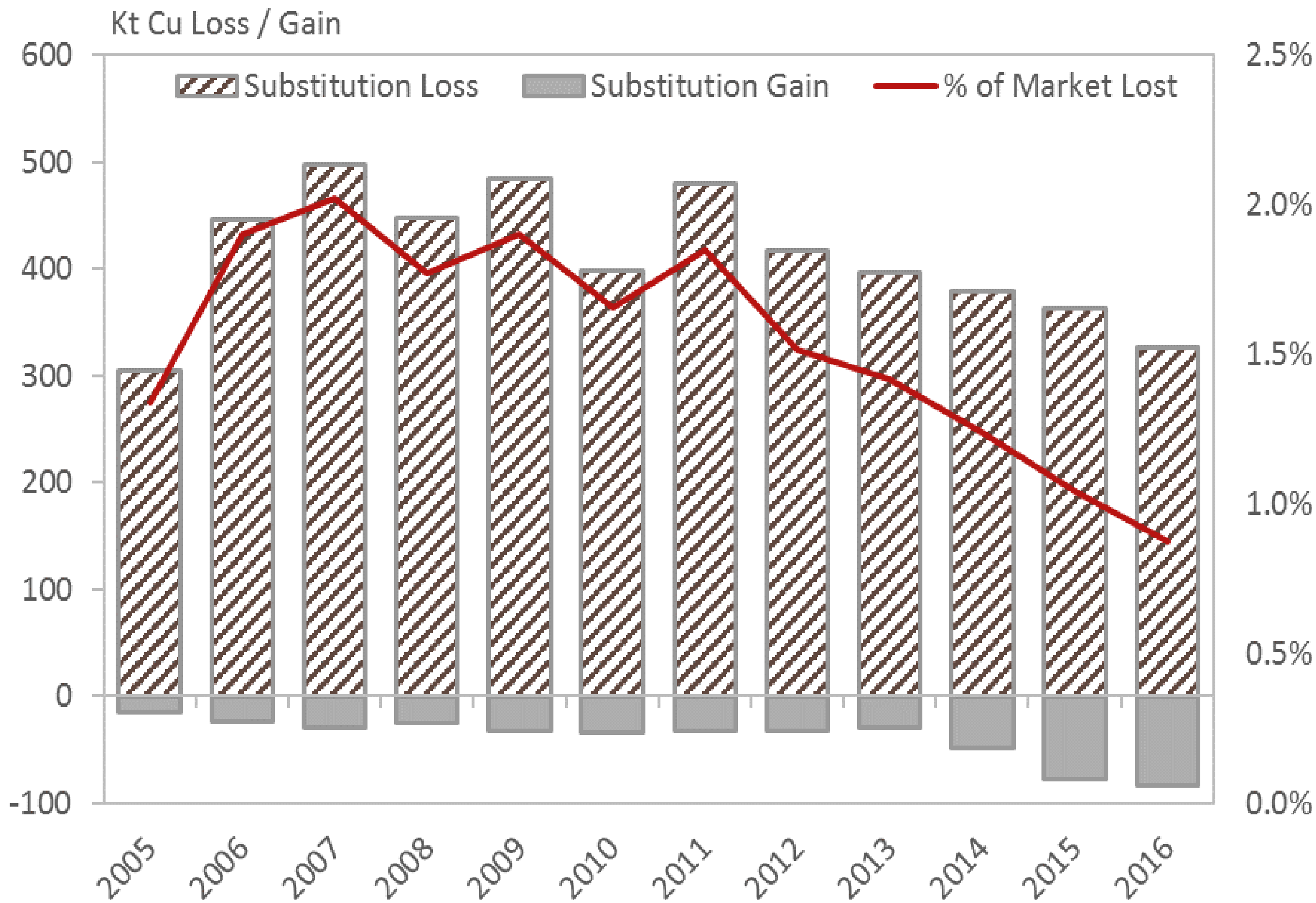
2016 Losses Below 1% of Total Demand

Global net figures (kt)



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Substitution by Region in 2016 & Trend

Net Substitution	% of Total
China	
China	40%
Other Asia & Oceania	
N.E.Asia	9%
Other	14%
Europe & Africa	
European Union	13%
Other	6%
Americas	
North America	12%
Latin America	5%

Total = 240 kt

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Substitution by Product in 2016 & Trend

