MEED: The multi-year Metals Environmental Exposure Data Program: anticipating the challenges of the EU Zero Pollution Ambition Policy and the Chemicals Strategy for Sustainability

[1]Hugo Waeterschoot, [1]Violaine Verougstraete, [1]Lara van De Merckt and [1]Diana Dobre,[2]Marnix Vangheluwe

[1]Eurometaux, Tervurenlaan 168, 1150 Brussels, Belgium; [2]ARCHE Consulting, Liefkensstraat 35D, 9032 Ghent BELGIUM

Contact: Waeterschoot@eurometaux.be

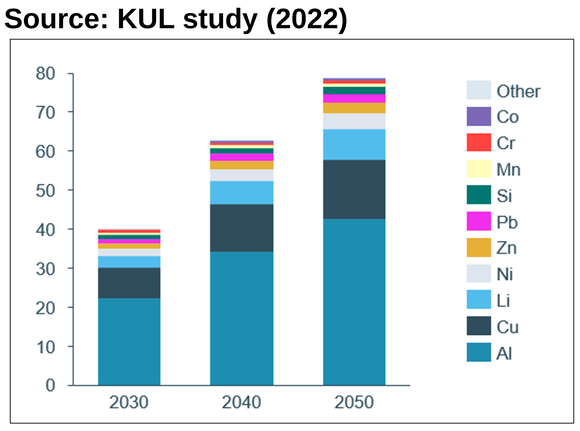
Background

As part of **the EU Green Deal**, the EU Zero Pollution Ambition (ZPA) aims at reducing *exposures of chemicals to levels that are no longer expected to be harmful to health and the environment*. **The Chemicals Strategy for Sustainability (CSS)** is one of the 3 pillars of this ambition. It will be implemented through revisions of key chemicals legislations like REACH and CLP, bringing in new challenges like the **Mixture Assessment Factor (MAF)** to demonstrate safe use and lack of impact on ecosystems of unintentional mixtures of chemicals. Moreover, the EU will boost its environmental compartments legislation by the development of **soil legislation** and reaching good quality status of water under the **Water Framework directive (WFD).**

Volumes of metals in use are expected to sharply increase, considering the critical role metals play in reaching the climate and circularity objectives of the Green Deal (e.g. in EV-batteries and solar cells). Hence, it is crucial to demonstrate that exposure to metals and their mixtures in the receiving environments will meet the objectives of the ZPA, the MAF and environmental compartment legislation, now and for the future.

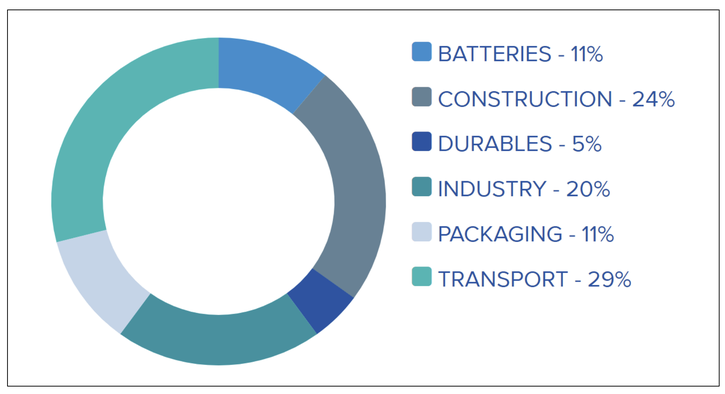
Expected growth rate of metals in EU

Source: KUL study (2022)



