

ICdA Technical Session



Agenda

- Statement of Compliance
- Reporting on the workplace monitoring observatory
- Revision of the OEL: status update
- Update on REACH:
 - Authorisation
 - REACH/CLP Revision
 - MEED (Metals Environment Exposure Data programme)
 - Restrictions on CMRs in childcare articles
- Introduction of restrictions in the new EU batteries regulation
- Reported cadmium releases to the environment
- Sustainable cadmium

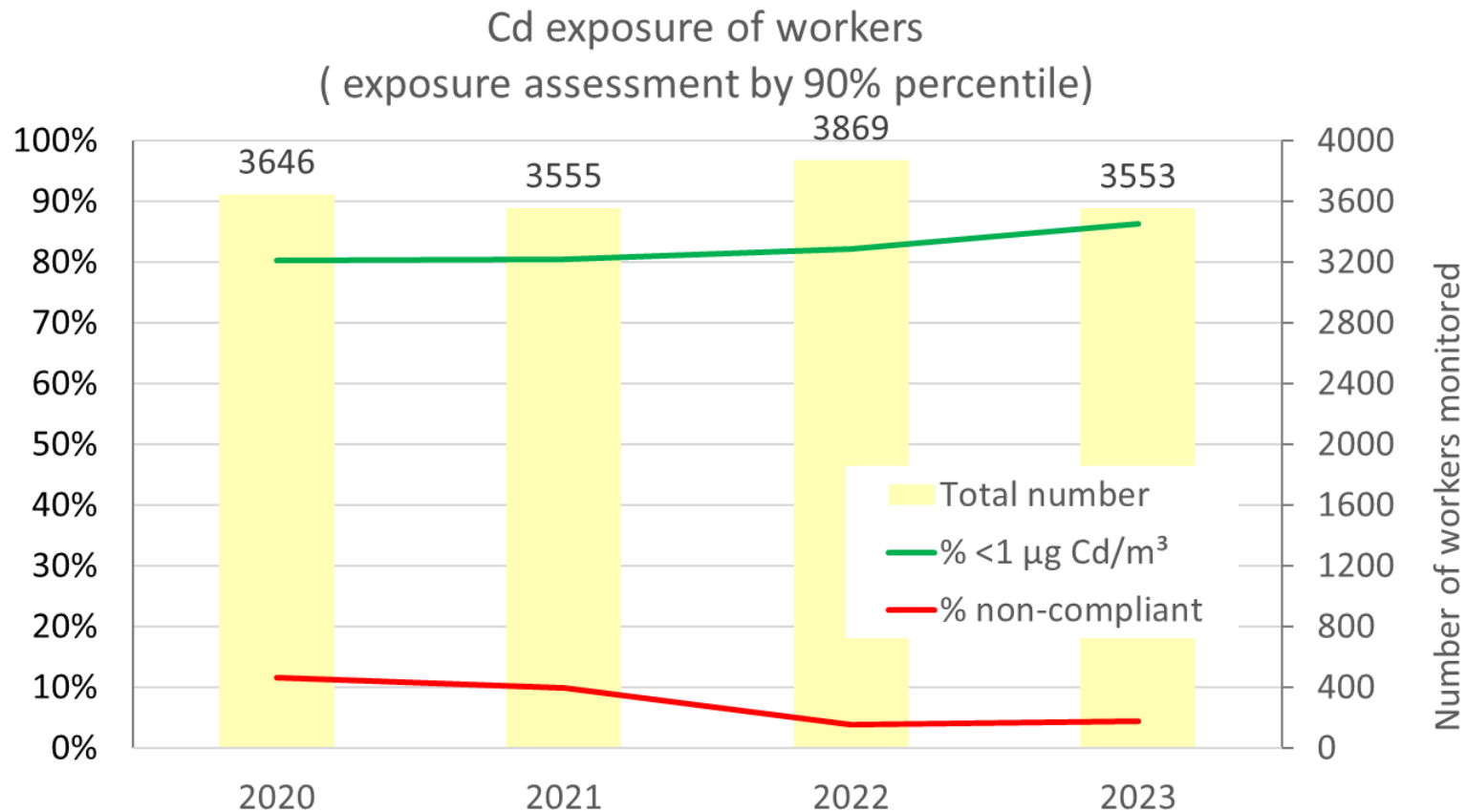
STATEMENT OF COMPLIANCE

- ❑ The purpose of the meeting is to address, under the applicable confidentiality rules, issues concerning Cadmium and Cadmium compounds producers and importers and more particularly their obligations under the several regulations.
- ❑ The minutes kept during the meeting will have to reflect all significant matters discussed during the meeting.
- ❑ No discussions will be held, formally or informally, during specified meeting times or otherwise, involving, directly or indirectly, express or implicit agreements or understandings related to: (a) any company's price; (b) any company's terms or conditions of sale; (c) any company's production or sales levels; (d) any company's wages or salaries; (e) the division or allocation of customers or geographic markets; or (f) customer or suppliers boycotts; or (g) any disclosure of information which may affect applicable rules on Competition Law.
- ❑ The International Cadmium Association (ICdA), as a group will make no recommendations of any kind and will not try to reach any agreements or understandings with respect to an individual company's prices, terms or conditions of sale, production or sales levels, wages, salaries, customers or suppliers.