Net Substitution	% of Total
Low Voltage Energy Cable	
Building Wire	2%
Automotive Wire	2%
Equipment Wire	1%
Power Cable	
Industrial	5%
Network	13%
Telecom/Data Cable	
Ext. Telecom	6%
Other	3%
Winding Wire	
Electric Motors	6%
Transformers	5%
Other	2%
Bare Wire & Cu RBS	
Bare Wire	3%
Cu RBS	4%
Cu/Alloy PSSF	
E & E Strip	2%
Other	5%
Copper Tube	
Plumbing	7%
Industrial	4%
Other Mill & Non Mill	
Alloy RBS	13%
Other Mill	5%
Non Mill	11%

Total = 240 kt

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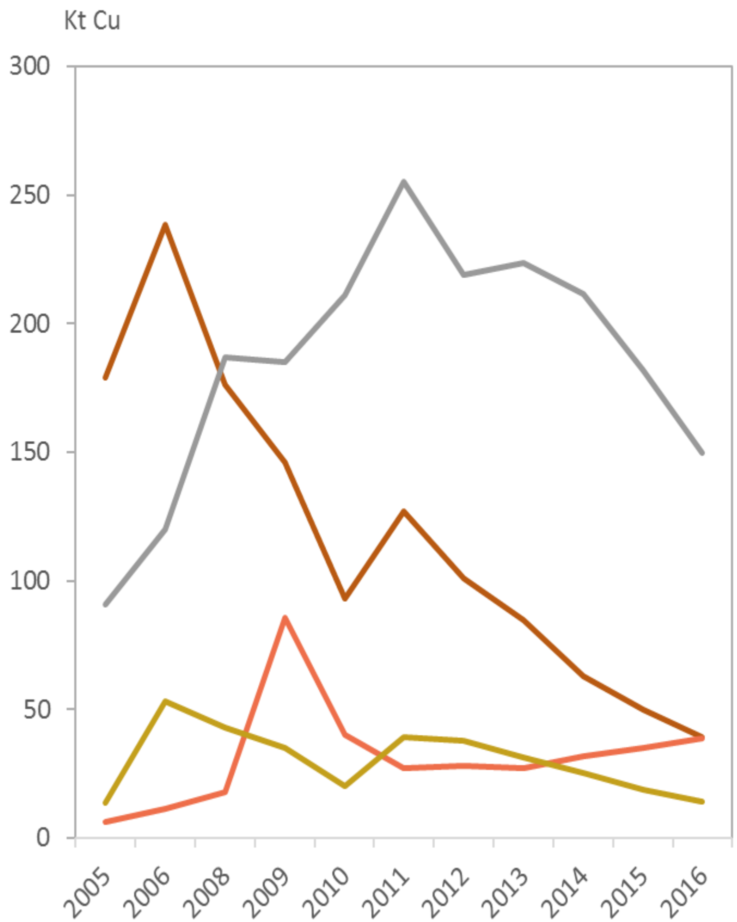
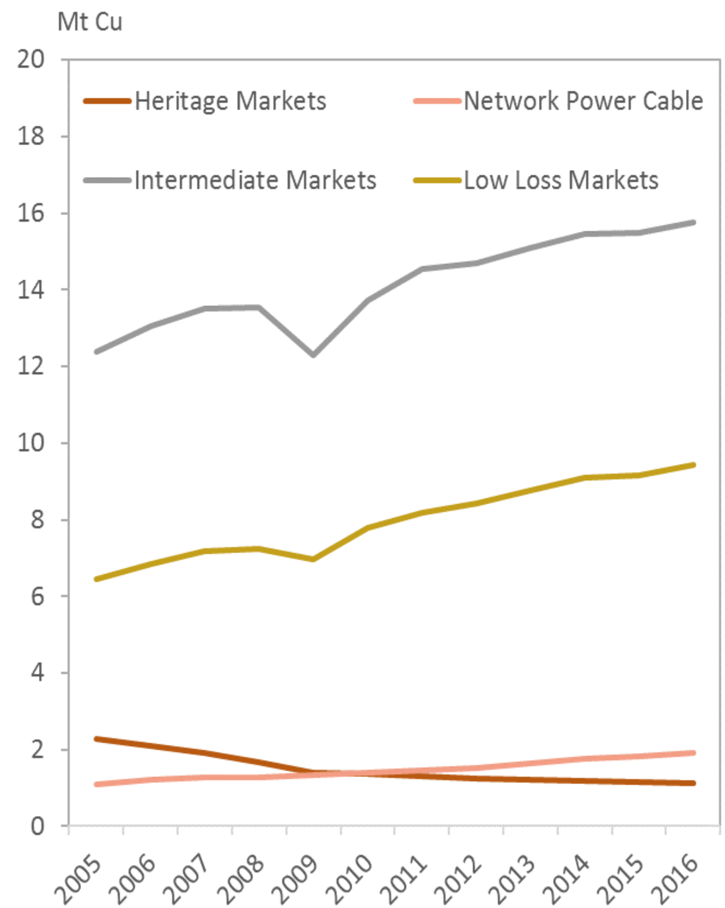
Substitution by Category 2005-2016

