



# Implementation and institutionalisation of the strategy in the coming years

Eurometaux

# Outline

The metal sector in a



Role of “exposure”

How?

Implementation & institutionalization?

# Quick sketch of the metal sector



### Driving Economic Growth and Innovation

Europe's non-ferrous metals industry is a global best performer, providing skilled jobs across the EU.

**€120<sub>bn</sub>**  
annual turnover

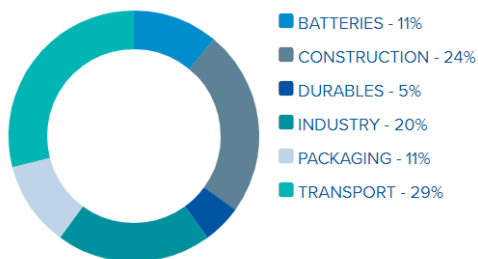
**47<sub>m</sub>**  
tonnes production

**500,000**  
direct employees

**3<sub>m</sub>**  
indirect employees

### Providing a foundation for Europe's major value chains to grow

Non-ferrous metals are essential for Europe's leading manufacturing sectors. Their use in Europe is split across six main sectors:

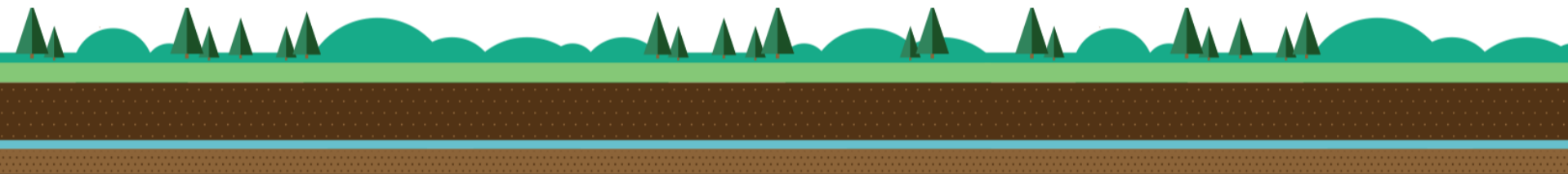
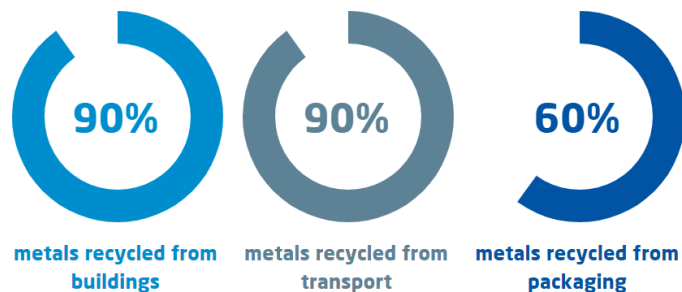


Number of facilities per country



### At the forefront of an EU Circular Economy

Metals are permanent materials which can be recycled again and again, keeping their value in the European economy.



# Global Material resources outlook:

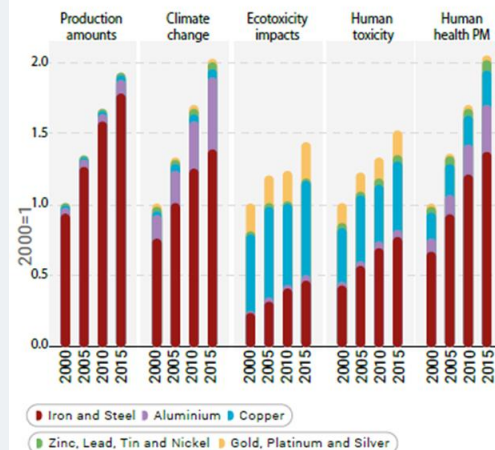
- Strong increase in global demand for goods and services and hence for material resources



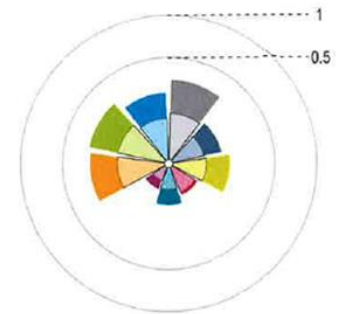
- But also impacts

- GHG emissions in 2000, and the production of metals for 12%.
- Metals extraction and use have a wide range of environmental consequences, including toxic effects on humans and ecosystems. The overall environmental impacts of extraction and processing of key metals are projected to at least double between 2017 and 2060, mostly driven by the increase in the scale of materials use.
- The per-kg environmental impacts of secondary materials are estimated to be an order of magnitude lower than those of primary materials. Policies that further ramp up the transition to secondary materials use and promote circularity will thus lead to overall reductions in environmental impacts.

FIGURE 3.13 Metal production amounts and environmental impacts of metal mining and processing from 2000 to 2015 (selection of 10 metals covering > 95 per cent of global domestic extraction of metal ores in 2015, MFA database).