Cadmium Workplace Monitoring Observatory

2023 update

Workplace exposure to airborne cadmium



- ❑ Exposure of 4% of workers does not comply with a limit value of 4µg/m³
- ❑ Exposure of 14% of workers does not comply with a limit value of 1µg/m³

Additional action required in some plants

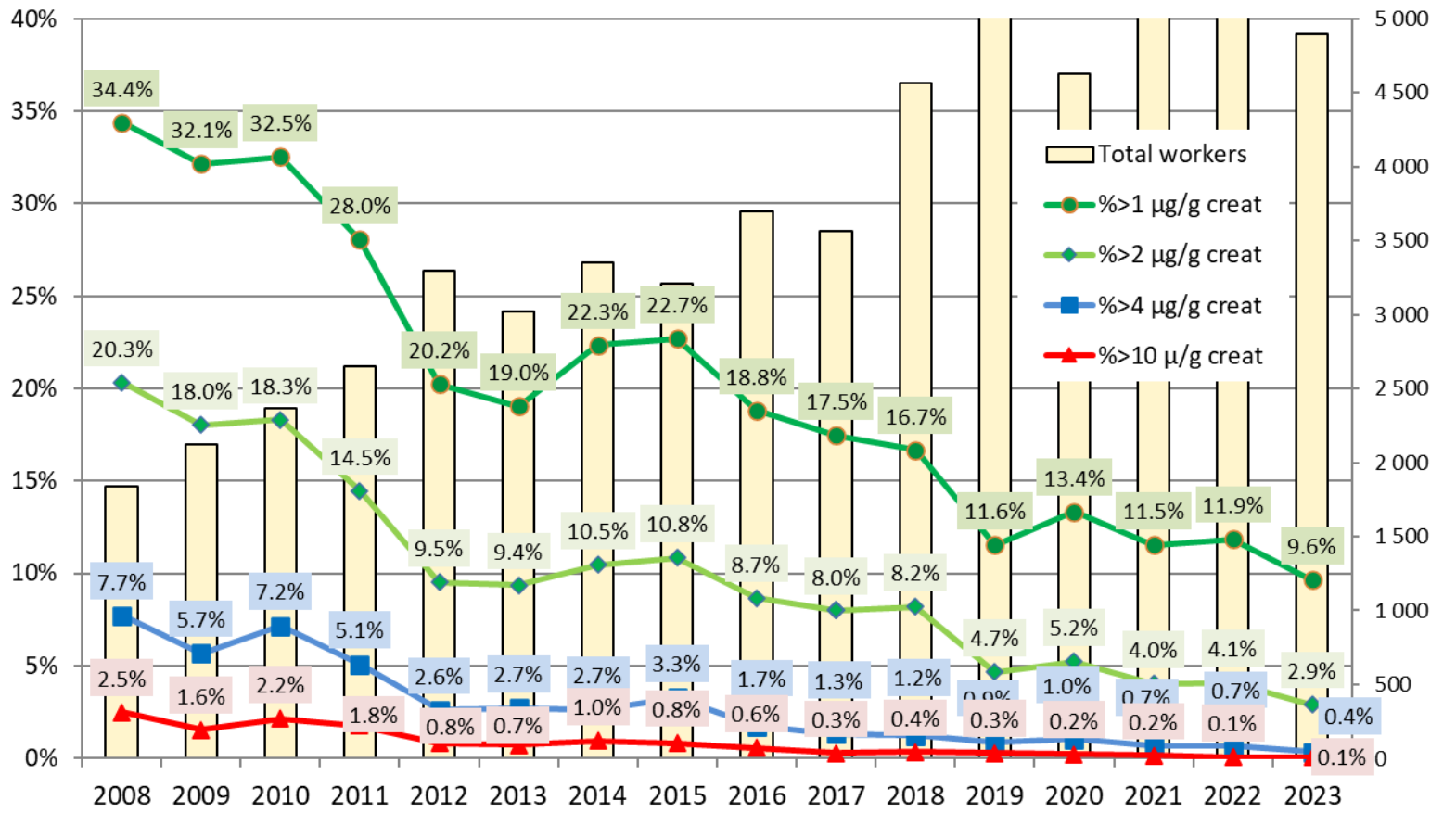
- Reduce airborne Cd concentration
- Apply respiratory protection with sufficient protection factor

reference:

- ❑ The 90 percentile of all samples in a SEG is here considered as the representative exposure level for all workers in a SEG

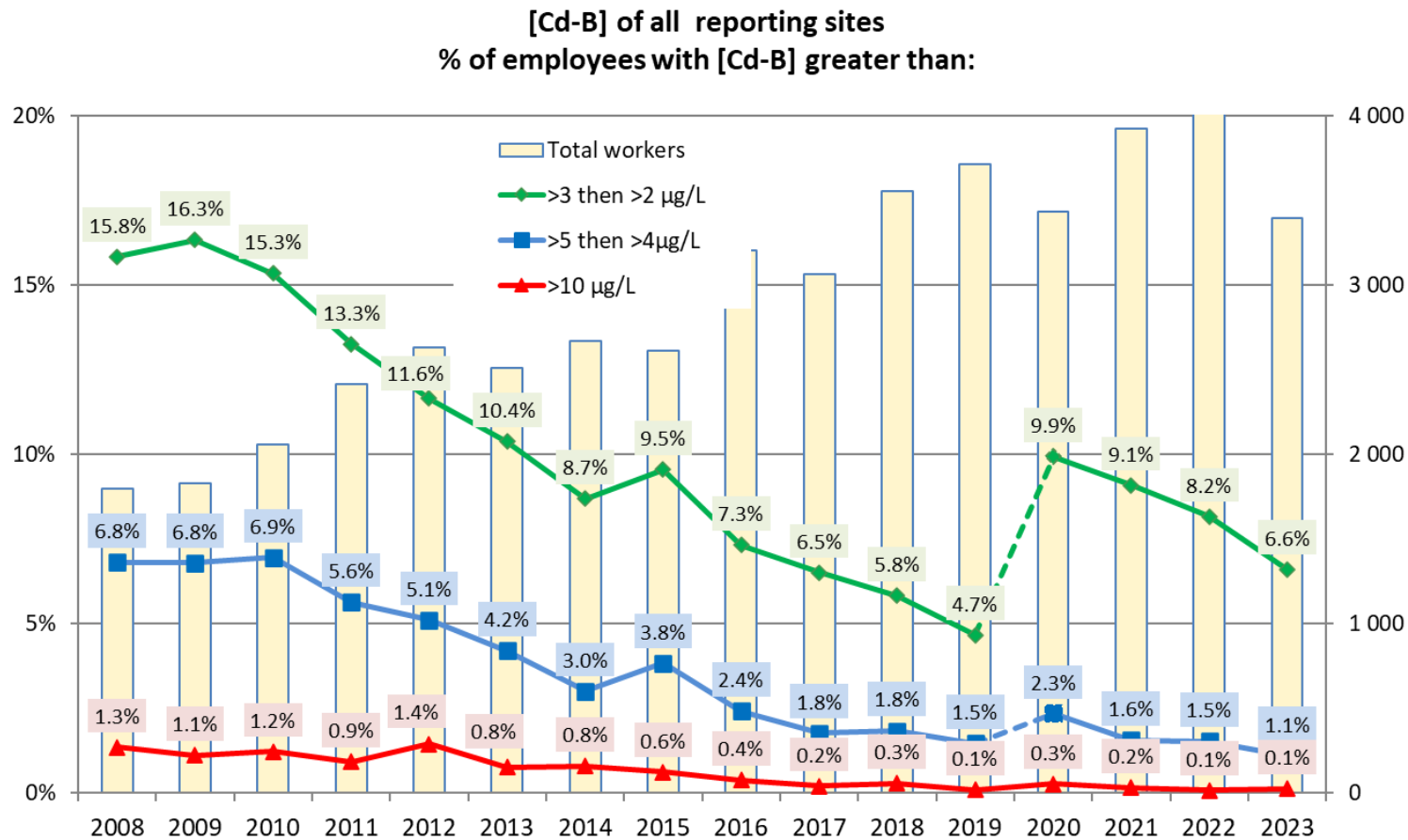
Cadmium in urine in workers exposed to cadmium (expressed as $\mu\text{g Cd/g creatinine}$)

