Eurometaux

METALS: AT THE HEART OF EUROPE

HAZBREF – Stakeholder Conference

Industry perspective on managing hazardous chemicals in industry, linking IED and REACH

19 March 2018

Al Cu Ni Pb Zn Au Ag Pt Sb Be Si Co Mo V Sn Pd Ru Re Os Ir W Ta Ge Se Ga Cr Mg

Eurometaux: the EU voice of non-ferrous metals producers & recyclers

19 Companies

ALBEMARLE · Alcoa · Atlantic Copper (A Freeport-McMoRan Company) · GLENCORE · Aurubis · Boliden · Ecobat Technologies · Elkem (A Bluestar Company) · Hydro · KGHM Polska Miedź · Metallo (The Furnace of Innovation) · Norilsk Nickel · nyrstar · RioTinto · trimet · umicore · Vale · Wieland · Eramet

11 National Associations

AGORIA (no future without technology) · Metallinjalostajat (Association of Finnish Steel and Metal Producers) · ASSOMET · A&M · IGMNiR (Economic Chamber of Non-Ferrous Metals and Recycling) · Johnson Matthey · Norsk Industri · VNM · WVMETALLE · WKO

9 Associate Members

BeST (Beryllium Science & Technology Association) · Cobalt Institute · EPMA · Euro Alliages · EUROBAT · International Antimony Association · IMOA (International Molybdenum Association) · RECHARGE · VANITEC

6 EU Commodity Associations

EUROPEAN ALUMINIUM · Nickel INSTITUTE · European Copper Institute · ila International · Zinc (essential for life) international zinc association

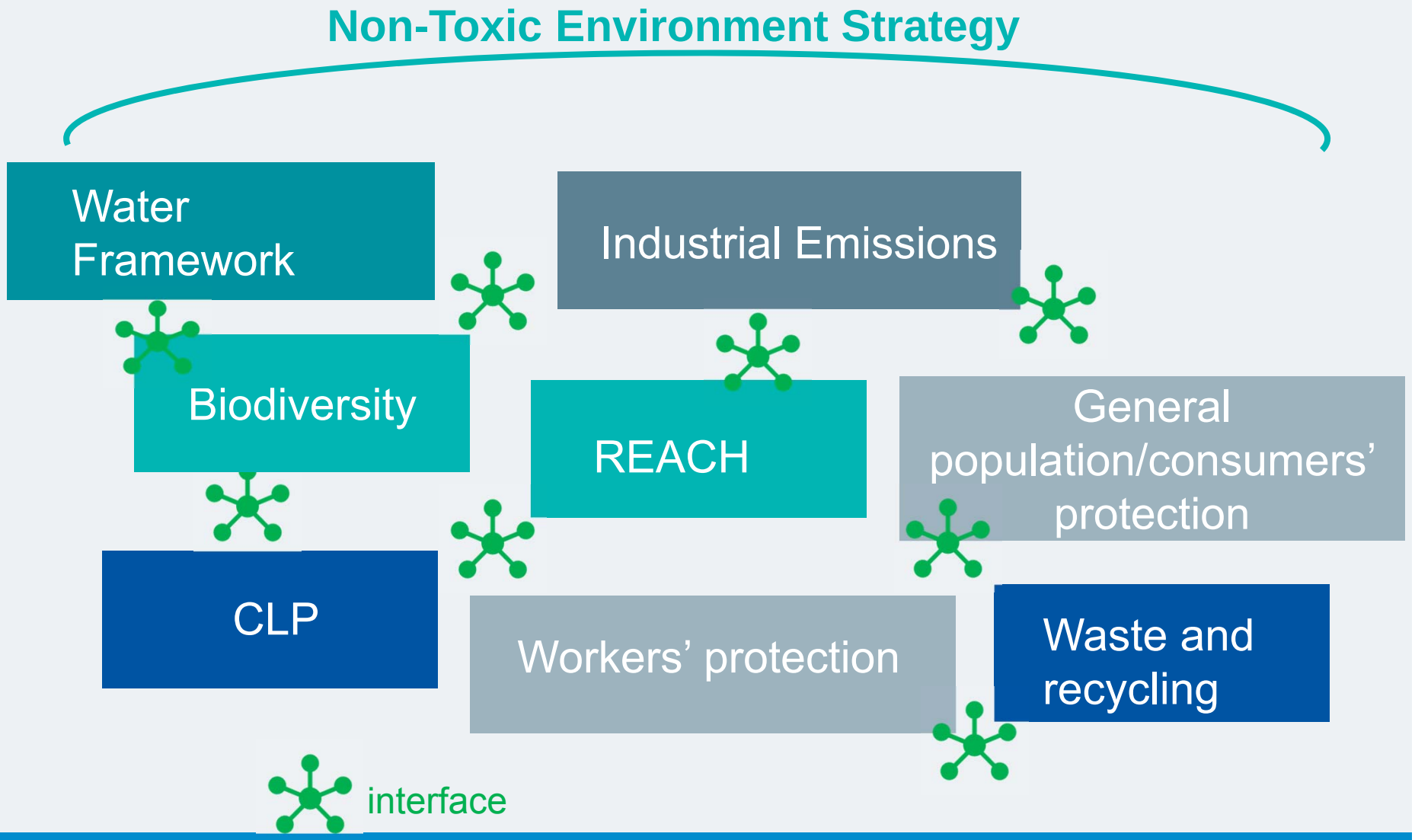
23 REACH consortia

Outline

1. Eurometaux's commitment to safe use of chemicals and to a functioning Circular Economy
2. Can we link IED  and REACH  ?
3. Conclusions