Aluminium

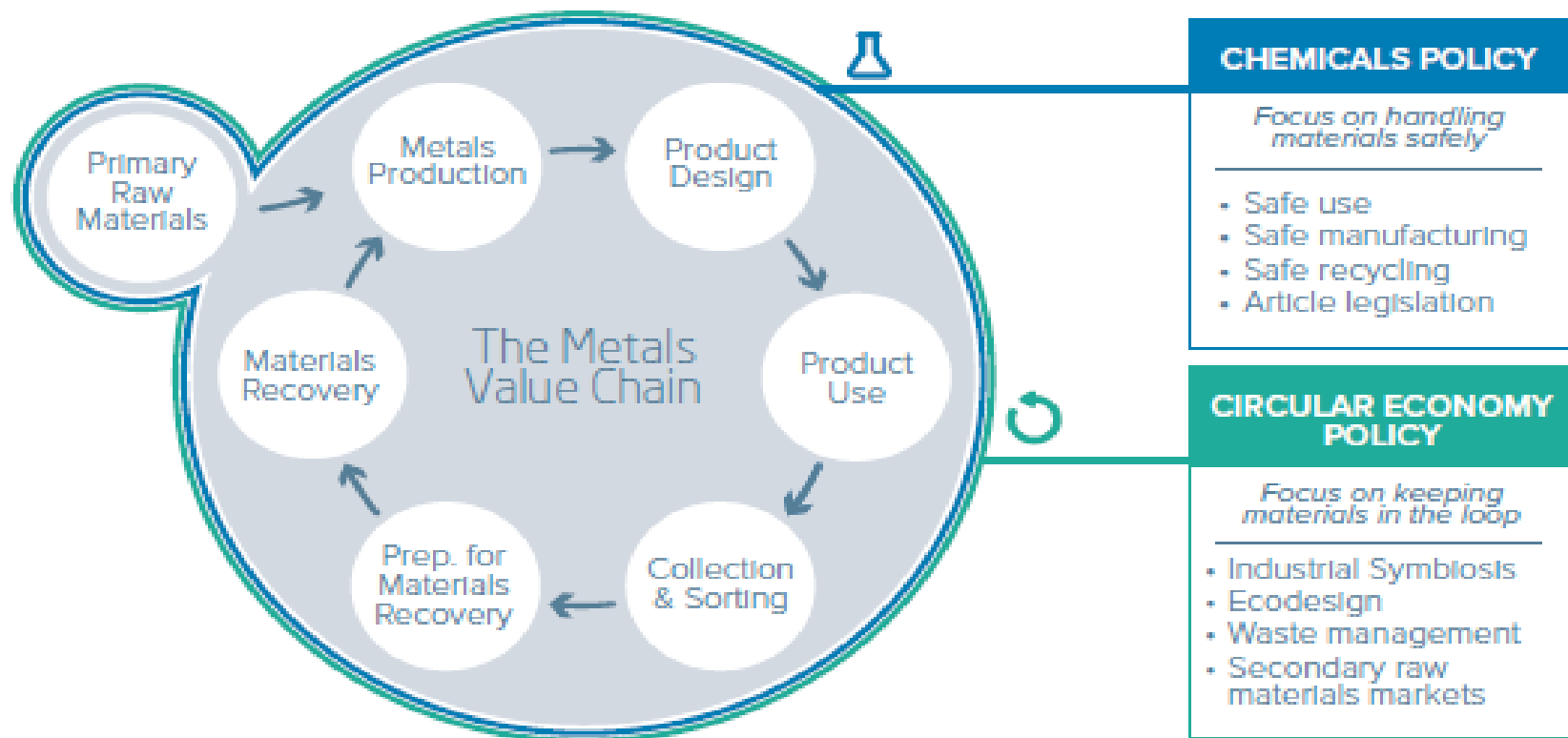


Iron

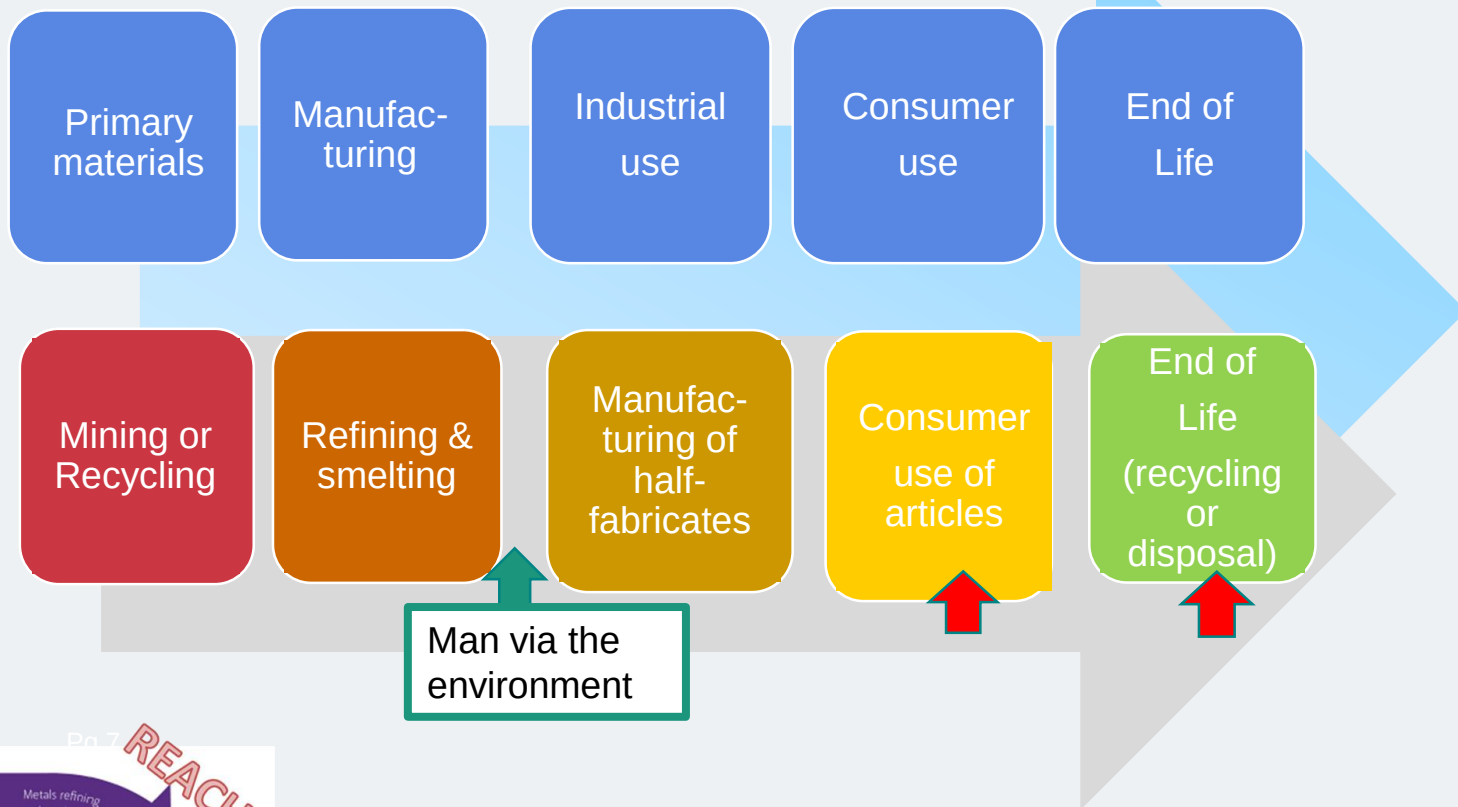




# Trends: closing the loop

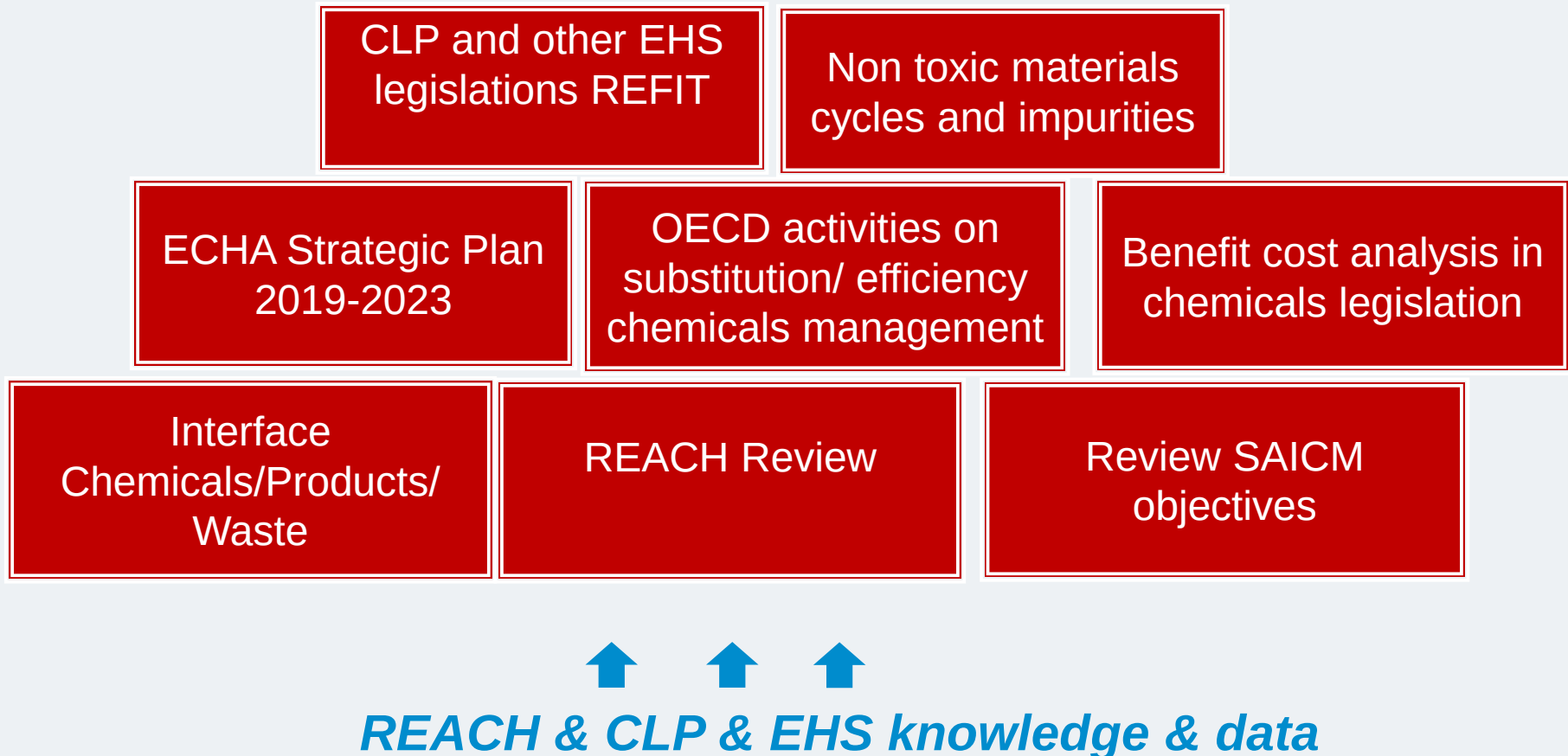


# Trends: societal/regulatory control over the whole supply, including vulnerable groups



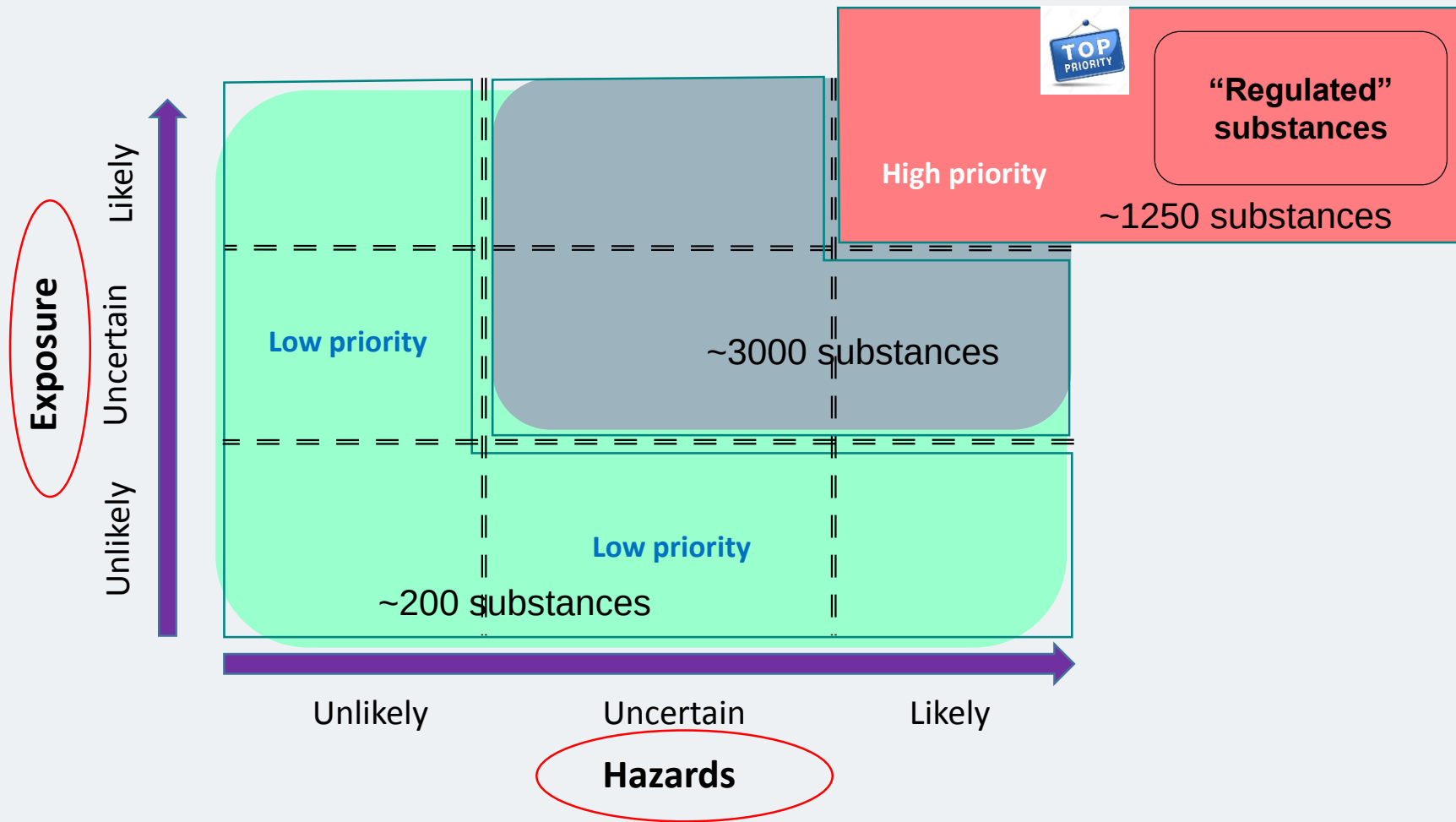
# Trends: EU chemicals policy is much more than REACH & CLP

## *EU 'non/less hazardous' environment thinking*





# Mapping of the chemical universe



# Exposure's role



# Back to basics

$$\text{Risk} = \text{hazard} \times \text{exposure}$$



*Poison is in everything, and no thing is without poison. The dosage makes it either a poison or a remedy.*



# Metals hazards...

| Index No     | International Chemical Identification                                        | EC No | CAS No | Classification                                                                                      | Pictogram, Signal Word Code(s)                    | Labelling                      | Suppl. Hazard statement Code(s)           | Specific Conc. Limits, M-factors                             | Notes | ATP inserted/Updated |
|--------------|------------------------------------------------------------------------------|-------|--------|-----------------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------------------|-------------------------------------------|--------------------------------------------------------------|-------|----------------------|
|              |                                                                              |       |        | Hazard Class and Category Code(s)                                                                   |                                                   |                                |                                           |                                                              |       |                      |