[Cd-U] of all reporting sites
% of employees with [Cd-U] greater than:



- Urinary cadmium is a good tracer for cumulative cadmium exposure.
- Continuous decreasing trend is a clear indication that workers' exposure has decreased significantly over the past 15 years.
- Less than 0,4% of workers have CdU >4 $\mu\text{g/g creatinine}$

Cadmium in blood in workers exposed to cadmium



- Cd in blood is impacted by recent and older exposure.
- It reveals more rapidly an increased exposure.
- The steady decrease over the past 15 years is a clear sign of a decreased workplace exposure.

From 2020, the green and blue lines represent workers with CdB >2µg Cd/L and with CdB >4µ Cd/L.

Previous target values were 3µg/L and 5 µg/L.

Hence the upwards jump in 2020. The thin line shows the previous 3µg Cd/L level which continues to drop at the same rate.

REVIEW OF THE EU OEL : STATE OF PLAY



3rd Revision of the Carcinogens and Mutagens Directive (CMD): Cd entry

- During transitional period (=8 years after entry into force: till 7/2027):
 - **Option 1:** BOEL of $4\mu\text{g}/\text{m}^3$ (inhalable fraction)
 - **Option 2:** only for MS that implement a biomonitoring system with a BLV not exceeding $2\mu\text{g Cd/g}$ creatinine in urine:
 - BOEL of $4\mu\text{g}/\text{m}^3$ (respirable fraction) + BLV of $2\mu\text{g Cd/g}$ creatinine in urine
- After transitional period: BOEL of $1\mu\text{g}/\text{m}^3$ (inhalable fraction)
- No later than 3 years after entry into force, **COM shall assess** the option of amending this Directive to add provisions on a **combination of an airborne occupational exposure limit and a biological limit value** for cadmium and its inorganic compounds.

OEL process: **Interrupted**

Selection of chemicals for Scientific Evaluation

DG EMPL establishes lists of priorities

WPC- ACSH

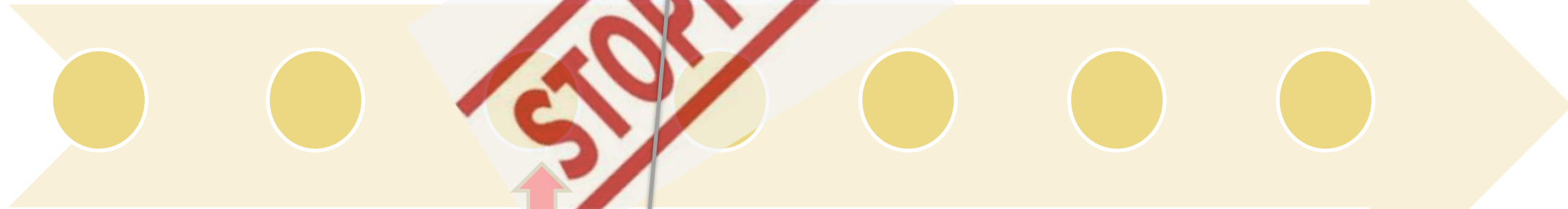
Working Party on Chemicals comes up with a consensus

Draft legislative proposal

DG EMPL prepares the draft legislative

Adopted Directive published in EU Official Journal

MSs will transpose the legal text into national legislation



Scientific Recommendation

DG EMPL issues mandates to Scientific committee

Impact Assessment (IA)

DG EMPL drafts IA

College of Commissioners

The College of Commissioners adopts the proposal and sends it to Council and Parliament

We are still here

Preparatory phase

ECHA phase

Regulatory phase

Legislative phase

WPC meetings: No consensus

During the tripartite discussions at the WPC and meetings with the Commission, it became obvious that parties around the table will never accept an Occupational Exposure Limit Value (OEL) lower than **1 μ g Cd/m³**, inhalable fraction, which is already approved in the Carcinogens and Mutagens Directive and **will become mandatory as of July 2027**.



WPC could not reach an agreement on other proposals and so will not make a proposal to the ACSH.



The Commission will not do an impact assessment as no changes will be proposed.



The Commission will not apply any changes to the foreseen binding OEL (1 μ g/m³ inhalable) as of July 2027



The EU binding Occupational Exposure Limit (OEL) of **1 μ g Cd/m³ (inhalable fraction)** as set in Directive EU 2019/983 must be transposed into the national legislations of the EU Member States and **will become binding on employers at latest on July 11th, 2027**.

Way forward: Position ICdA

The best approach to **protect workers** from exposure to cadmium is by implementing a **combination of an OEL at $4\mu\text{g Cd/m}^3$, respirable fraction** to protect against local respiratory adverse health effect **in combination with a BLV of $2\mu\text{g Cd/g creatinine in urine}$** to protect against systemic adverse health effects.”