1. Eurometaux’s commitment to safe use of chemicals and to Circular Economy

Non-Toxic Environment Strategy – What will it cover?



A shared aim: hazardous substances must be used and recycled safely

EU Non-Toxic Environment Strategy

"the development of sustainable substitutes including non-chemical solutions"

1/3

of all industrial metal elements are on a "hazard" list globally

?

We must ensure these metals **are used and recycled safely**

Our ambition: A risk-controlled environment

Risk Controlled Environment → *Hazardous substances are only used when **exposure to human health or the environment** is controlled*

Industry's perspective is risk-focused:

- Companies' commitment to responsible production and materials stewardship
- Reinforced by the burden of proof imposed by REACH

Risk = hazard x exposure

How are we working towards a risk-controlled environment? – Three steps

Risk-controlled environment =

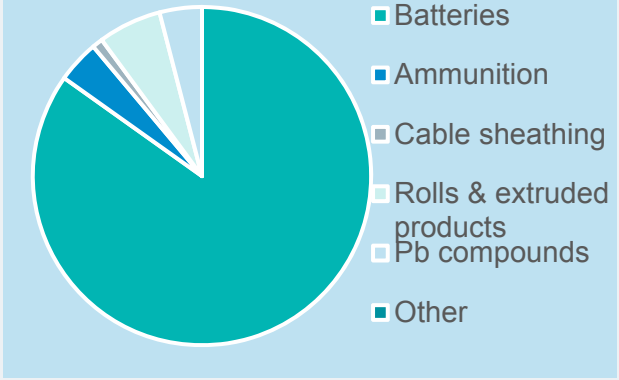
1. Mapping where our metals are used +

2. Evaluating where exposure happens +

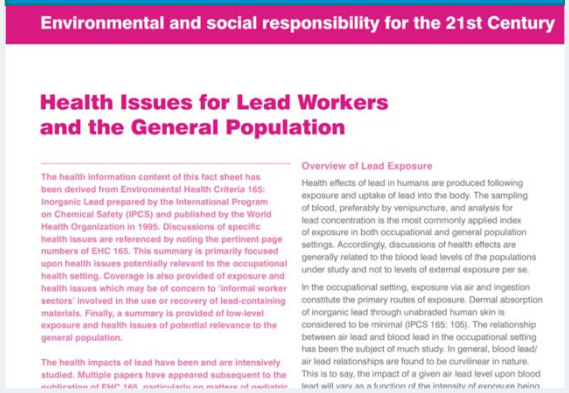
3. Implementing risk control measures and communication

For example: Lead

Uses of Lead



Exposure scenario



Environmental and social responsibility for the 21st Century

Health Issues for Lead Workers and the General Population

The health information content of this fact sheet has been derived from Environmental Health Criteria 165: Inorganic Lead prepared by the International Program on Chemical Safety (IPCS) and published by the World Health Organization in 1995. Discussions of specific health issues are referenced by noting the pertinent page numbers of EHC 165. This summary is primarily focused upon health issues potentially relevant to the occupational health setting. Coverage is also provided of exposure and health issues which may be of concern to 'informal worker sectors' involved in the use or recovery of lead-containing materials. Finally, a summary is provided of low-level exposure and health issues of potential relevance to the general population.

The health impacts of lead have been and are intensively studied. Multiple papers have appeared subsequent to the

Overview of Lead Exposure

Health effects of lead in humans are produced following exposure and uptake of lead into the body. The sampling of blood, preferably by venipuncture, and analysis for lead concentration is the most commonly applied index of exposure in both occupational and general population settings. Accordingly, discussions of health effects are generally related to the blood lead levels of the populations under study and not to levels of external exposure per se.