| 082-001-00-6 | lead compounds with the exception of those specified elsewhere in this Annex |       |        | Repr. 1A<br>Acute Tox. 4 *<br>Acute Tox. 4 *<br>STOT RE 2 *<br>Aquatic Acute 1<br>Aquatic Chronic 1 | H360Df<br>H332<br>H302<br>H373 **<br>H400<br>H410 | GHS08<br>GHS07<br>GHS09<br>Dgr | H360Df<br>H332<br>H302<br>H373 **<br>H410 | Repr. 2; H361f: C ≥ 2,5 %<br>*<br>STOT RE 2; H373: C ≥ 0,5 % | 1 A   | CLP00                |

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|--------------|--------------------------------------------------------------------|--------------------------------|--------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------|--------------------------------|---------------------------------------------------|----------------------------------|-------|----------------------|
|              |                                                                    |                                |                                | Hazard Class and Category Code(s)                                                |                                                   |                                |                                                   |                                  |       |                      |
| 048-002-00-0 | cadmium (non-pyrophoric) [1]<br>cadmium oxide (non-pyrophoric) [2] | 231-152-8 [1]<br>215-146-2 [2] | 7440-43-9 [1]<br>1306-19-0 [2] | Carc. 1B<br>Muta. 2<br>Repr. 2<br>Acute Tox. 2 *<br>STOT RE 1<br>Aquatic Acute 1 | H350<br>H341<br>H361fd<br>H330<br>H372 **<br>H400 | GHS06<br>GHS08<br>GHS09<br>Dgr | H350<br>H341<br>H361fd<br>H330<br>H372 **<br>H410 |                                  |       | CLP00                |

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|--------------|---------------------------------------|-----------|------------|------------------------------------------------------------|----------------------------------|-----------------------|----------------------------------|----------------------------------|-------|----------------------|
