Scientific and regulatory challenges to deal with "mobile" substances in drinking water resources

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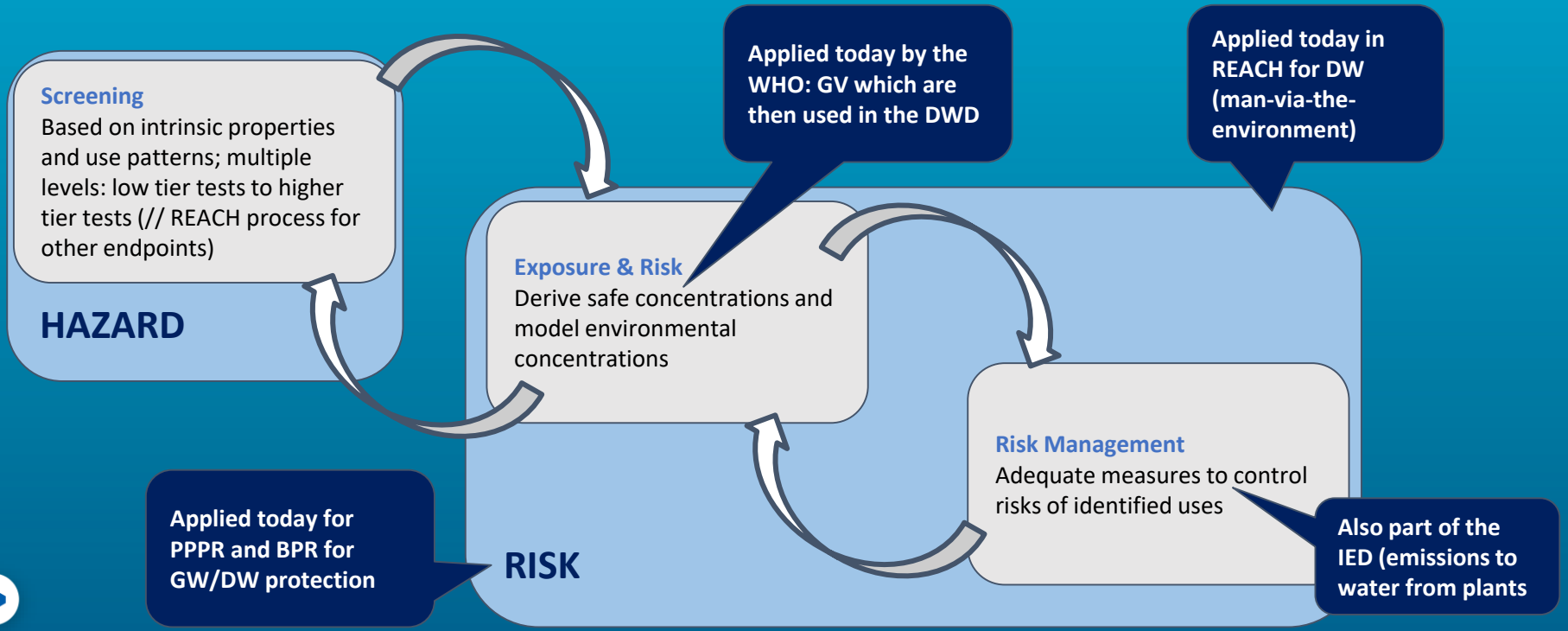
Regulatory challenges - Risk-based approach

Hazard-based approach vs Risk-based approach



DW: drinking water; GW: groundwater; DWD: drinking water directive; GW: guideline value; PPPR: plant protection products regulation; BPR: biocide products regulation; IED: Industrial Emissions Directive

Scientific challenges - The right safety net

Screening
Based on intrinsic properties and use patterns; multiple levels: low tier tests to higher tier tests (// REACH process for other endpoints)

HAZARD

The screening criterion for mobility put forward creates a net with two major pitfalls

Net is too wide

8021 out of 9724 substances fit the M and/or vM criteria

Arp & Hale (2019)

Mesh is too large

False positives: 25%
(meets criteria, not detected in DW)

False negatives: 28%
(does not meet criteria, detected in DW)

Neumann & Schliebner (2019)

*Many false positives/negatives were also identified by the ECETOC TF (see upcoming report)

The net catches too many chemicals to handle and misses some of the most critical substances

- Hypothesis that substances present in drinking water could be identified with proposed criteria is not validated
- Level of concern unknown based on identification