In the occupational setting, exposure via air and ingestion constitute the primary routes of exposure. Dermal absorption of inorganic lead through unabraded human skin is considered to be minimal (IPCS 165: 105). The relationship between air lead and blood lead in the occupational setting has been the subject of much study. In general, blood lead/air lead relationships are found to be curvilinear in nature. This is to say, the impact of a given air lead level upon blood lead will vary as a function of the intensity of exposure being

Worker protection measures

ila International Lead Association

EUROBAT ASSOCIATION OF EUROPEAN AUTOMOTIVE AND INDUSTRIAL BATTERY MANUFACTURERS

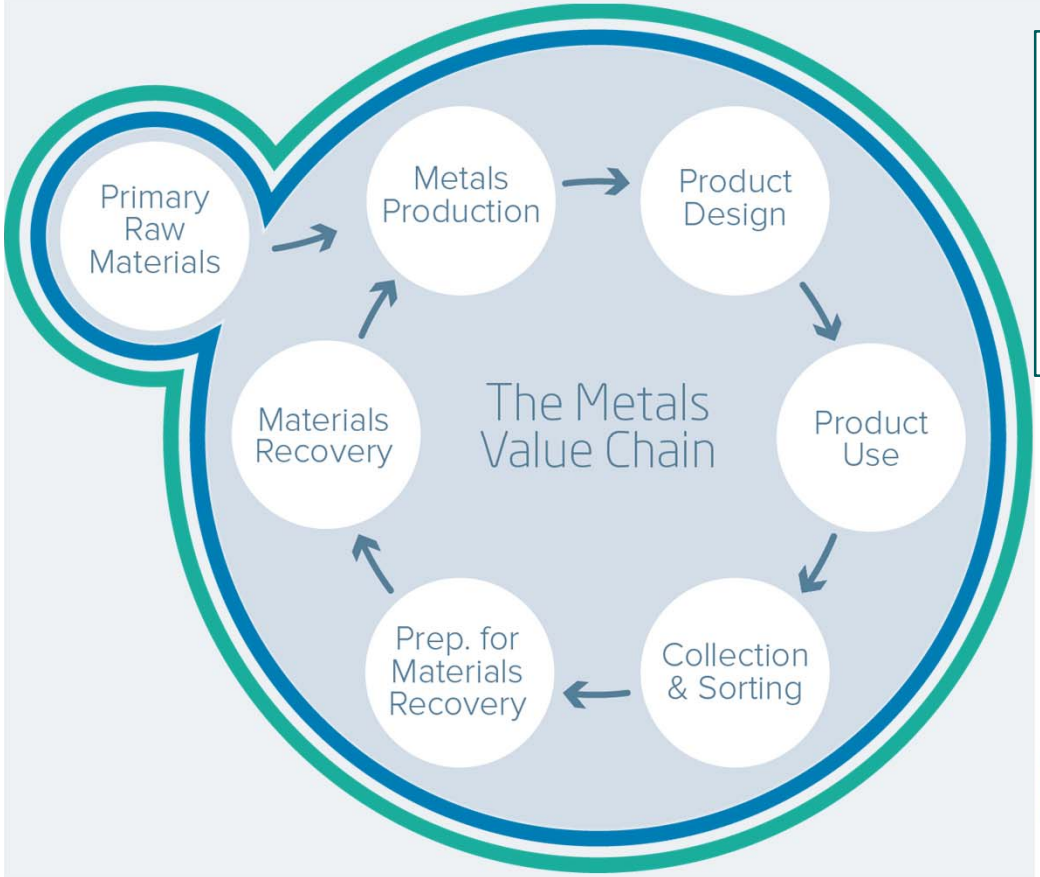
Battery Council INTERNATIONAL

Lead and lead battery industries announce ambitious new targets to protect workers

(Brussel 15 June, 2017) - Battery Council International (BCI), EUROBAT and the International Lead Association (ILA), have announced a new voluntary target to protect worker health in the lead producing and battery manufacturing and recycling industries.

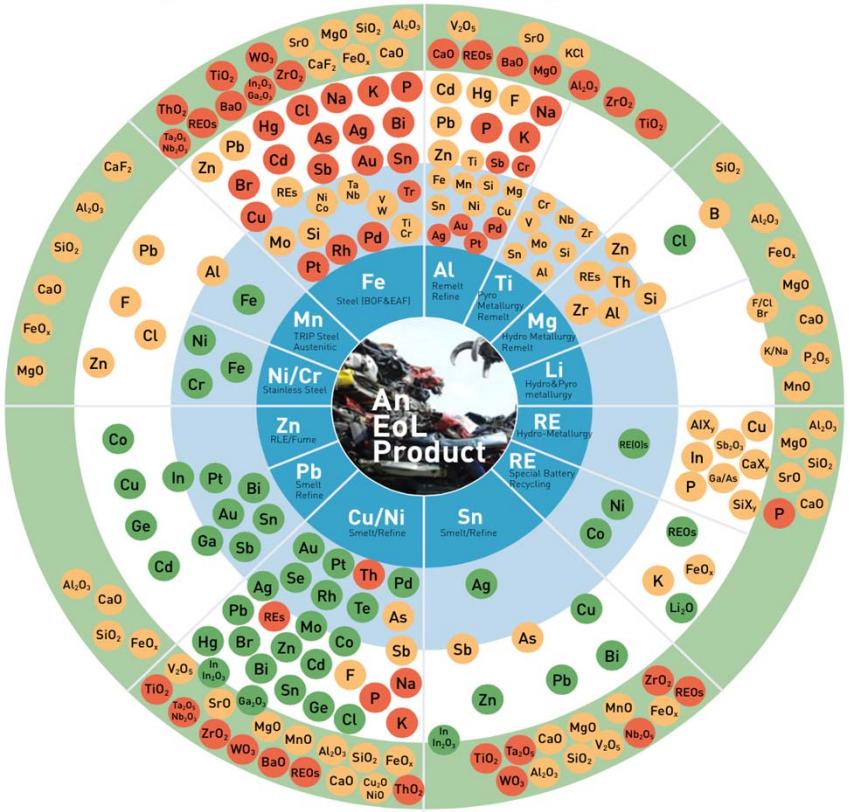
Significant improvements have already been recorded in the now completed three-year voluntary programme to reduce worker blood lead levels to below 30mcg/dL (microgrammes per deciliter) and the new target of 20mcg/dL will reduce the level of lead in blood of employees still further - BCI represents battery manufacturers in North America, EUROBAT in Europe, Africa and the Middle East and ILA represents lead producers principally in Europe and North America