|              |                                       |           |            | Hazard Class and Category Code(s)                          |                                  |                       |                                  |                                  |       |                      |
| 028-004-00-8 | nickel dioxide                        | 234-823-3 | 12035-36-8 | Carc. 1A<br>STOT RE 1<br>Skin Sens. 1<br>Aquatic Chronic 4 | H350i<br>H372 **<br>H317<br>H413 | GHS08<br>GHS07<br>Dgr | H350i<br>H372 **<br>H317<br>H413 |                                  |       | CLP00/ATP01          |

| Index No     | International Chemical Identification                        | EC No     | CAS No    | Classification                                         | Pictogram, Signal Word Code(s) | Labelling             | Suppl. Hazard statement Code(s) | Specific Conc. Limits, M-factors | Notes | ATP inserted/Updated |
|--------------|--------------------------------------------------------------|-----------|-----------|--------------------------------------------------------|--------------------------------|-----------------------|---------------------------------|----------------------------------|-------|----------------------|
|              |                                                              |           |           | Hazard Class and Category Code(s)                      |                                |                       |                                 |                                  |       |                      |
| 029-001-00-4 | copper chloride;<br>copper (I) chloride;<br>cuprous chloride | 231-842-9 | 7758-89-6 | Acute Tox. 4 *<br>Aquatic Acute 1<br>Aquatic Chronic 1 | H302<br>H400<br>H410           | GHS07<br>GHS09<br>Wng | H302<br>H400<br>H410            |                                  |       | CLP00                |