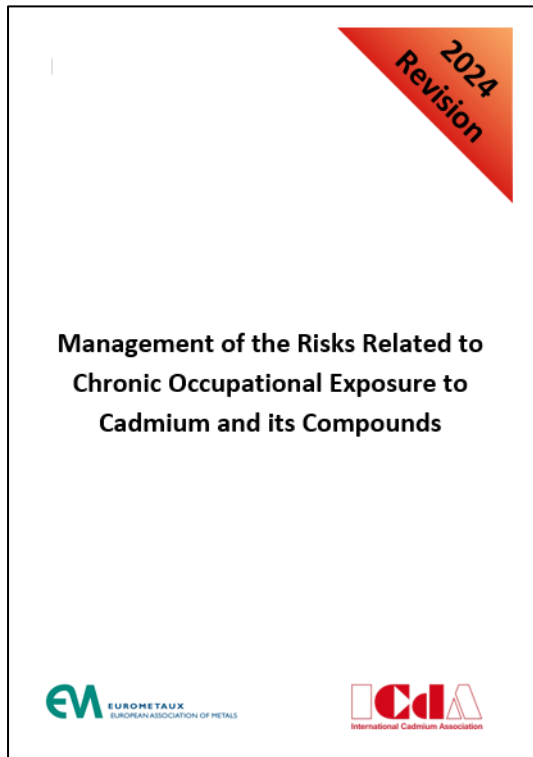
(ICdA guidance and ICdA Biomonitoring voluntary system)



Defend, promote this scientific position where possible

Way forward: ICdA further actions (1)

1. **Update of the ICdA Guidance** "Management of the Risks Related to Chronic Occupational Exposure to Cadmium and its Compounds":
 - ❖ Recognises that most regions in the world have a Cd OEL in place for worker protection - a position which is supported by ICdA. Notes that OELs developed per jurisdiction may have different legal status, may cover different dust fractions, split based on classification and/or have different numerical values.
 - ❖ **addresses the new occupational exposure limit values set by the EU:**



(>revision October 2024)

In the EU, a binding cadmium OEL value has been set in Directive 2019/983/EU published in June 2019, in which a two-step process is set:

- Step 1:
 - The directive requires that a binding OEL of **4 µg/m³** (inhalable fraction) be set in all EU Member States by July 11th, 2021,
 - For those EU Member States that implement, on the date of the entry into force of this Directive, a biomonitoring system with an urinary BLV not exceeding 2 µg Cd/g creatinine in urine, the binding OEL of **4 µg/m³** applies to the respirable fraction shall be set by the same date,
- Step 2: On July 11th, 2027 at the latest, all EU Member States shall set a binding OEL of **1 µg/m³** (inhalable fraction).

EU plants shall take the necessary actions to comply with both steps when they become applicable.

Revised 2024 ICdA Guidance:

- published on the ICdA website (<https://www.cadmium.org/>)
- printed versions on A5 brochure format which we can share with all interested stakeholders.

Way forward: ICdA further actions (2)

2. ICdA Participation at 2nd ECaBaM workshop - (Exchange & Capacity-building Group on Battery Materials project (ECaBaM) - 28 and 29 October 2024 in Helsinki at ECHA



Exchange & Capacity-building Group on Battery Materials (ECaBaM).

2nd Workshop (28-29 October), DAY 1



- ECaBaM platform (Eurometaux-ECHA) is set up to promote interaction during ECHAs mandate commissioned by the COM :
 - ✓ related to the Batteries Regulation, main task for ECHA: the development of a list of chemicals used in batteries and for the manufacturing of them as well as elements that can be considered for their risk Management.
- WS was about the outcome of the data-gathering survey (RAMBOLL), prioritisation, or OEL-related issues
- ICdA (H&S Chair Patrick De Metz) gave a short presentation on our Risk management system/ Monitoring Observatory in the Cadmium industry, and distributed there the A5 ICdA Guidance brochure with the aim to demonstrate adequate risk management instead of any proposed restrictions.



Restriction of substances in the batteries regulation

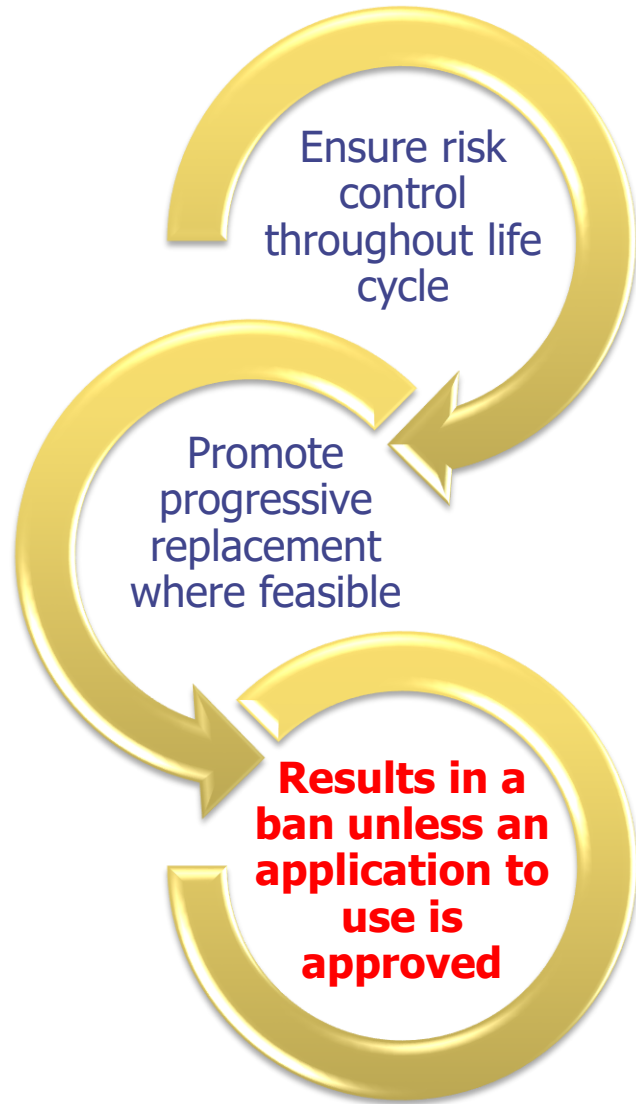
- ❑ Target substances
 - Substances of Concern (SoC = any substance that has a hazard classification)
 - Substances that hamper recycling
- ❑ Task given to ECHA
 - Develop list of SoC + prioritization (by Q3/2025)
 - Final report to COM (by Q4/2024)
- ❑ ECHA: seems to put more focus on recycling
 - Exposure, releases to environment, waste
 - ✓ Need to check on releases in the full recycling loop.
 - Explores refined prioritization scoring criteria
 - ✓ Scoring system implemented under Reach Authorization is a starting point for a refined scoring system
- ❑ Imposing restrictions
 - ECHA prioritization list is only a supporting document
 - ✓ no automatic restriction proposal when on top of the list
 - MS or COM can propose any substance for restriction in batteries
 - ✓ from top of ECHA list, bottom of list, not on the list