Closing the loop, linking safe use and Circular Economy



Recycling is often the most efficient & relevant CE scenario.

Metal wheel: *affinity of different metals for each other and potential for recovery (UNEP 2013)*



2. Can we link IED and REACH?

Starting from an IED perspective

Industrial Emission Directive

Techniques applied within sector X
- Processes
- Techniques to prevent and minimize emissions, water consumption, …
  → Process-integrated
  → End-of-pipe techniques

Key **E**nvironmental **I**ssues

cross media effects

State of the art techniques

BATs → BAT-AE(P)Ls

collecting data on current emission levels, including contextual information & info on techniques applied

Setting permit conditions for company Y belonging to sector X

- FOCUS on industrial activities (Annex I – IED)
- FOCUS on TECHNIQUES
- Rules on **integrated prevention and control** of pollution arising from industrial activities
- Rules designed to prevent or, *where not practicable*, to reduce **emissions into air, water and land**

  and

  to prevent the **generation of waste**,

  in order to achieve a high level of protection of the environment taken as a whole

Making the best use of the IED BREFs as an instrument to reduce emissions

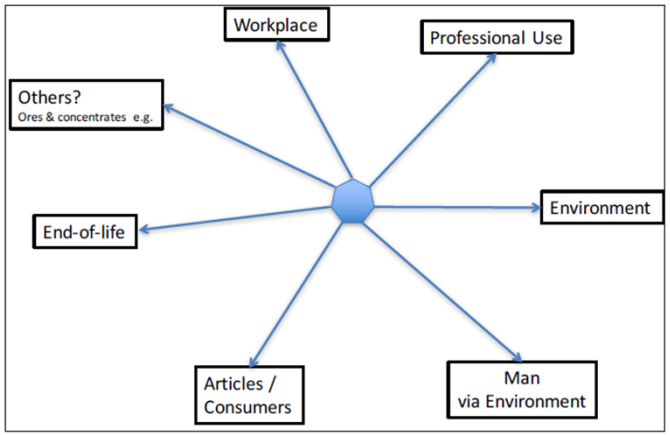
- BREF revision process may sometimes appear pretty conservative:
  - No data → no BAT-AELs → no prevention / reduction of emissions
  - Concerns and (potential) risks adequately considered?
- Need & willingness to break the loop and address '**relevant**' hazardous substances
  - Prevention & reduction of emissions follow other paths too
- Identification via various lists and data sources is sensible, but needs to be meaningful and practicable. Issues are:
  - **What is "relevant"** ?
  - **How we prioritize** ? → scope & tools (e.g. prioritization exercise under the WFD – PS review)

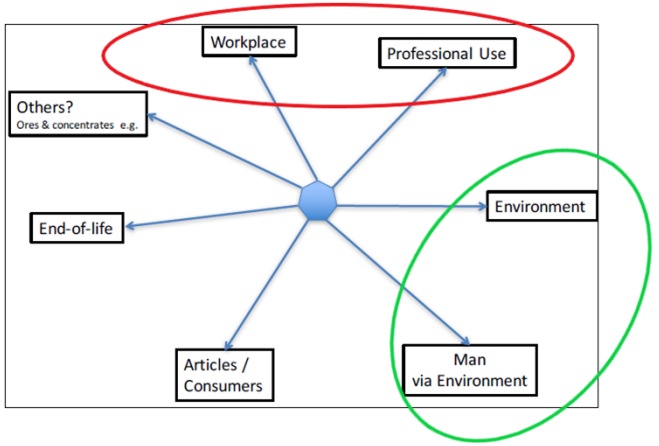
Starting from a REACH perspective

- **Starting-point:** a substance with a concern/risk to be managed
- **How?** performing a broad Risk Management Options analysis
  - Putting the (potential) concern/risk in context
  - Compare the different Risk Management Options
  - Select and justify the appropriate Risk Management Measure(s)
  - Identification of data needs and ways forward to improve database
- **Output:** management of concern/risk using a systematic and holistic approach, making best use of strengths of available tools and identification of possible data needs