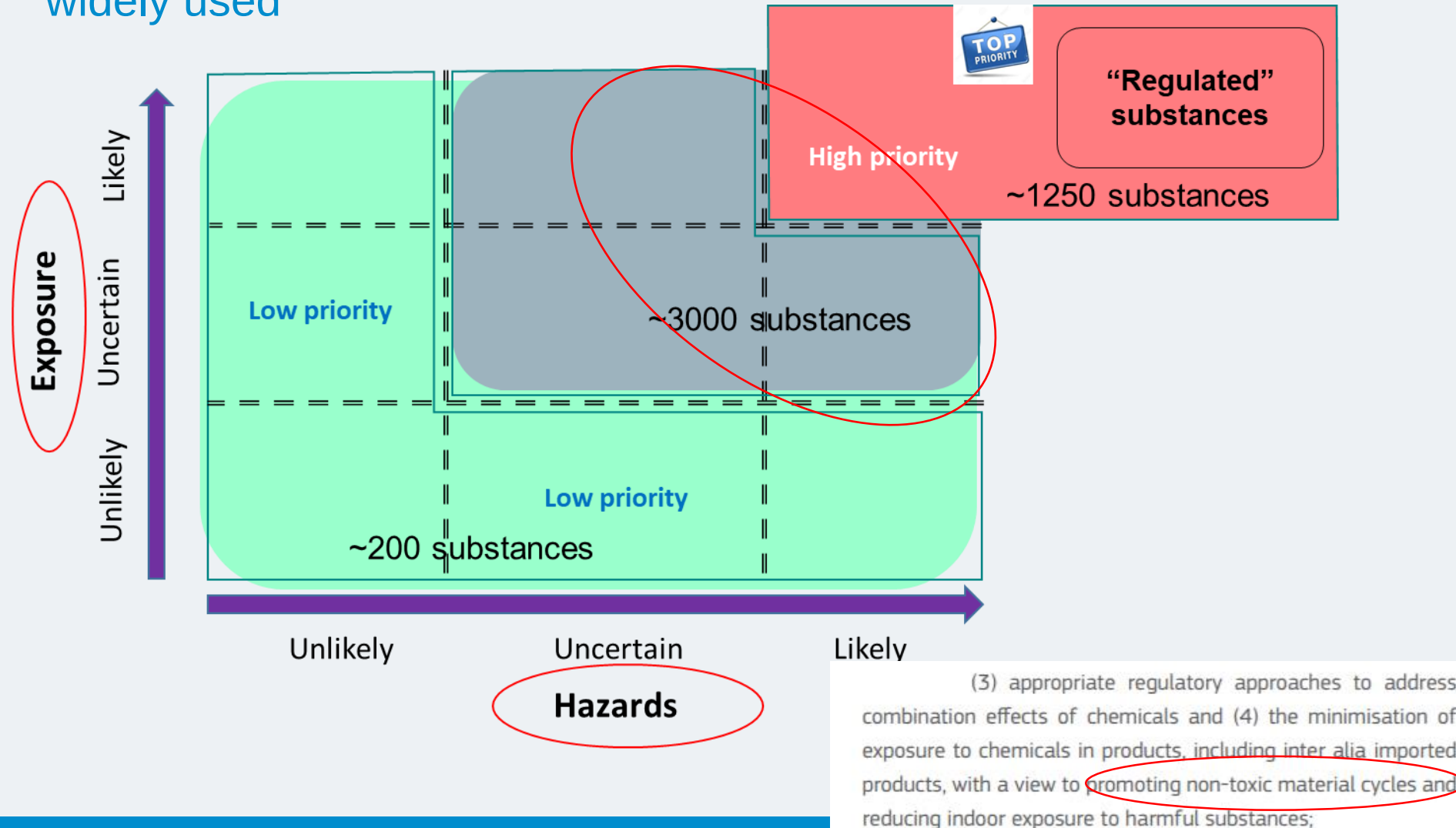
Wide dispersive uses...



# .. a non-toxic circular economy



- with a number of hazardous substances or substances that are widely used





$$\downarrow \text{Risk} = \text{hazard} \times \text{exposure} \downarrow$$



*Poison is in everything, and no thing is without poison. The dosage makes it either a poison or a remedy.*

# In practice: a risk controlled environment

## 1. Supply Chain

Address all concerns with chemical substances



## 2. Wider Society Protect all groups from harmful toxicity



# In practice: a risk controlled environment

## 1. Supply Chain

Address all concerns with chemical subst

- Document exposure workplace and environment including man via the environment

Reduce "hazardousness"

Concern: Regrettable or only hazard-based substitution

- Clarify uses & volumes
- Document exposure workplace and environment/ including man via the environment

Guarantee safe treatment of waste and end-of-life products

Concern: Rising impurity levels, i.e. in slags

Ensure proper supply- chain management

Concern:

- What is the exposure of consumers?