EU REACH

Status update on

- Authorisation procedure for cadmium and cadmium substances
- Reach Revision: Reach 2.0
- CLP Revision
- MEED (Metals Environment Exposure Data programme)
- Restriction on CMRs in childcare articles

Authorisation



- Draft recommendation of List of Substances Subject to Authorisation (“Annex XIV”):
 - Every 18 months ECHA selects 6 – 12 substances (av. 8) of highest (Inherent properties + Volume + Wide Dispersive Use) score, but can also use grouping.
- 11th Recommendation list published April 12th, 2023 (8 substances including Pb)
- 12th Draft Recommendation list (7 Feb 2024)
 - Cd and compounds not selected ✓
- 13th List? – Dec 2024 discussion starts

The process could then stop since REACH revision 2.0 will reconsider the Authorisation and Restriction protocol and may amend the Risk Management Options for SVHCs.

12th Draft Recommendation list



7 February 2024

Draft 12th Recommendation of Priority Substances to be included in Annex XIV of the REACH Regulation (List of Substances Subject to Authorisation)

Draft Annex XIV entries									
#	Substance	EC number	CAS number	SVHC-relevant intrinsic properties*	Latest application date pursuant to REACH Art. 58 (1) (c) (ii)**	Sunset date	Review periods	Exempted uses or categories of uses	Exemptions for PPORD
1	Melamine	203-615-4	108-78-1	Equivalent level of concern having probable serious effects to human health (Article 57(f) - human health). Equivalent level of concern having probable serious effects to the environment (Article 57(f) - environment)	Date of inclusion in Annex XIV plus <u>18, 21 or 24</u> months	Latest application date plus 18 months	None	None	None
2	S-(tricyclo[5.2.1.0 ^{2,6}]deca-3-en-8(or 9)-yl) O-(isopropyl or isobutyl or 2-ethylhexyl) O-(isopropyl or isobutyl or 2-ethylhexyl) phosphorodithioate	401-850-9	255881-94-8	PBT (Article 57d)	Date of inclusion in Annex XIV plus <u>18, 21 or 24</u> months	Latest application date plus 18 months	None	None	None
3	Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	278-355-8	75980-60-8	Toxic for reproduction (Article 57 c)	Date of inclusion in Annex XIV plus <u>18, 21 or 24</u> months	Latest application date plus 18 months	None	None	None
4	Barium diboron tetraoxide	237-222-4	13701-59-2	Toxic for reproduction (Article 57c)	Date of inclusion in Annex XIV plus <u>18, 21 or 24</u> months	Latest application date plus 18 months	None	None	None
5	Bis(2-ethylhexyl) tetrabromophthalate covering any of the individual isomers and/or combinations thereof	-	-	vPvB (Article 57e)	Date of inclusion in Annex XIV plus <u>18, 21 or 24</u> months	Latest application date plus 18 months	None	None	None

Selected substances based on:

- Priority score

OR

- Grouping consideration with substances already recommended

Cut-off score: 32

Scores:

Cd(OH)₂ : 18

Cd: 16

CdO: 15

13th Draft Recommendation list

- ❑ Cd and Cd compounds were out of the risk zone for the 12th recommendation list
- ❑ **13th list:** will anyway still likely come due to the delay of the REACH review. But may well be the last one!
 - Will be discussed at MSC-88 (December 2024)
 - Unlikely Cd will be selected
 - ✓ Reason: many **PBT** (persistent, bioaccumulative and toxic), **vPvB** (very persistent & very bioaccumulative) and also **ED** (endocrine disruptor) substances that score higher than Cd

Inherent property	Category	Score
<i>57(a) or/and 57(b) or/and 57(c) or/and 57(f)</i> ^{5,6}	low	1
<i>57(f) (ED)</i>	medium	7
<i><u>57(d) or (e)</u></i>	high	13
<i>57(d) and (at least) one other SVHC property</i>	high	15
<i>or</i>		
<i>57(e) and (at least) one other SVHC property</i>	high	15

REACH – CLP revision: update and timing

New Hazard Endpoints : Endocrine Disruptors

- UN GHS sub-committee considering inclusion of ED hazard class into scope – OECD Ad-hoc expert group mandate to advise. Next meeting in Dec 2024. Pushback from US, China, Canada, UK, SA.
- ECHA guidance further delayed to 4 October – still nothing
- Multi-metallic projects done to investigate metal specificities, collect information on toxicity mechanisms of metals.

CLP



REACH 2.0

- Nov 2023: REACH revision draft proposal
- ...



