

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<sup>1</sup> 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

<sup>1</sup> Other foreign competition laws apply to International Copper Association, Ltd. (ICA)'s activities worldwide.

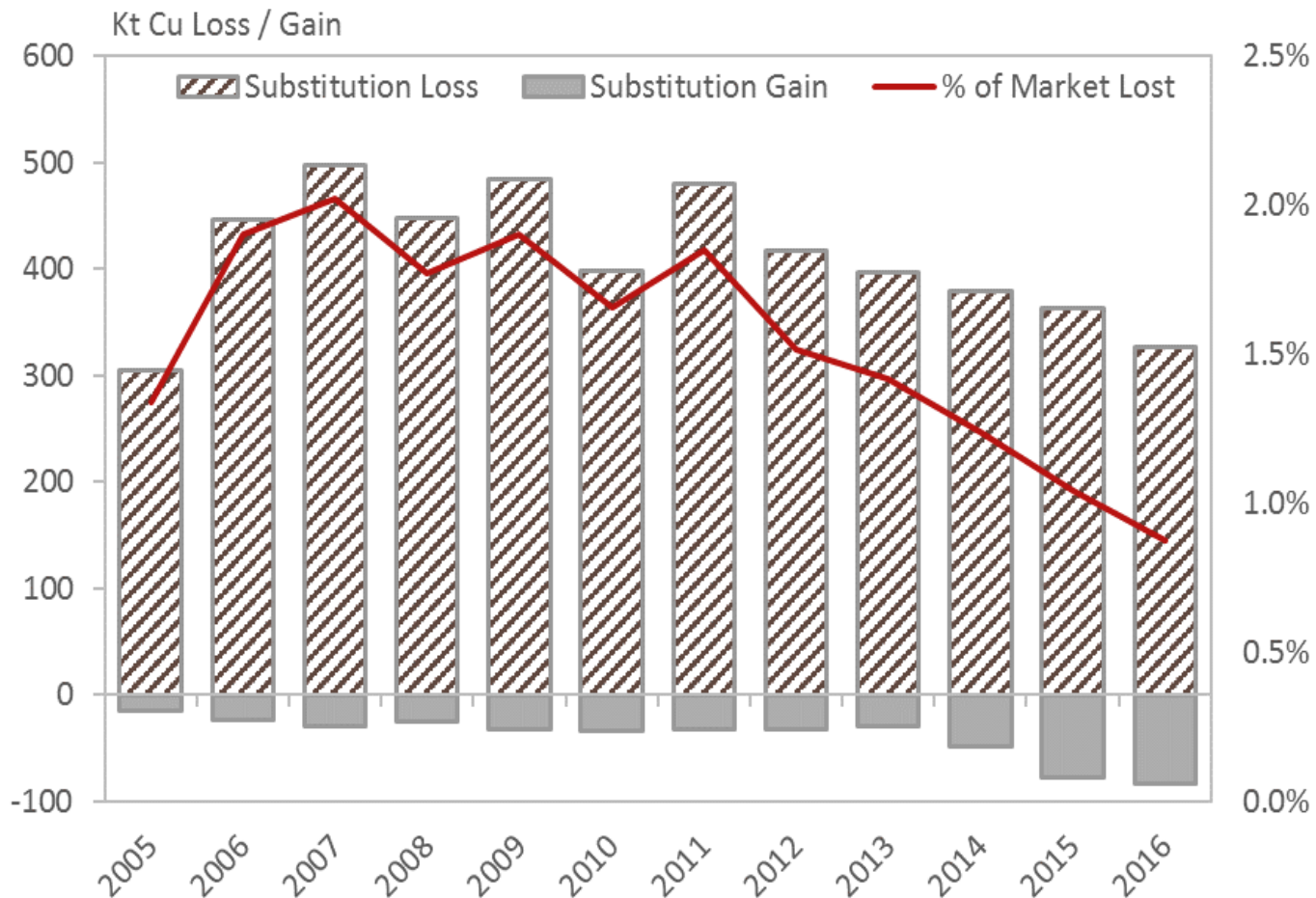
# Substitution and Regulatory Trends

Paul Dewison, Managing Director, MetalsPlus

CESCO, Chile, April 2017



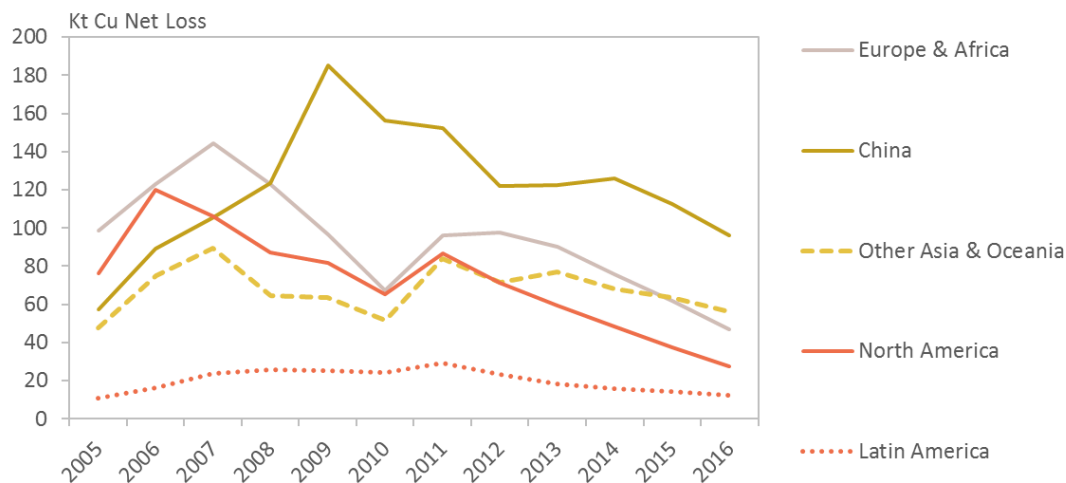
*Global net figures (kt)*



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



Total = 240 kt



## Substitution by Product in 2016 & Trend

Net Substitution	% of Total
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### 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