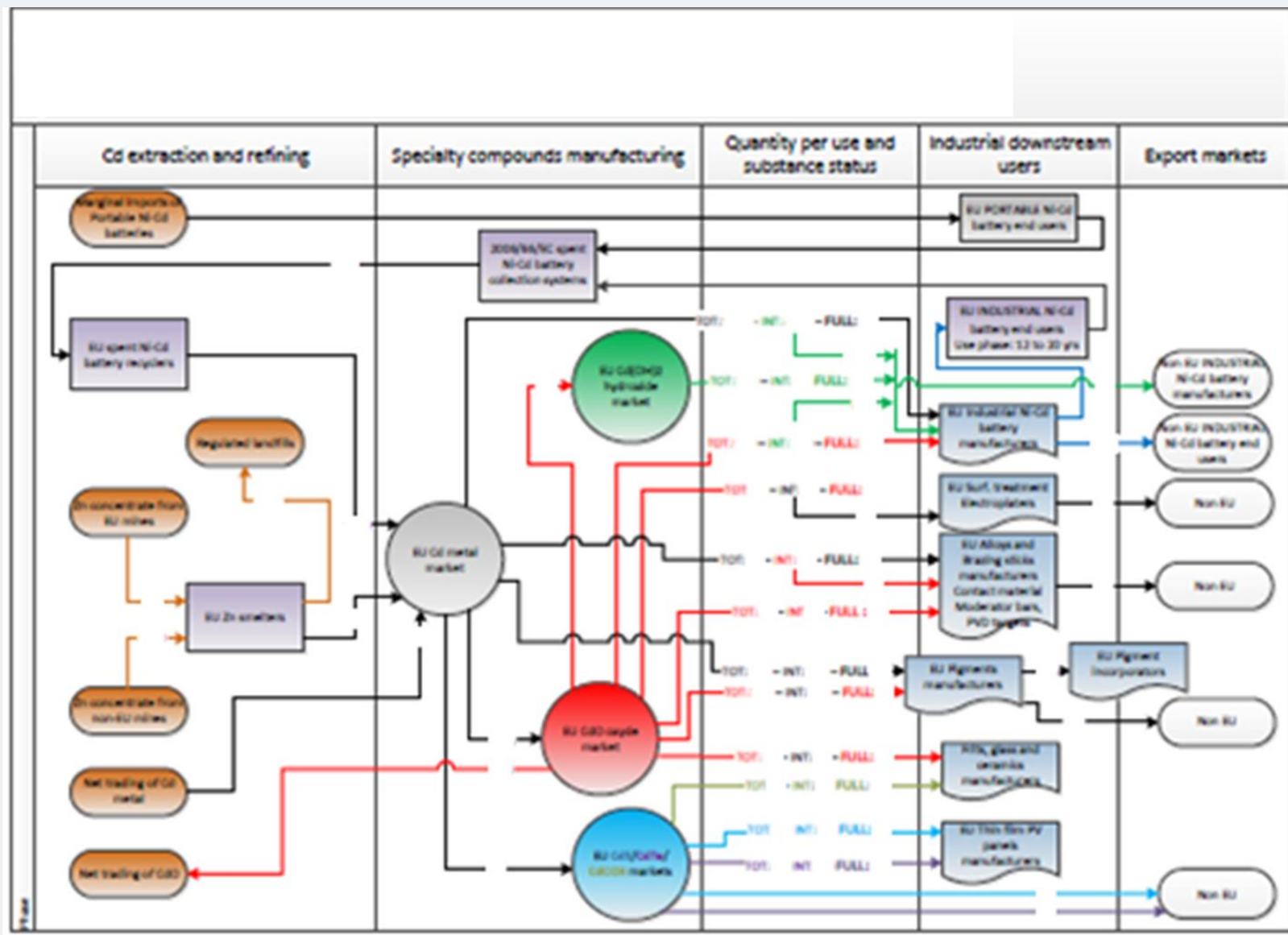
on safe use

Better track chemicals in articles

Concern: Releases from non-safe uses



# 1. Clarify materials flow analysis and uses





## 2. Document exposure

- **Workplace/environment/man via the environment**

- **Measured** data: ensure quality/reliability/representativity
  - *“Klimisch”-like criteria?*
  - *And/or ensure appropriate **contextual information** is present in dossier*
  - Projects in the sector (workplace)
    - Work on data collection/data reporting, including aspects of quality and contextual information.
    - Respirable/inhalable: sampling and compliance, conversion factors from inhalable to respirable exposure levels
    - Dermal exposure