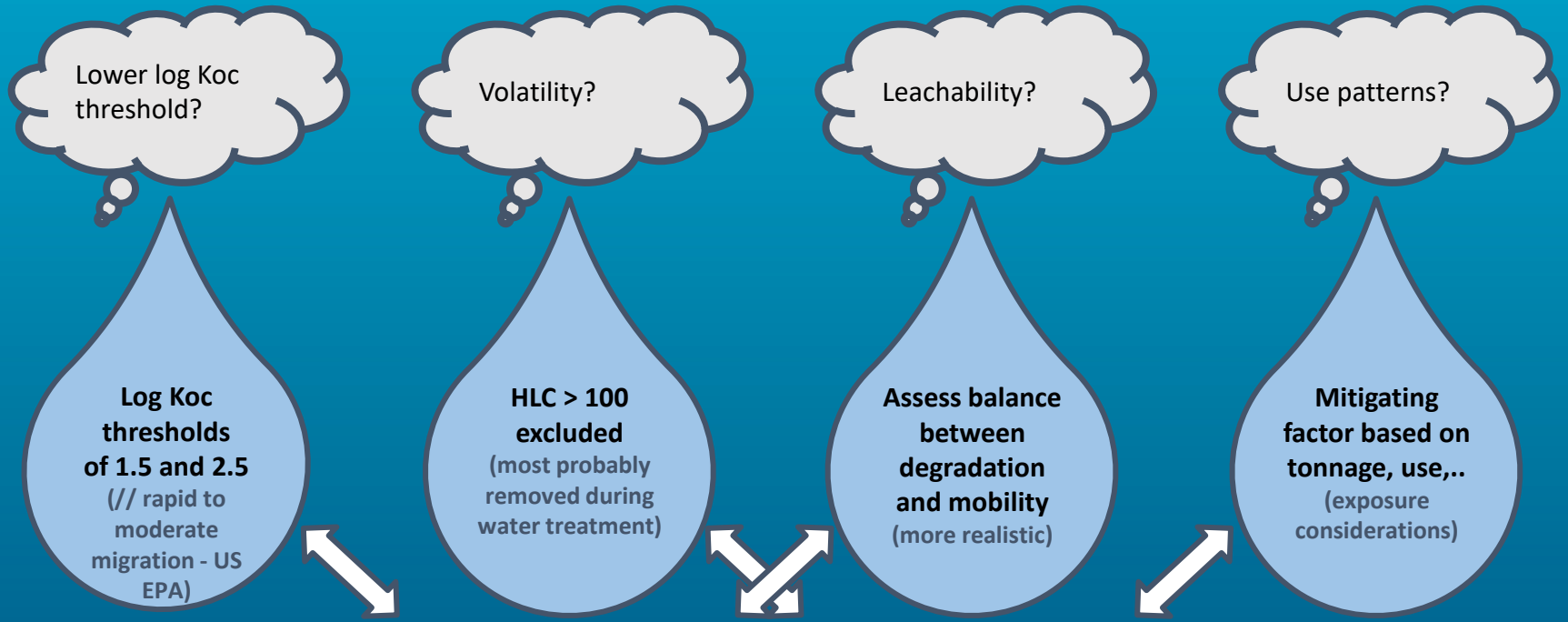
Neumann & Schliebner (2019). Protecting the sources of our drinking water, The criteria for identifying Persistent, Mobile, and Toxic (PMT) substances and very Persistent, and very Mobile (vPvM) substances under EU REACH Regulation (EC) No 1907/2006.
Arp & Hale (2019). REACH: Improvement of guidance and methods for the identification and assessment of PMT/vPvM substances

Scientific challenges - The right safety net

Screening
Based on intrinsic properties and use patterns; multiple levels: low tier tests to higher tier tests (// REACH process for other endpoints)

HAZARD

How to refine the screening criterion proposed to make it more efficient?



Rely on multiple datasets of monitoring data from drinking water to test/refine the strategy (POC).

Scientific challenges - The right safety net

How to rationalize them?

Toxicity?

HH classifications of Annex XIII of REACH
(protect the consumers)

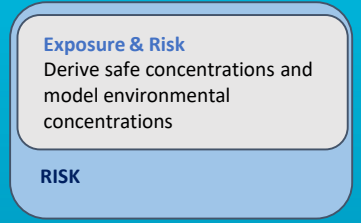
Use patterns?

Highest tonnages with highest release rates
(highest probability to be found in DW)

Screening
Based on intrinsic properties and use patterns; multiple levels: low tier tests to higher tier tests (// REACH process for other endpoints)

HAZARD

Scientific challenges - Improving risk assessment



Deriving environmental concentrations to assess the risk (compare to safe levels)

One of the current weaknesses is the lack of a holistic model for the man-via-the-environment assessment

Possible solutions

Develop a new model specifically for mobile substances
(in progress, Cefic LRI project ECO54)

Make use of actual monitoring data, i.e. the actual environmental concentration
(within a framework to define)

Scientific challenges - Improving risk management

Risk Management
Adequate measures to control risks of identified uses

RISK

Put in place adequate measure(ment)s to avoid releases leading to risk

European companies need to conform to existing EU measures: the Water Directive, REACH & Industrial Emissions Directive

Some initiatives already in place and improvements achieved

(see next presentation in the agenda - "Initiatives to minimize emissions and exposure– an industry view")

Case-specific based on use, properties and cause for emission

Further developments could increase effectiveness of measures put in place

Concluding remarks

- Protecting drinking water for consumers is a necessity
- Already efficient frameworks in place (PPPR, WHO GV, DWD)
- Complement these frameworks to strengthen and anticipate
- In order to do so, there is a need to target the substances of concern, by using appropriate criteria to screen and then prioritize them
- Data sharing will facilitate this - know what the current issues are, build on those for selection of appropriate criteria

- Cefic is looking forward to share and discuss ideas and refinements with stakeholders to find a workable solution

Any questions?

Thank you for your attention