New Endocrine Disruptor hazard Class

- New hazard class and information requirements for endocrine disruptors

Green Deal/CSS to include EDs within REACH and CLP regulations to harmonize legislative frameworks (covered by BPR [*Biocidal Products Regulation*] and PPP [*Plant Protection Products*] since 2018)

- New ED hazard class in CLP:

- Category 1: Known or presumed endocrine disruptors (ED HH/ENV 1)
- Category 2: Suspected endocrine disruptors (ED HH/ENV 2)

- Additional REACH information requirements related to EDs:

- Additional ED testing → Only if/when REACH requirements official
- Systematic literature review (HH & env) → Comparison of possible consultants

If classified :

- SVHC list
- Mentioned on SDS
- Labelling + ED hazard statements

- Assessment of adverse activity (1)
 - Assessment of endocrine activity (2)
 - Mode of action analysis (3)
- Deliverable: Literature search, Documentation, Report generation, Weight of Evidence, Conclusion

Cost: 77-132 k euro
Time: 4-8 months

MEED

MEED

- MEED is a comprehensive “environmental exposure gathering programme” covering today’s and tomorrow’s needs to comply with the Zero Pollution Ambition (ZPAP) and biodiversity objectives.
- MEED is composed of two “data gathering packs” driven by regulatory concerns: the Mixture Assessment Factor (MAF) under REACH and, the ZPAP/REACH covering six projects all contributing in a stepwise and tiered way to the demonstration that metals environmental exposures are not expected to be harmful to the environment.
- The projects run for 3 years (2022-’24). The timeline allows to feed the deliverables in due time into regulatory debates (e.g., REACH Revisions, MAF impact assessments, ZPAP, Water Framework Dir. etc.) and allow timely updating REACH registration dossiers



MEED

Metals Environmental Exposure Data

MEED – Why?

Multi-year exposure gathering programme

NEED identification

SHORT TERM

- MISA ENV Exp update needs

MEDIUM TERM

- REACH new challenges (MAF)

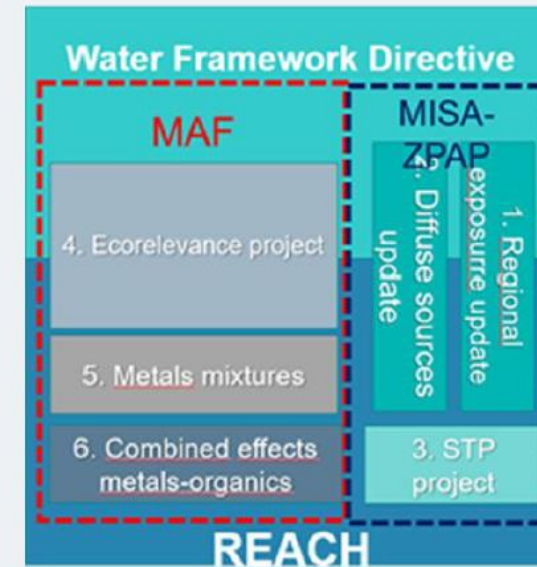
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MEDIUM to LONGER TERM

- ZPAP-Green Deal challenges
 - Demonstrate no harm to env. compartments and biodiversity
 - Lack of impact of new (or increased) uses due to Green Deal
- Water (and soil) Framework Directive
 - Demonstrate that metals do not affect good quality status

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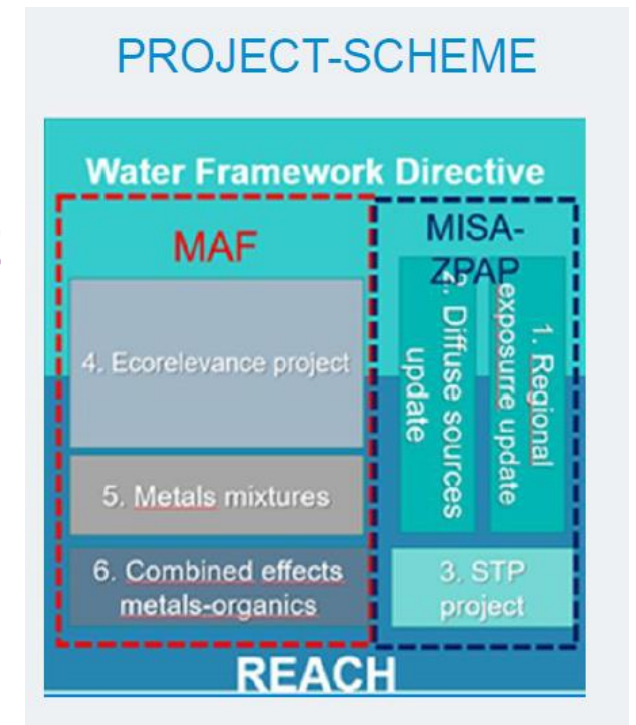
PROJECT-SCHEME