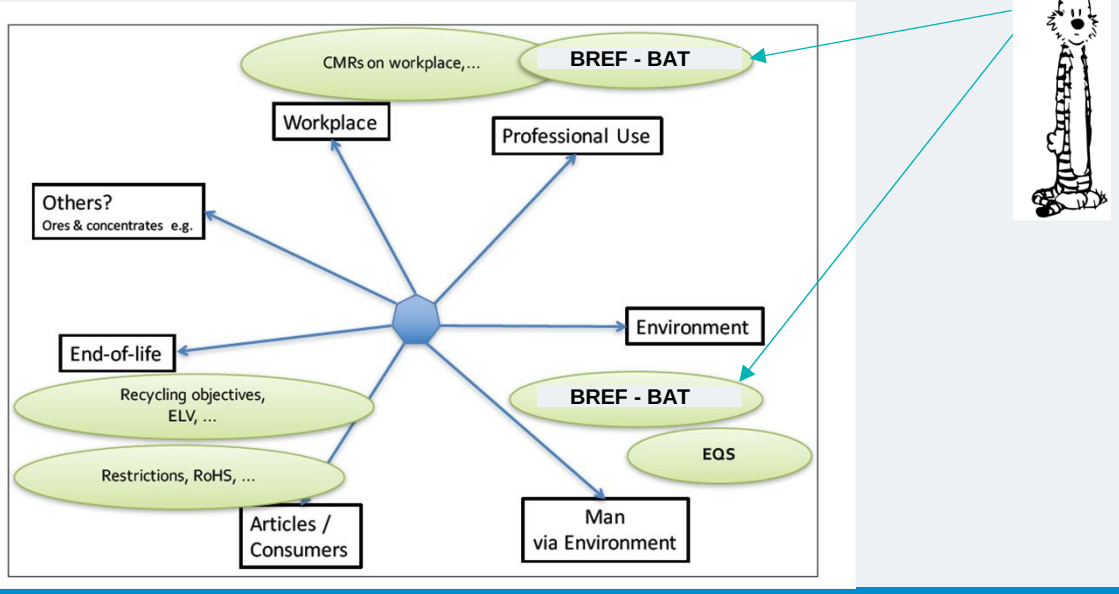
Steps…in a nutshell

- Where is the substance present? Where is there exposure/release?



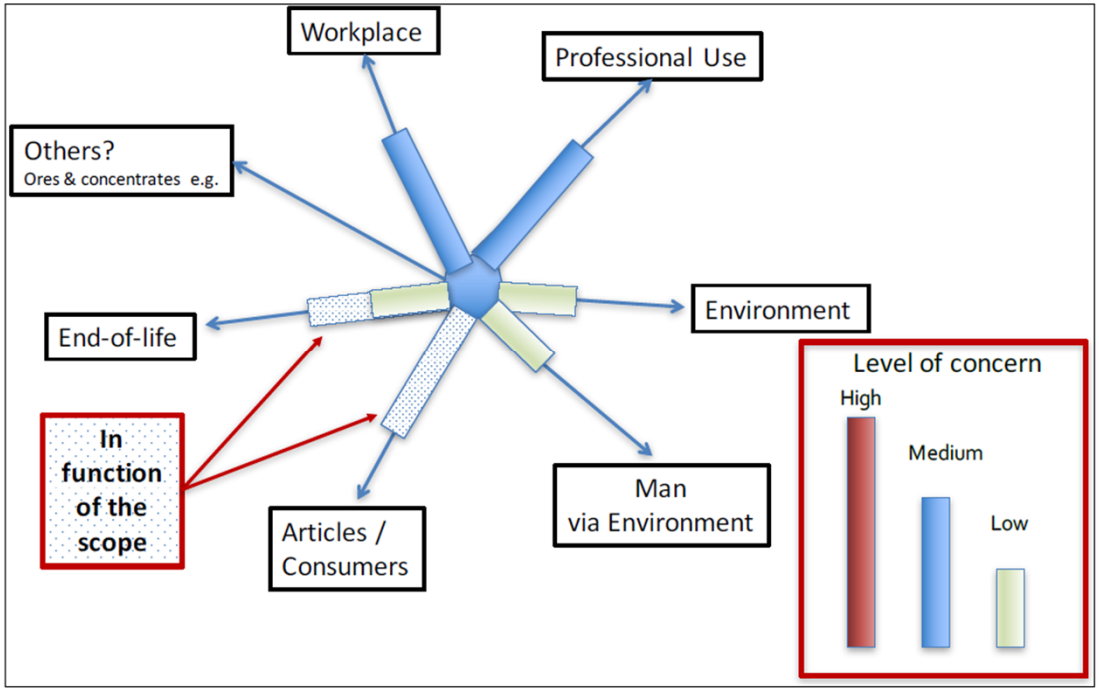


- What are the existing regulatory risk management measures or what could they be?



Steps… in a nutshell

- How would the (remaining) level of concern considering existing RMMs be rated?