'Heritage markets' experience lower losses

Annual Substitution



Market Demand



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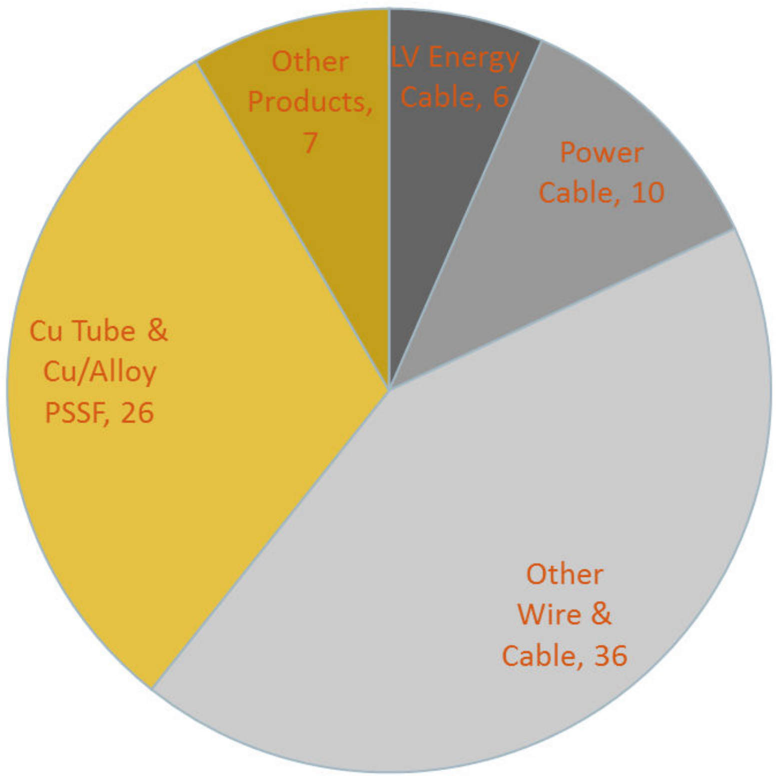
Material Gains