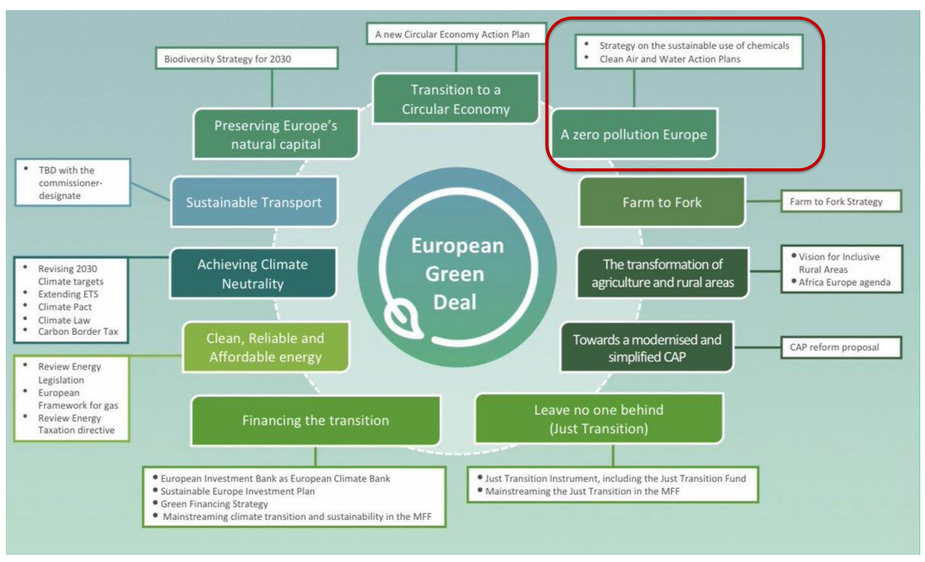
Metals use applications in the EU

Source: Eurometaux 2021



Schematic overview of EU Green Deal

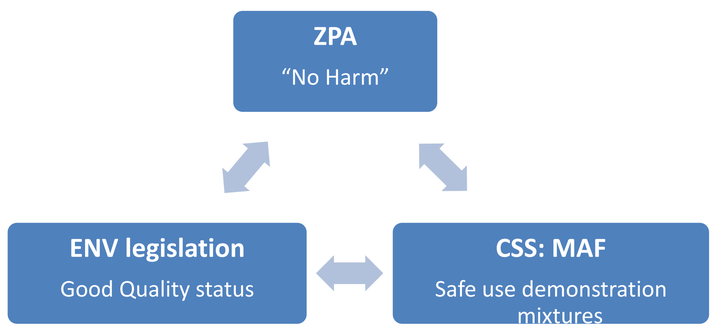
Source: DG Grow, 2021



Need for metals, how to gain them and emission challenges

- ✓ The EU Green Deal stimulates the use of a series of metals for uses contributing to the Climate, Energy and Chemicals transition to a more sustainable society.
- ✓ This results in multifold increases for some metals, materials that can be gained from recycling, longer life cycles of substances in articles for a given function (e.g. mobility) and mining to fill the growth gap
- ✓ Increased production, use in articles and recycling could potentially lead to increased emissions which may be contrary to the aims of the ZPA.

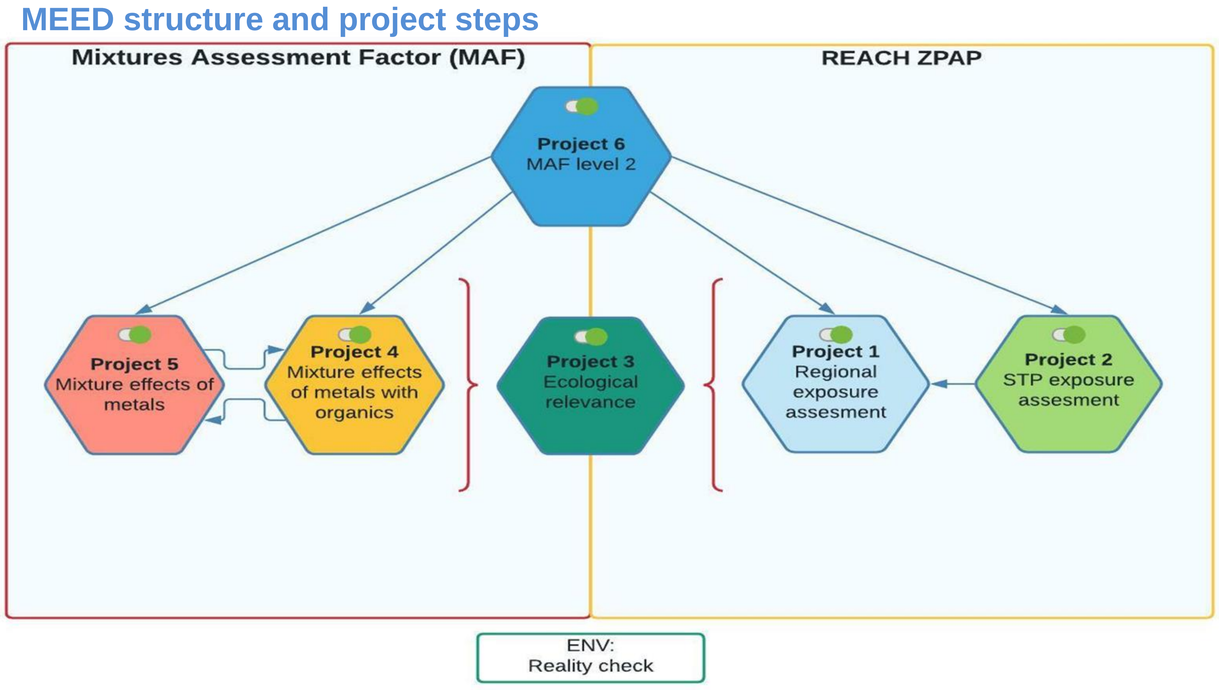
Regulatory protection objectives anticipated in MEED