- Identification of risk management options:
  - list **all** potential options with their scope/basic definitions
  - discuss the different options along criteria like effectiveness, practicality and regulatory consistency but also their economic impacts and human health and environmental benefits

Outcomes

- **Synthesis of a comparison of different risk management measures explored in a holistic way**

manufacturers		Overall effectiveness	Overall practicability	Overall regulatory consistency	Overall economic impact	Overall Human Health and Environmental Benefit	Overall proportionality ranking	Final ranking
Substitution (Industry)		3	**1**	**5**	2	3	14	2
Existing legislation (e.g. OEL, BATNEEC, etc.)	OEL	4	**3**	**4**	6	1	18	4
	BAT	4	**5**	**6**	5	1	21	6
Restriction		1	**2**	**1**	3	3	10	1
SVHC selection		6	**6**	**1**	1	6	20	5
Authorisation		1	**4**	**1**	4	5	15	3

Outcomes

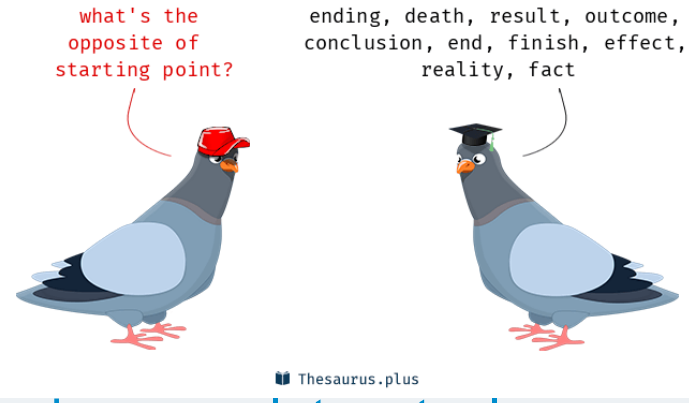
- **Identification of key data needs for the identified risk management options:**
  - Some data present in the REACH dossiers/database but others not and need to be generated or collected e.g. under the WFD or BREFs and communicated

Some data needs (generic) — = Not in Registration dossier

	REACH Registration Dossier	Accuracy	Uncertainty	Restriction	EQS (WFD data?)	BAT (BREFS?)
Substance-related data	• Human Toxicity • Regulations	DNELS?	DNELS?	+ +	+ +	
	• Environmental Toxicity • Regulations	DNELS?	DNELS?	+ +	++	
Process and functionality related data	• Volumes (overall) • Exposure (generic) • Process and product regulations	Reality?		+ + +	+ + +	+ +
	• Volumes per use / process • Functionality per use/process • Alternatives per use/process			+ + + plus tox profile	+ - -	+ - -
Value chain-related data	• # legal entities / plants • # Workers exposed and dependent on substance use • Market (volumes, trade) • Price elasticity • Cross-value chain interrelations • Life-cycle dimensions (sustainability issues, recycling dynamics) • Costs current vs. alternatives/ non-use situation • Costs current vs. new technology			+ + + + + + + If combined/ integrated approach	Regional Population + - +	+ - - - + - +

3. Conclusions

Some conclusions = Starting points



- When aiming at a risk controlled environment, it is important to look at **the overall picture** and consider scopes, strengths & limits of the various regulatory tools, enhancing their links, also in terms of communication
- **Risk Management Options analysis** can be of great help in contextualizing and framing the (potential) concerns/risks
- The assessment of **relevance of hazardous substances** within the targeted industrial activities and the related prioritization remain crucial and should remain manageable

- Eurometaux remains committed to make use of the REACH data and strengthen the links between various pieces of legislations (IED, REACH, WFD, …) to manage risks

THANK YOU

Annalisa Bortoluzzi & Violaine Verougstraete

Eurometaux EHS & REACH Committee

@Eurometaux

www.eurometaux.eu

Avenue de Broqueville 12 | B-1150 Brussels | Tel: +32 (2) 775 63 11 | eurometaux@eurometaux.be