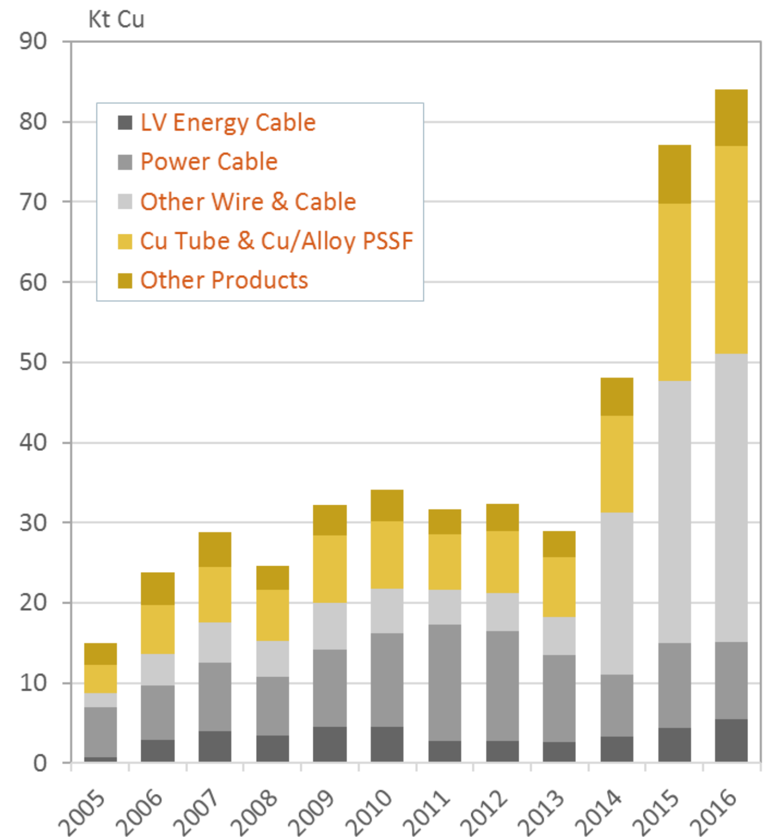
At a relatively high level in 2016

Substitution Gains in 2016



Total = 84 kt

… Trend 2005 to 2016



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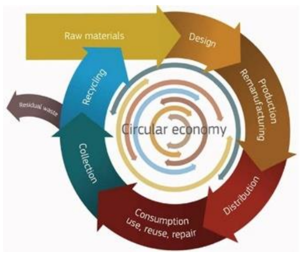
Global Regulatory Issues

Regulation increasingly important, may impact substitution in future

The Green Economy
Resource Use, Carbon Footprint, Climate Change



Chemicals Management
Harm to Human Health or the Environment

Consumers Above the Standard
Good for Image, Future Proofing

Product Integrity
Safe to Use, Fit for Purpose

Social Licence to Operate
Conflict Minerals, Mining Permit Rules

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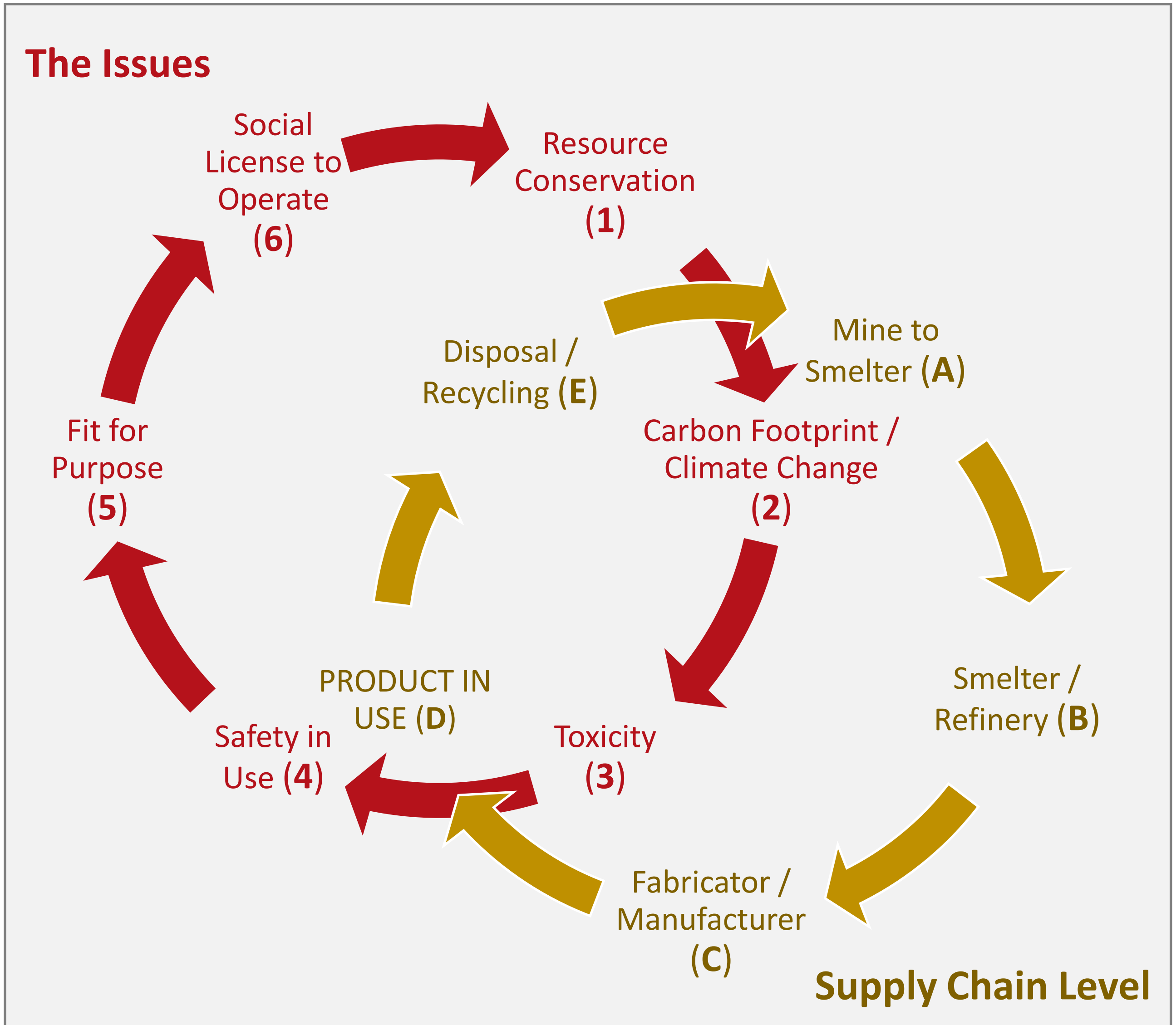
The Issues and Supply Chain Level