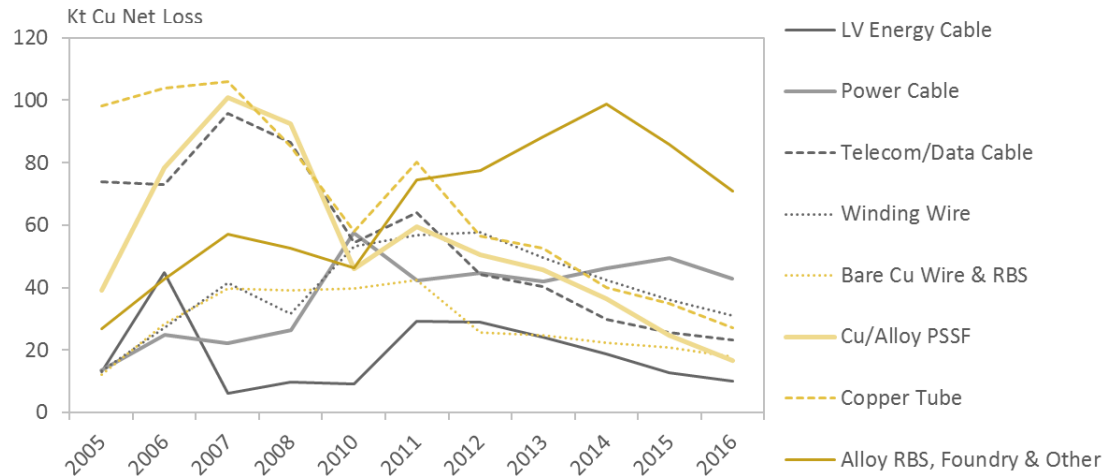
Plumbing	7%
Industrial	4%

### Other Mill & Non Mill

Alloy RBS	13%
Other Mill	5%
Non Mill	11%

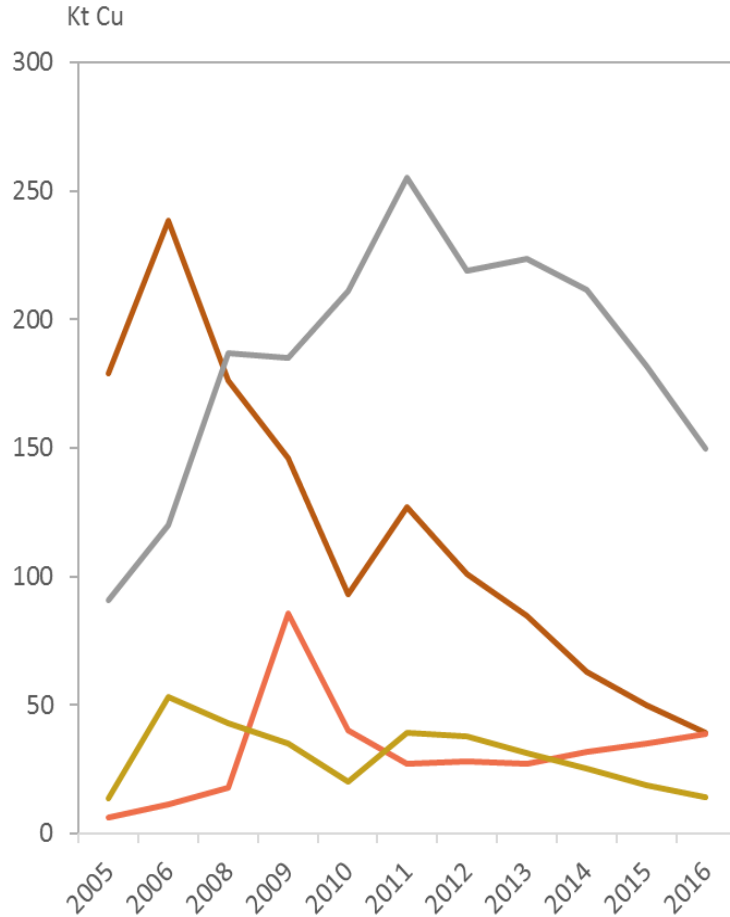


Total = 240 kt

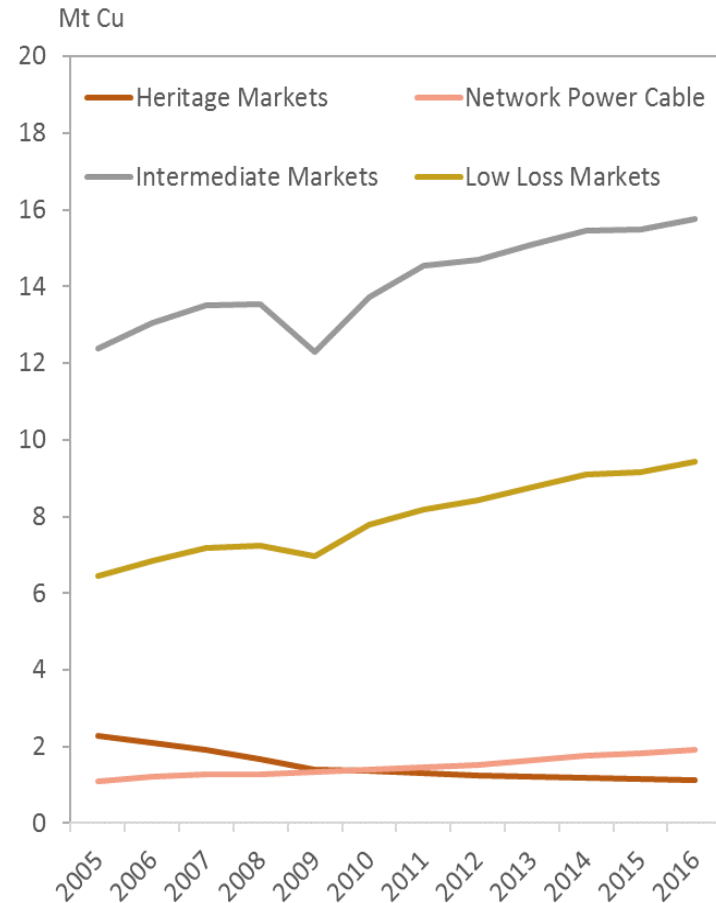


*'Heritage markets' experience lower losses*

## Annual Substitution

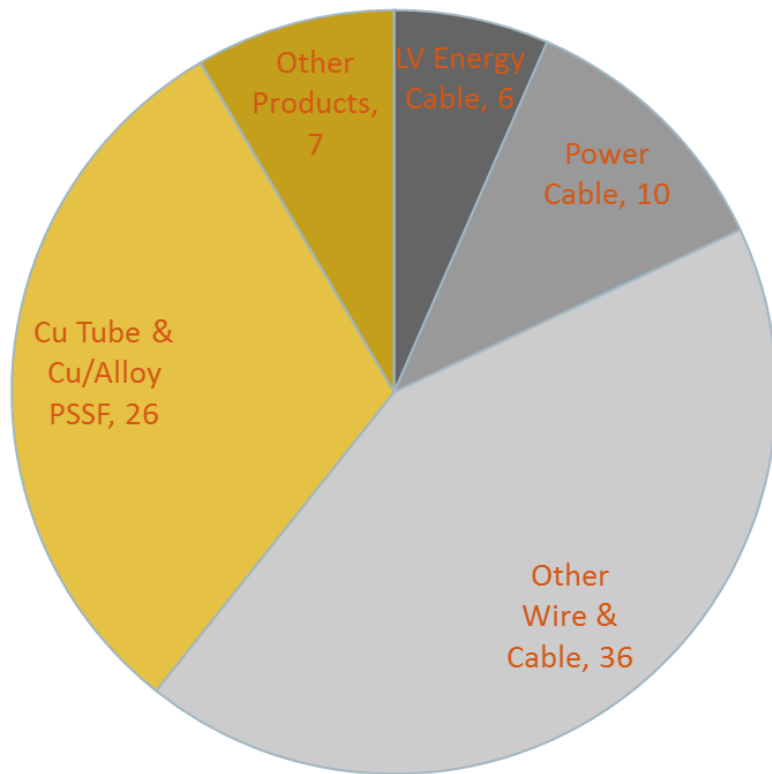


## Market Demand



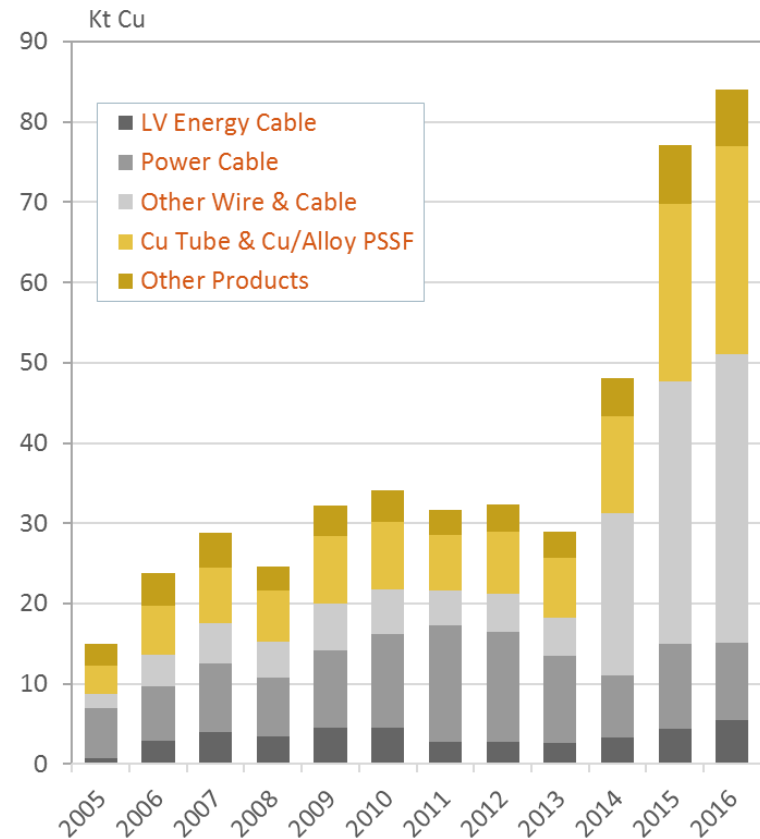
*At a relatively high level in 2016*

Substitution Gains in 2016



Total = 84 kt

... Trend 2005 to 2016

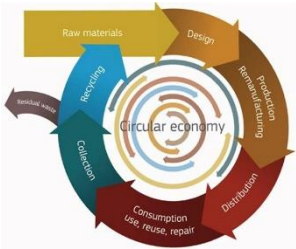