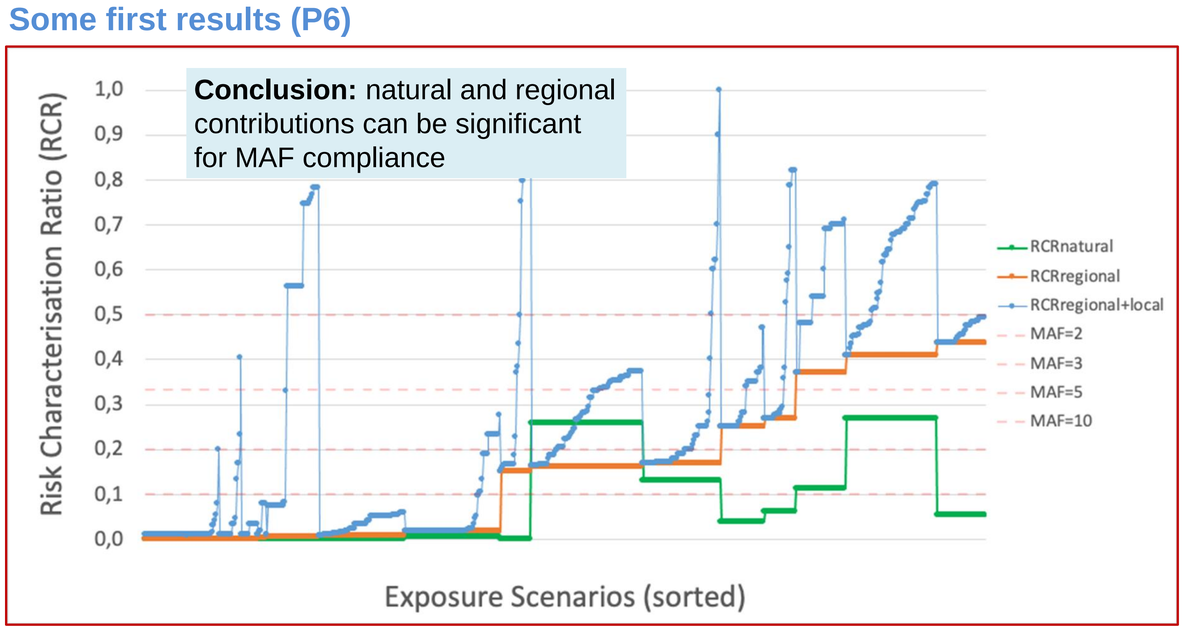
MEED: aims

The EU metal sector designed MEED as a comprehensive "environmental exposure data gathering programme" (MEED) , complemented by scientific concepts development to comply with the ZPA and biodiversity objectives. The program's timeline (2022-2024) is defined to feed the deliverables in time into regulatory debates (e.g., REACH Revisions, MAF impact assessments and debates, ZPA, EU Soil legislation, Water Framework Directive etc.).

MEED structure and project steps



Some first results (P6)



Pillar 1: anticipating the Mixture Exposure Factor in REACH

Strategic steps of the MAF pillar

Piloting **possible improvements and their efficiency** relevant to metals & inorganics
- achieve a sound MAF starting point

Define "**Inorganic-priority contributing substances**" (I-PCS) (P6)
- to provide focus and efficiency

Can we **separate impact of inorganics from organics** on MAF? (P5)
- would simplify the demonstration to provide!

Determine **combined effects of I-PCS**… and a way to check local contributions (P 4)
- provide a tool to demonstrate regional and local MAF compliance

Can we demonstrate "**No harm** to environmental compartments & biodiversity"? (P3)
- provide a tool to demonstrate "future proof" with ZPA and SDG 15

The MAF modules feed all into the **ecorelevance project** (P3) to check for the impact on biota under realistic EU exposure conditions

Pillar 2: Updating and predicting metal regional exposure concentrations in environmental compartments

Strategic steps of the ZPAP-REACH pillar

- Improve the assessments of **Consumer and Professional releases** (P2)
  - Given a weak link and Sewage Treatment Plants collecting those
- Would trends & future **metal volume increase** due to Green Deal be a risk? (P1)
  - Provide a factual and risk-based reply to these societal & scientific concerns
- Demonstrate **Good Quality Status** and "**no harm to the environment**" (P3)
  - To keep access to markets, financial sources and permits
  - To demonstrate ZPA and compliance with SDG 15
  - To provide tools that are NOT scientifically discriminatory for metals

The regional exposure modules feed all into the **ecorelevance project** (P3) to check for the impact on biota under realistic EU exposure conditions

Conclusions and next steps

- ✓ **Metal volumes** manufactured, used and recycled, will increase significantly due to the Green Deal, hence questioning the impact on the environment.
- ✓ **MEED aims** at collecting up to date and predicting future environmental exposures relevant to anticipate ZPA, MAF and new and updated EU environmental compartment legislation
- ✓ **MEED will run** for 3 years ('22-'24) and consists of 2 main pillars: a first one on anticipating the MAF factor implementation and the second on regional exposures. 6 projects support those 2 pillars. The timings are designed to fit the EU-regulatory agendas
- ✓ The final **Ecorelevance project** is a key cornerstone that aims to provide methods and demonstration to ensure the interlink between the ZPA and environmental compartment protection objectives
- ✓ The **outcome of the MEED program** will be published and available for regulatory compliance demonstration

SCAN ME

Acknowledgements: This research is funded by Eurometaux