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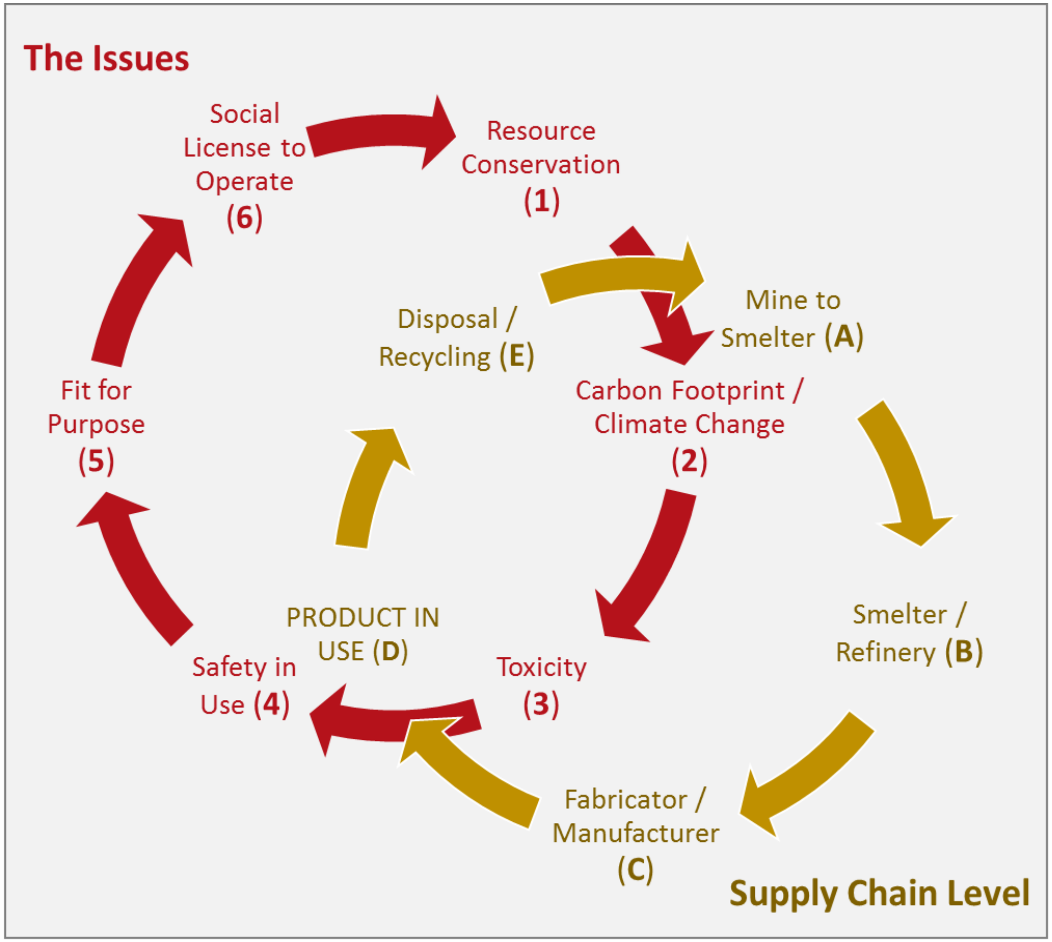
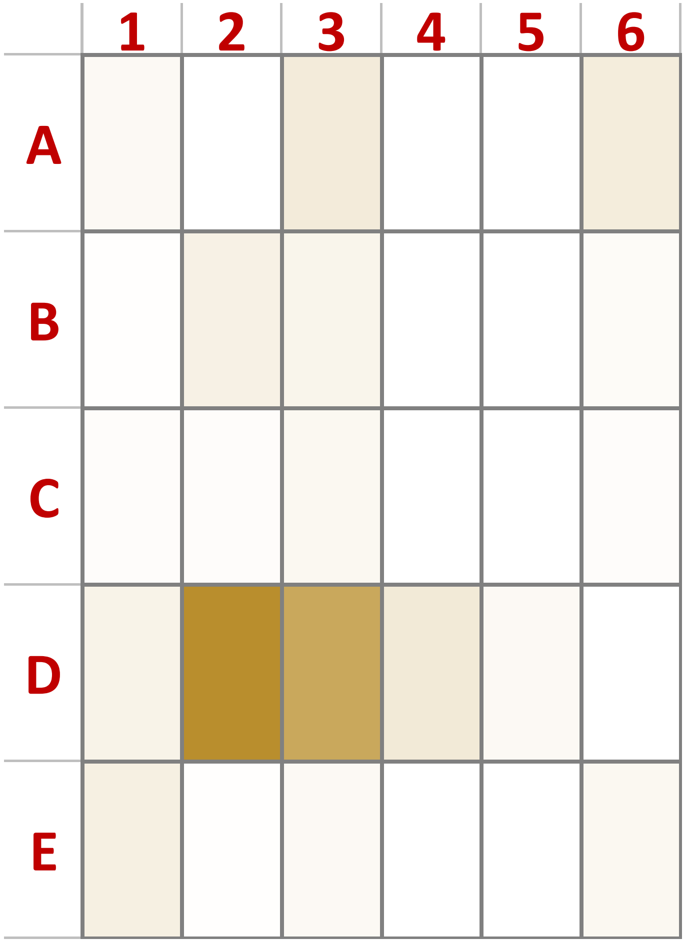
The Cycles and Regulatory 'Hot Spots'