*Regulation increasingly important, may impact substitution in future*

### 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*

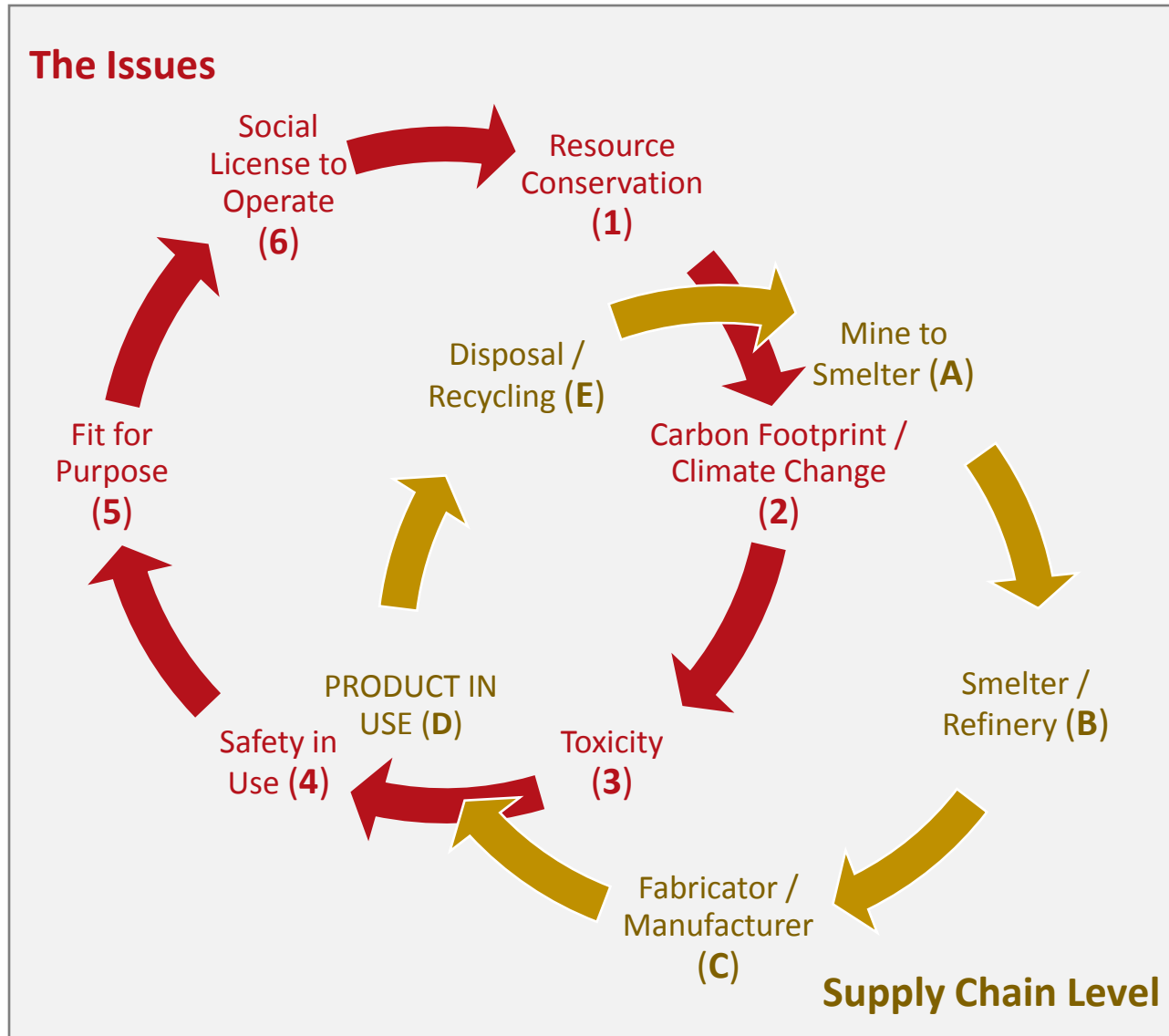


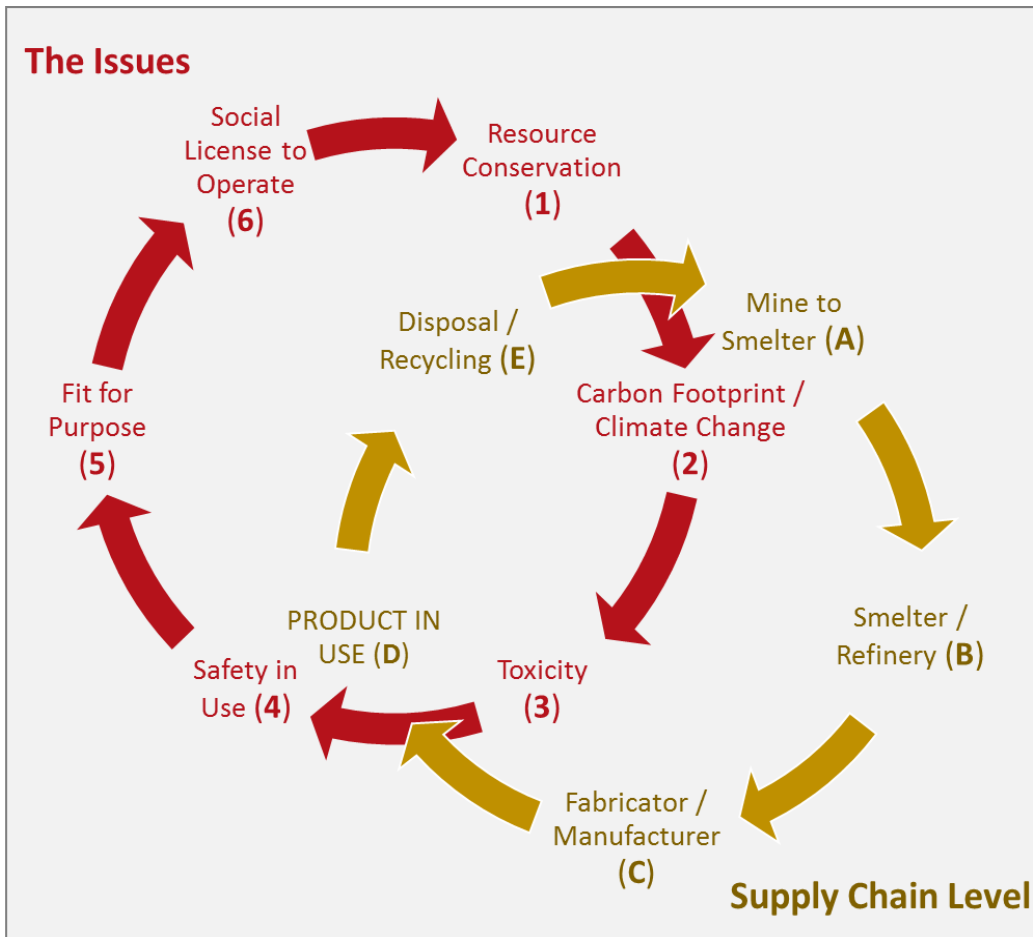
**Product Integrity**  
*Safe to Use, Fit for Purpose*



**Social Licence to Operate**  
*Conflict Minerals, Mining Permit Rules*







	1	2	3	4	5	6
A						
B						
C						
D						
E						

## Select regulations and potential impact

### Chemicals Management

	2005 to Present	To 2025 - Possible	Chain to Cathode
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#### Chemicals Content of Products & Systems