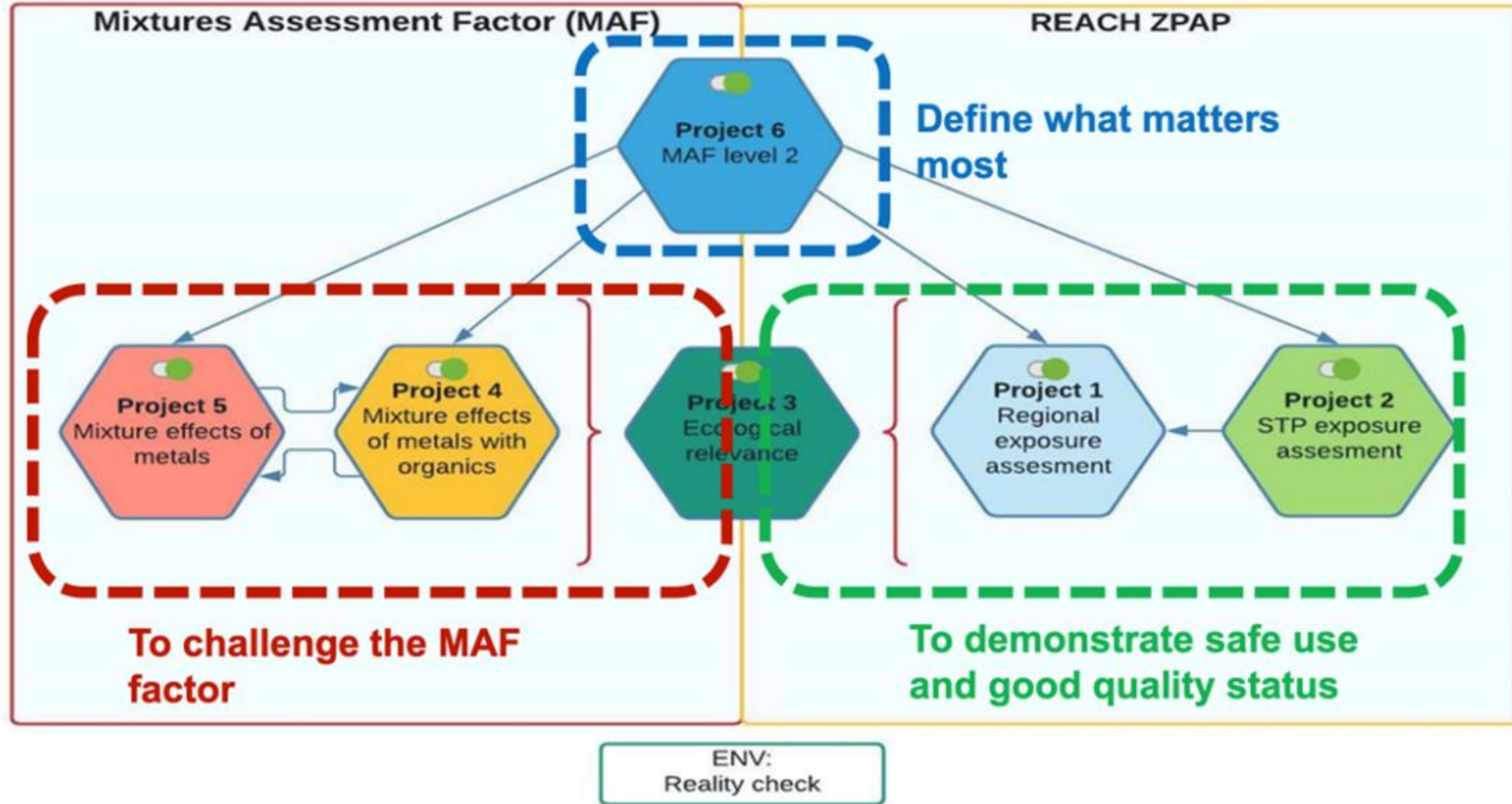
MEED – Timeline & funding



- Timeline:
 - The projects will run between 2022 and 2025 (3.5 years).
- Estimated Costs:
 - Total estimate: 1,128,000 + 160,000 € over 3.5 years.
- Funding?
 - Eurometaux = ~270 k€ over the 3.5 years.
 - Remaining = 13 k€/year (22 sponsors).
 - ✓ Additional ~4.5k€ for 2025.



MEED – Projects



MEED – Project status

Project	Status	Timeline	Notes
6a. Mixture Assessment Factor (MAF) 1	Complete	Reports are being finalised.	Impact of MAF on REACH exposure scenarios (ES). E.g., MAF 5 = 63% soil + water ES fail.
6b. Mixture Assessment Factor (MAF) 2	Complete	Reports are being finalised.	Identification of Inorganic-Priority Contributing Substances (I-PCS). Cd is an I-PCS in soil & water.
5. Mixture effects of metals	Ongoing	Literature review: Complete. Experimental phase: Final first draft received. Final deliverable: Q1 '25.	Data gaps for certain metals (Co, Mn, Hg) and no high-quality vert. studies. Mixture toxicity models predict relatively accurately.
4. Metal + organic mixtures	Ongoing	Literature review: Complete. Experimental phase: Ongoing. Final deliverable: Q1 '25.	Very little metal + organic toxicity data! Cd to be used in mixtures.
3. Eco-Relevance	Ongoing	Literature review: Q1 '23. Proof of principle study: Ongoing. Final deliverable: >'25.	Use of 'metabarcoding' and other such methods. Pilot study ongoing in Belgium.
2. STP exposure assessment	Complete	Literature review: Jan. '23 Final report: Complete.	Improve the assessments of consumer/professional releases.
1. Regional exposure assessment	Complete	Draft report on 'ambient concentrations' received (July '22).	Freshwater (Waterbase) and soil (GEMAS) assessment.

Restriction on CMRs in childcare articles: Participation in consultation (closed 29/09/23)



- ❑ Restriction under REACH Article 68(2)
 - ❑ Text drafted by ECHA aims to facilitate a Forum advice on enforceability
 - ❑ Legal scope and REACH Annex XVII entry will be prepared by COM in the next phase
 - ❑ Case relevant to the metals sector (Cd also mentioned !)
 - ❑ ICdA/REACH Cd consortium commented : With major emphasis on:
 - Not all Cd compounds are CMR. Notably Cadmium pigments are specifically exempted in CLP Annex VI entry.
 - There will be difficulties in policing of the restriction:
 - Analysis of the content of the article (in particular for decoration/colouring of ceramic and glass), for compliance check of the Restriction level will not reveal the nature of the Cd-compound and whether CMR classified
- not all Cd-compounds are to be covered by the new Restriction

ECHA investigation reveals CMR substances in childcare products

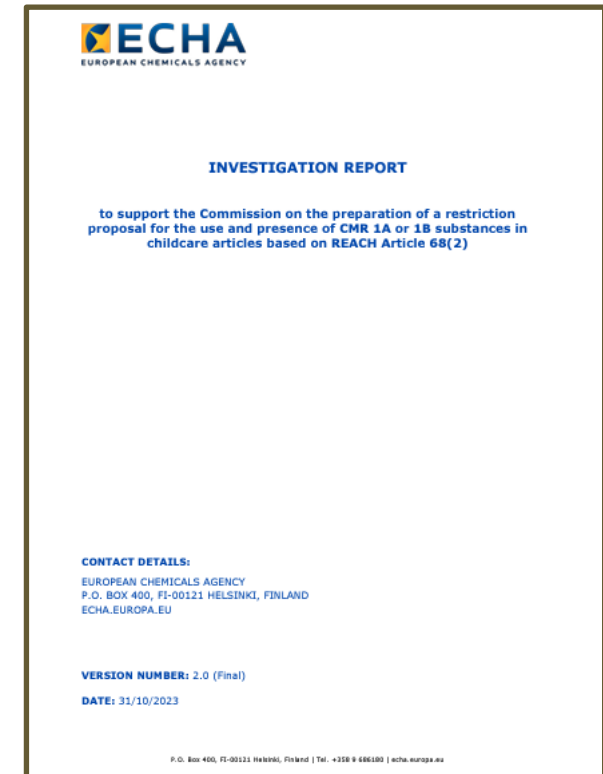
23/08/2023: Draft version for third party consultation

31/10/2023: ECHA published investigation report on the use and presence of CMR 1A or 1B substances in childcare products.