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Regulatory Impact

Select regulations and potential impact

Chemicals Management

	2005 to Present	To 2025 - Possible	Chain to Cathode
Chemicals Content of Products & Systems			
Pb & Cu in Plumbing Systems			
Pb in Autos & E/E Equipment			
Pb in Consumer Goods			
Indirect & Extended Impacts			
Chemicals in the Supply Chain			
GHS & REACH-like Legislation			
Other Chemicals Legislation			
SOLAS			
Occupational Exposure Limits (OEL)			
Indirect & Extended Impacts			
Chemicals in the Environment			
MARPOL			
Other Marine, Water & Soil			
Air Pollution			
Indirect & Extended Impacts			

KEY

- Negative - Major
- Negative - High
- Negative - Moderate
- Negative - Minor
- No Discernable Impact
- Positive - Minor
- Positive - Moderate
- Positive - High
- Positive - Major

Green Economy & Other

	2005 to Present	To 2025 - Possible	Chain to Cathode
Energy Efficient Equipment			
MEPs Motors - Direct			
MEPs Motors - Indirect			
MEPs Transformers - Direct			
MEPs Transformers - Indirect			
MEPs & Refrigerants Aircon - Direct			
MEPs & Refrigerants Aircon - Indirect			
MEPs Other - Direct			
MEPs Other - Indirect			
Carbon-Neutral Buildings			
Green House Gas Reduction and Circular Economy (other)			
GHG Reduction - Impact on Smelters			
GHG Reduction - Impact on Renewables			
GHG Reduction - Impact on Autos			
CE - Products for Longer Life			
CE - Products for Repair & Re-use			
CE - Products for Low Materials Content			
CE - Products for Recyclability			
CE - Aggressive Recycling Control			
CE - Other Indirect & Extended Impacts			
Other Rules			
Conflict Minerals etc. (incl. Indirect)			
Electrical Safety Rules			
Energy Efficient Product Labelling			

Summary

- Net materials substitution in 2016 fell to 240 kt, or 0.9% of the market:
  - This was the fifth consecutive annual decline in substitution
- A further fall in cost relative to substitutes, especially aluminum, was a driver:
  - Copper has seen significant gains as well as losses
- Substitution has shifted in emphasis from ‘heritage markets’ to mainstream uses:
  - Network power cable, copper RBS and alloy products are seeing the most substitution
- Regulation could play a much more important role; major sets include:
  - Chemicals Management of toxic materials e.g. Lead use in Cu alloys
  - Green Economy Rules e.g. Minimum Energy Performance standards
- Regulations are getting tougher:
  - Green rules likely to include a growing element of resource conservation
  - ‘Social License’ elements coming in, requiring more comprehensive supply chain audit
- Manufacturers are showing willingness to go beyond requirements of the law:
  - Future proofing, eliminating uncertainty and positioning as a ‘moral supplier’ are all reasons