Pb & Cu in Plumbing Systems	Yellow		
Pb in Autos & E/E Equipment	Yellow		
Pb in Consumer Goods	Yellow		
Indirect & Extended Impacts	Yellow		

#### Chemicals in the Supply Chain

GHS & REACH-like Legislation			Yellow dashed X
Other Chemicals Legislation			Yellow dashed X
SOLAS			Yellow dashed X
Occupational Exposure Limits (OEL)			Yellow dashed X
Indirect & Extended Impacts			

#### Chemicals in the Environment

MARPOL			Yellow dashed X
Other Marine, Water & Soil	Yellow		Yellow dashed X
Air Pollution			Yellow dashed X
Indirect & Extended Impacts			

#### KEY

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

### Green Economy & Other

	2005 to Present	To 2025 - Possible	Chain to Cathode
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#### Energy Efficient Equipment

MEPs Motors - Direct	Dark Grey		
MEPs Motors - Indirect	Yellow		
MEPs Transformers - Direct	Dark Grey		
MEPs Transformers - Indirect	Yellow		
MEPs & Refrigerants Aircon - Direct	Light Grey		
MEPs & Refrigerants Aircon - Indirect	Yellow		
MEPs Other - Direct	Light Grey		
MEPs Other - Indirect	Yellow		
Carbon-Neutral Buildings	Light Grey		

#### Green House Gas Reduction and Circular Economy (other)

GHG Reduction - Impact on Smelters			Yellow dashed X
GHG Reduction - Impact on Renewables	Dark Grey		
GHG Reduction - Impact on Autos	Medium Grey		
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	Yellow		
CE - Other Indirect & Extended Impacts	Medium Grey		Yellow dashed X

#### Other Rules

Conflict Minerals etc. (incl. Indirect)			Yellow dashed X
Electrical Safety Rules	Dark Grey		
Energy Efficient Product Labelling			

- 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