Back-up slides

Europe’s metals industry – United market power

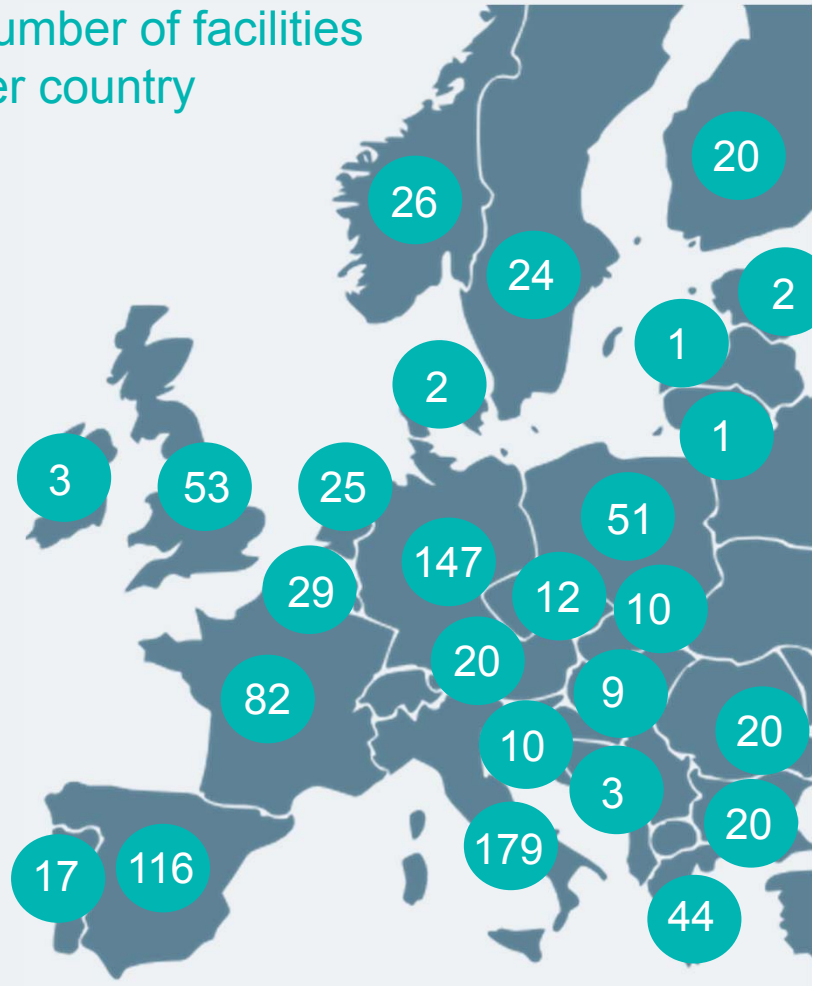
900+
facilities

500,000
direct jobs

€120 bn
annual turnover

1/5
global production

Number of facilities per country



What has our industry already achieved?
High recycling rates for base metals

13	29	28	82	30
Al	Cu	Ni	Pb	Zn
Aluminium	Copper	Nickel	Lead	Zinc

High volumes + High recycling rates

>95%
buildings

>90%
automotive

>60%
packaging

Metals waste must be treated by high-quality recyclers

High-quality treatment

vs

Low-quality treatment

High-quality treatment		Low-quality treatment
Maximum number of metals & high yields	◆	Small number of metals & low yields
Safe treatment of hazardous substances	◆	Improper treatment of hazardous substances
High environmental standards	◆	Lack of environmental standards

Al Cu Ni Zn Pb Au Ag Pd Pt Rh
Ru Ir Co Se In Te Sb Bi As Sn

Al Cu Pb ?

Our 2018 focus: Promote high-quality recycling for all European metals

1. Improve collection and sorting of metals-containing waste
   - Full traceability
   - Investments into advanced sorting
2. Incentivise high-quality recycling of complex products
   - Minimum standards for e-waste recyclers
3. Put EU recyclers on a global level playing field
   - Equivalent conditions for exports
   - Streamlined intra-EU trade

Relevance - KEI

- E.g. in the latest EIPPCB assessment x WGC BREF

  "*It is difficult to define when an environmental impact is considered to be relevant or significant for the purposes of this document. It will normally be considered relevant if* ***there are BAT set in the current chemical BREFs****. It will be considered to be significant if a large quantity of the pollutant is generated at large number of installations*."

➢ Any BAT-AEL shall correspond to the application of **at least one technique that qualifies as BAT**

➢ Emissions values used for BAT-AEL derivation shall be reported with the relevant contextual information and techniques applied

Criteria to identify **KEI:**

- What is the environmental relevance?
- What is the significance of the activity?
- What is the potential for identifying new or additional techniques that would further significantly reduce pollution?
- What is the potential for BAT-AELs that would significantly improve the level of environmental protection from current emission levels?

Use of information generated by REACH/CLP and other legislation to ensure safe use of chemicals

- An attempt was done to link REACH and IED, i.e.
  - Check whether REACH/CLP information could be used to support compliance under other legislations
  - Enhance common understanding of interactions
  - Enhance information use, reduce unnecessary work
  - Identify support needs and develop tools

- **Case study on Ni plating**, done by ECHA and Ni plating industry and presented to a group of industry, Member States, ECHA experts in November 2014

  (http://echa.europa.eu/documents/10162/21771098/3.3_user_reach_data_en.pdf) and May 2015 (http://echa.europa.eu/documents/10162/21878363/enes_8_outcome_april_workshop_en.pdf)

  Why this case?

  - Typical process where chemicals are used
  - Wide range of chemical types and hazards, and process operations typical to many sites

Use of information generated by REACH/CLP and other legislation to ensure safe use of chemicals: case study

Starting point:

- the **REACH exposure scenarios** (ES): 'cookbook' explaining how the substance should be produced and used (risk management measures, operational conditions)
- IED situation: application for a permit/baseline reports
- Hypothetical company

Question: can the information reported in the ES be used to apply/support application for a permit?