## 2. Document exposure

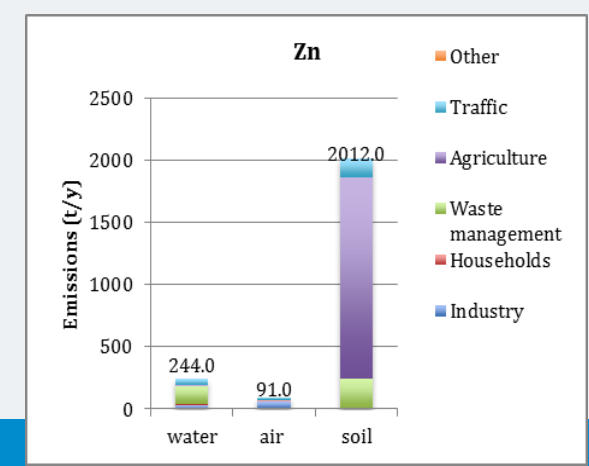
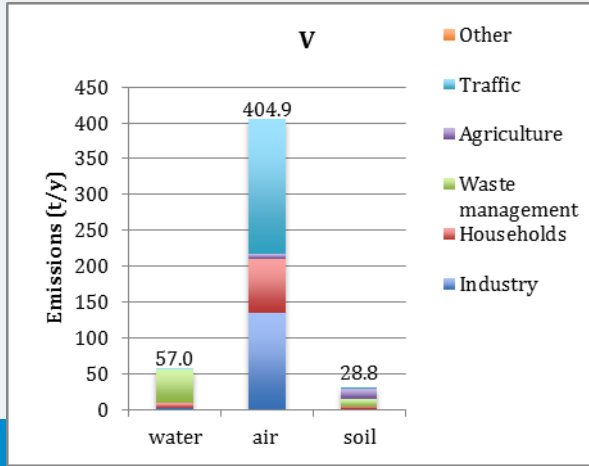
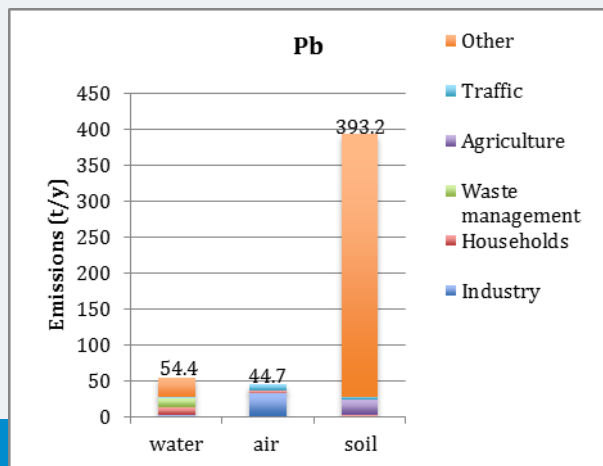
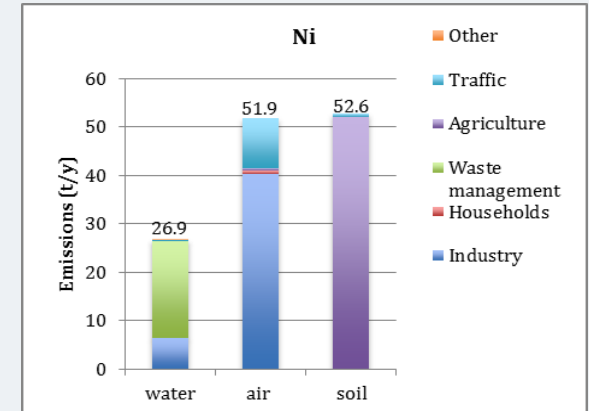
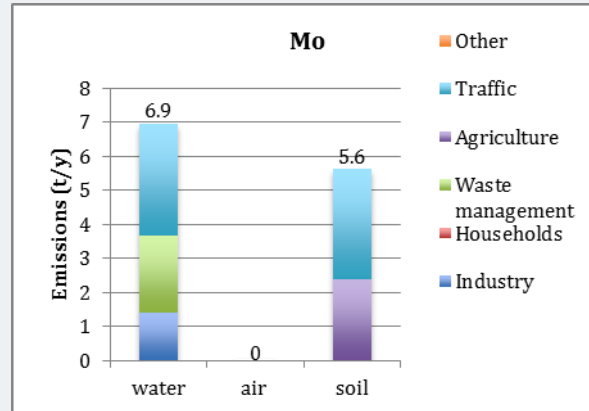
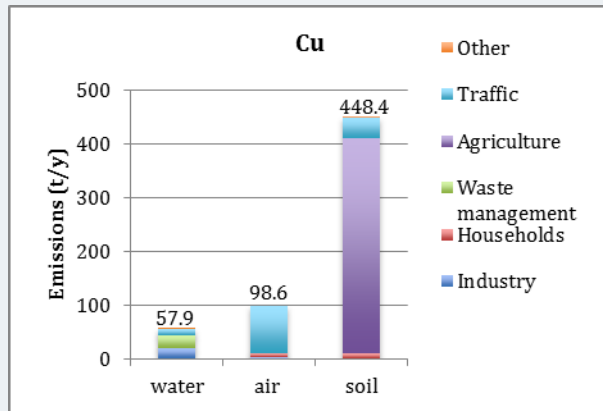
- **Modelled** data:
    - *Explain **input parameters** and increase **robustness***
    - Projects:
      - Work on **robustness** model/database behind MEASE 2.0/SpERCs
      - Metals plug-in for EUSES
  - **Analogous** data: “robustness” & assumptions behind
  - **Human biomonitoring**
- 
- Further than manufacturing/recycling ...rest of the supply chain

### 3. Exposure at 'articles stage'

- Document and report exposure
  - **Measured** data:
    - *estimate by using release data?*
  - **Modelled** data:
    - *SpERCs*
    - *??*
  - Biomonitoring (limited)

## 4. Identifying sources of exposure and contributions along the lifecycle= putting things in perspective

- Relative contribution of different sources by metal
  - Soil loadings often most relevant (agriculture and Pb shot)
  - Traffic contribution often important

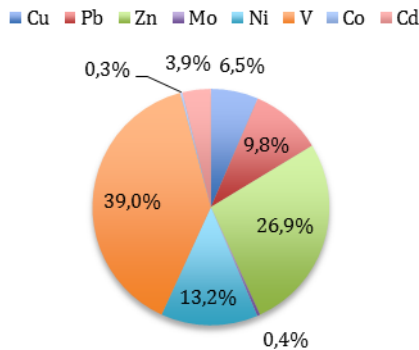


# 4. Identifying sources of exposure and contributions along the lifecycle= putting things in perspective

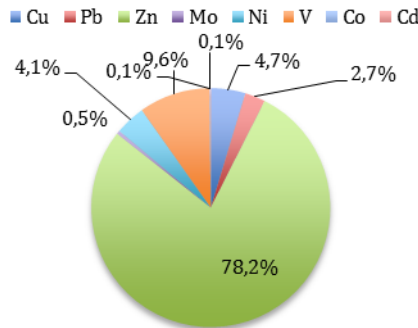
## Metal emission loadings by source (examples)

- The compilation of emissions per source helps defining most relevant contributors and potential RMM if relevant