The report was prepared to support the EU COM in preparing an EU-wide restriction under the REACH regulation with the aim to protect children from exposure to CMR substances.

Cadmium: still mentioned ; nothing adapted, not taken into account our remarks that Not all Cd compounds are CMR

Next step: The report will be submitted to the European Commission to enable the preparation of a restriction proposal under Article 68(2) of REACH without direct involvement of ECHA's Scientific Committees.



Cadmium releases

Cadmium Releases

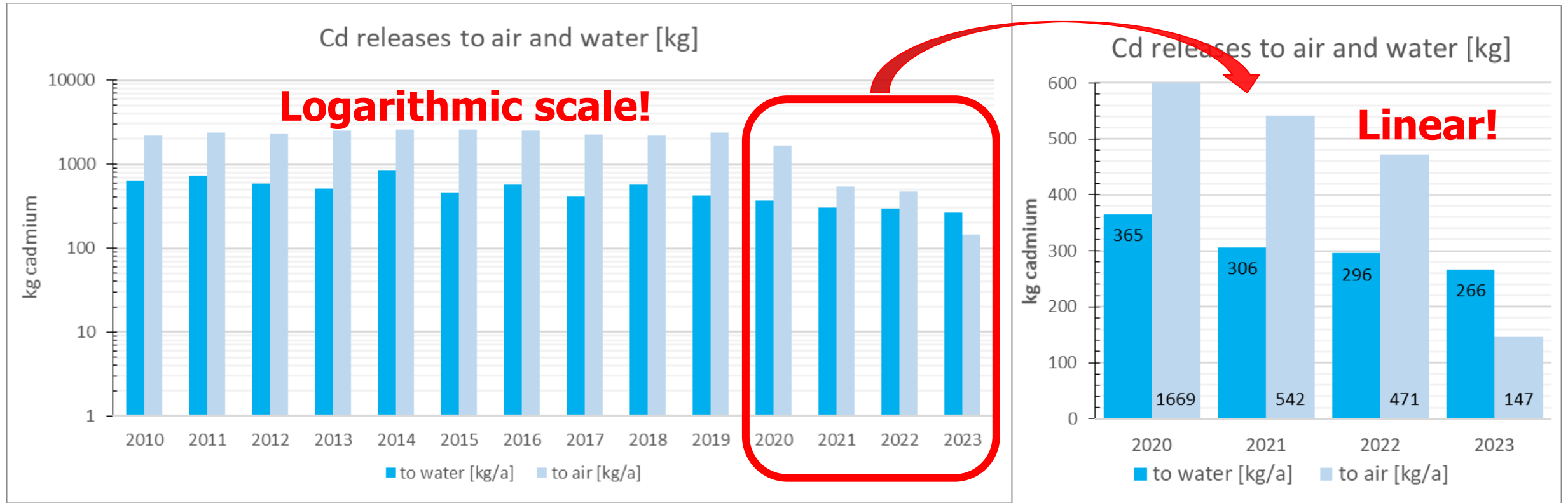
- ❑ Increased focus on cadmium in the environment
 - UNEP
 - ✓ after addressing Hg in Minamata, next focus is on As, Pb and Cd
 - Ambient Air Quality Directive

- ❑ We need to be pro-active
 - Cadmium industry will be considered (one of) the usual suspects
 - Therefore: demonstrate that our industry is not significantly contributing to cadmium releases to the environment and show progress
 - ✓ Data collection on releases to air and water from Cd industry.
 - ✓ Disseminate the message that cadmium releases from our sector are well under control.
 - ✓ Compare our performance with other sources of cadmium release.

- ❑ Encourage members to report to ICdA to ensure representativeness



Cadmium Releases



- ❑ Releases to air have dropped drastically in recent years.
 - Represent 2,8% of all emissions to air reported in E-PRTR
- ❑ Releases to water also show a decreasing trend.
 - Represent 1,3 % of all emissions to water reported in E-PRTR

Sustainable Cadmium

No child labour

Transparency

Community development

Education **Well controlled**

Low Carbon

No pollution
Doing LCAs

Diversity

ESG compliant

Employee safety

Business integrity

Responsibility **Contributing to UNSDGs**

Water management

Respecting labour rights

Reporting on CFs

- Many aspects
- How to prioritize?
 - On which one can you have an impact?
 - Which can bring the most significant contribution?
 - Which one will be impactful in your communications?

Contributing to the UN SDGs

- Adopted in 2015
- Goals and targets
- To be achieved before 2030
- Where can you contribute?



<https://sdgs.un.org/goals>

Some cradle to grave considerations ...

Responsible Sourcing:

- Would a Cadmium Mark be of interest analogous to the Zinc Mark, Copper Mark, ...
- Is the cadmium content recycled and how? What percentage gets lost in the environment or is unaccounted for and does this pose a risk to humans or to the environment?

Impact of our operations on human health and on the environment

- Do we provide a safe and healthy work place?
- Do we sufficiently address Cd releases to water and air?
- How about our waste management?

EoL recycling of cadmium products:

- Are cadmium containing products (NiCd batteries, solar panels, pigments,...) collected for recycling at the end of product life?

Downstream Due Diligence:

- How can cadmium producers ensure that their customers (Cadmium users) use cadmium responsibly, e.g. not for jewellery?
- How can zinc producers that do not produce cadmium but have cadmium containing residues landfilled ensure that their service provider ensures safe landfilling or treatment? Is a guidance or best practice document needed?
- Could downstream due diligence for zinc refiners become part of the Zinc mark or is this sufficiently covered already now?



Time for interaction: How should ICdA proceed

□ Where can ICdA help

- To support its members in highlighting sustainability of their individual operations?
- To develop an image of our sector as respecting and contributing to the UN SDG goals.



Thank you for your participation!



The views you shared are much appreciated and we look forward to receive any further comments and suggestions

Visit our website for the latest news

<https://www.cadmium.org/>

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