Conclusions:

There are potential ways to use REACH information in IED baseline reports, but there are barriers:

- Different terminologies used in the different regimes
- Traditional / Established working practices

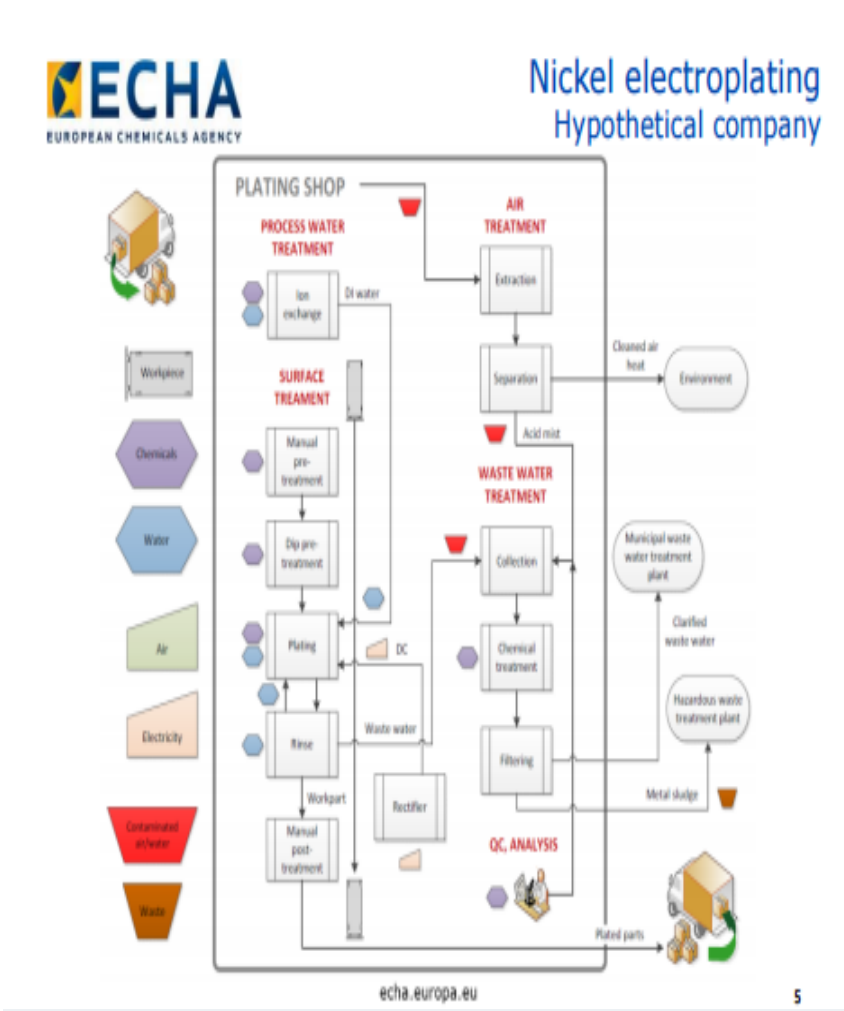
Need for more cooperation REACH-IED acknowledged

Specific follow-up with IED in relation to REACH data: not so clear yet how to carry this out? (dialogue ECHA / DG ENV / JRC)

We are following this up as we would like to make use of the REACH data

The REACH exposure scenarios

Exposure scenario	Information use
ES title (short title)	
1. Title section	Workplace risk assessment
ES/use name	
Scope	
2. Conditions of use affecting exposure	
2.1 Environment contributing scenario	Worker's training IED permit application
Product (article) characteristics	
Amount used, frequency and duration of use (or from service life)	Workplace risk assessment
Technical and organisational conditions and measures	IED permit application
Conditions and measures related to sewage treatment plant	
Conditions and measures related to treatment of waste (including article waste)	IED permit application
Other conditions affecting environmental exposure	
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
2.2 Worker contributing scenario	Workplace risk assessment Worker's training
Product characteristics	
Amount used (or contained in articles), frequency and duration of use/exposure	
Technical and organisational conditions and measures	
Conditions and measures related to personal protection, hygiene and health evaluation	
Other conditions affecting workers exposure	
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
3. Exposure estimation and reference to its source	
3.1 Environment contributing scenario	



ECHA case study

ECHA
EUROPEAN CHEMICALS AGENCY

Case study – example

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Waste water:
On-site wastewater treatment in a physico-chemical treatment plant by chemical precipitation, sedimentation, filtration or a combination. (Efficiency: 95 - >99%)
Off-site waste water treatment plant, community sewer system for ES 1 (Efficiency 40%)

ES1 freshwater discharge to STP: 3779 g/T (median)
ES2 freshwater direct discharge: 3779 g/T (median)
ES3 marine direct discharge: 3779 g/T (median)

Air:
Treatment of stack air emission by wet scrubbers. (Efficiency 99%)
ES1, 2 & 3: Release factor after on-site treatment: 1133 g/T (median)

ES

GES 10
Nickel Consortia

IED permit
Description of the proposed technology and other techniques for preventing or, where this is not possible, reducing emissions from the installation.

echa.europa.eu 9