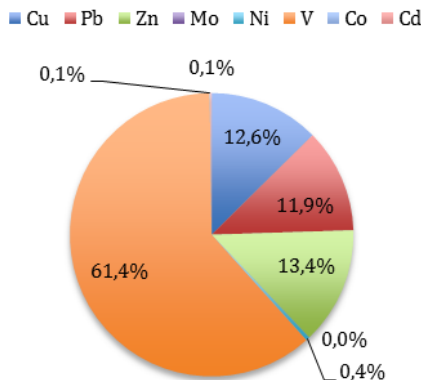
Industry



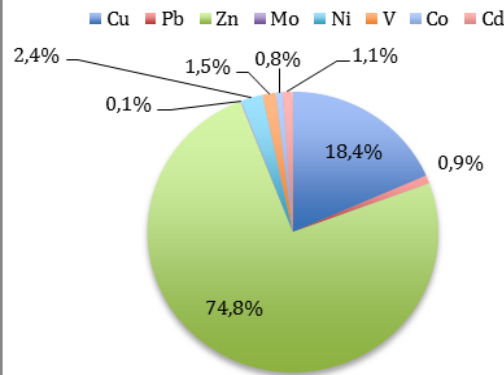
Waste management



Households



Agriculture



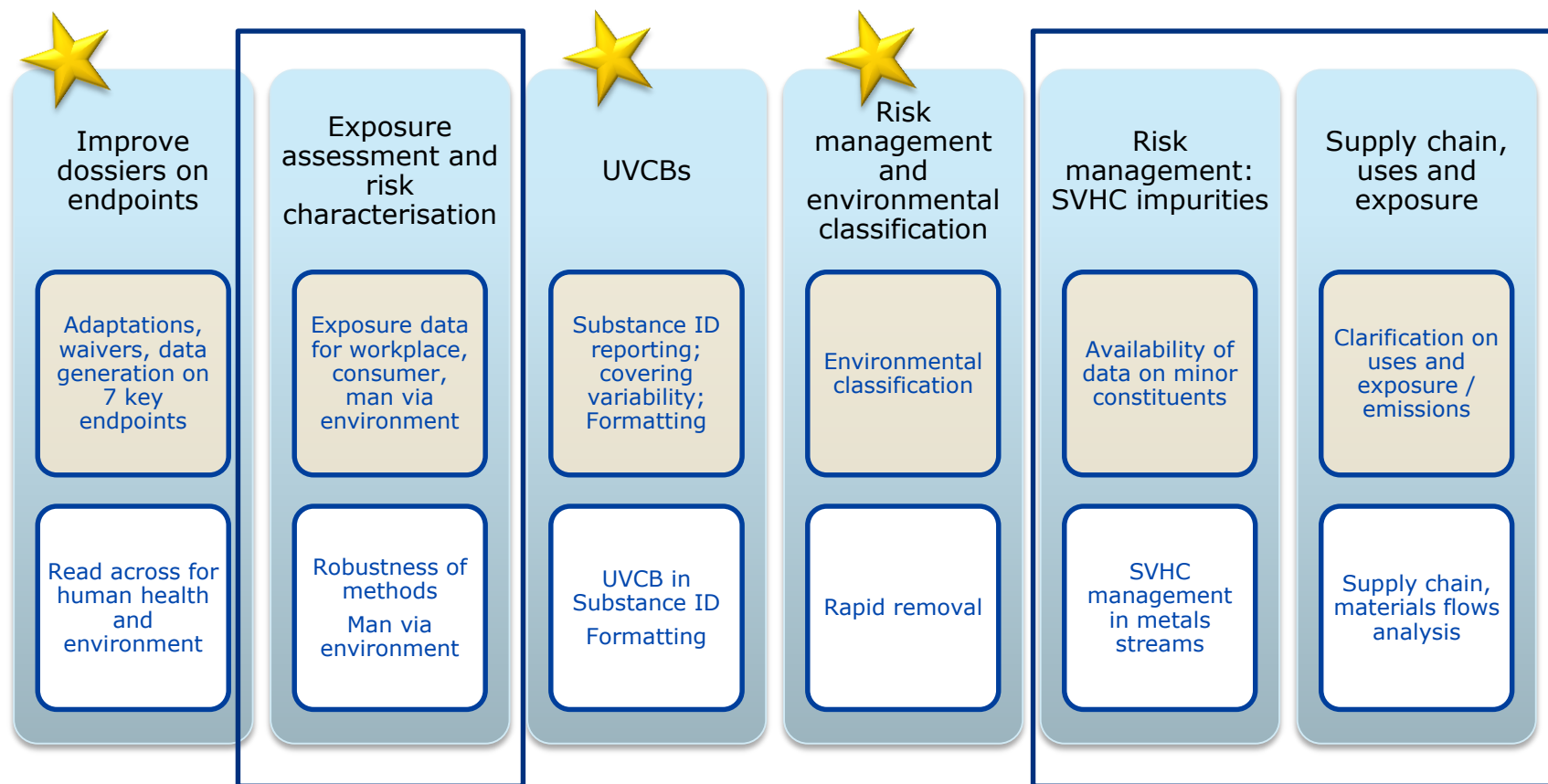
# Implementation and institutionalisation



# At sector level: Metals and Inorganics Sectorial Approach (MISA)

- A **voluntary programme** set up by ECHA and Eurometaux, to:
  - address technical and scientific issues facing the metals and inorganics sectors and
  - to improve the registration dossiers in these sectors
- **Endorsed** by metals and inorganics consortia/associations by signing a framework for cooperation between Eurometaux and ECHA
- Timing: October 2018 - end of 2020

## 6 High Priority Issues defined jointly



# Outputs/deliverables

- MISA outputs
  - Better exposure information in the supply chain (measured – modelled data)
  - Updated registration dossiers
  - Better preparation for Risk Management discussions
- Better insights on consumer exposure to articles
- ‘Source apportionment’

# ‘Institutionalisation’

- “Exposure control” acknowledged as part of acceptable materials cycles
  - Discussion on how far exposure reduction should go
- Development of quality criteria for exposure datasets
- Human biomonitoring better acknowledged
- Acceptance of SpERCs/MEASE
- EUSES metal plug-in/metal specificities available
- “RMOa data section” in REACH dossiers to include considerations on exposure (sources)

# THANK YOU

Also to Daniel Vetter, Frederik Verdonck, Steven Verpaele, Lorenzo Zullo and Hugo Waeterschoot

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