

Policy Implementation Dialogue on Reducing Hazardous Substances in Construction



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SUSTAINABLE WATERS

NonHazCity 3



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The following document summarises contributions by the participants during the workshop on April 8 and 9 in Vienna. The summary follows the thematic thread of the workshop and highlights the key aspects of the presentations and discussions, based on the personal understanding of the author.

1.1 Goal of the workshop

Cities can have more impact than national governments or EU on the success or failure towards climate neutrality, circularity and non-toxic environment. Through planning/creating buildings, owning buildings, managing buildings and/or re-purposing existing buildings they can change markets. Starting from this vision, the workshop aimed to:

- Keep the chemicals topic on the environmental agenda, where currently the attention of policy makers goes away from environment and the remaining action is concentrated on mitigation and compensation regarding climate change.
- Expose the NonHazCity idea and the [CCC](#) approach to views of a broader audience.
- Harvest experience/ideas from local practice for developing policy recommendation to national or EU level how local action can be supported.

1.2 Hazardous substances in building material a priority concern?

It is estimated that building and construction (during its life-cycle stages) contributes 30 to 40% to the problems to be targeted by the [green deal objectives](#), not only related to greenhouse gas emission, but also due to the use of materials containing hazardous substances and through generation of waste. *Hence every solution goes through buildings.* It is very important to make policy makers aware of these facts. The following document summarises contributions by the participants during the workshop on April 8 and 9 in Vienna. The summary follows the thematic thread of the workshop and highlights the key aspects of the presentations and discussions, based on the personal understanding of the author.

When launching lighthouse projects or awards towards “greener buildings”, well-being of people and aesthetics may play an important role. For example, hazardous chemicals in building materials may have a technical function and/or a decorative function, both potentially requiring different replacement strategies. Switching to building materials not depending on industrial chemistry (if that is possible) is to a large extent also a cultural issue.

1.3 Towards climate neutral and circular building by 2050

The different stages of the building life cycle are connected to different impacts, e.g. the use of buildings contributes a lot of GHS emissions, while construction contributes to resource depletion and the end of life to hazardous waste generation in high quantities.

Renovation and repair, which are technically similar to construction, create opportunities to make the buildings fit for future, 85% of building stock in 2045 exists already today.

At present, the socio-economic value of end-of-life buildings is small and hence the presence of hazardous substances is an additional barrier to circularity of materials.

There are very many sectorial policies addressing buildings ([see slide 8 of EEA presentation](#)) which can be seen as one of the reasons why changes are extremely slow. An overarching strategy would be beneficial but politically difficult to achieve. However, being aware of the policy-web around buildings and construction may nevertheless help to identify suitable hooks for chemicals issues.

1.4 Pollution load from buildings – No clear figures

There are no easy-to understand and transparent figures on the contribution of building and construction to the overall toxic load on humans and environment, and also no benchmarks or targets for mitigation/reduction of the toxic pressure. The latter is related to the fact, that for many toxicants no safe thresholds exist, and on top the effects of the simultaneous presence of various hazardous substances is hardly predictable. Compared to climate change mitigation, the data driving a policy towards non-toxic environment are much more uncertain and difficult to communicate.

A few proxis however were mentioned during the workshop:

- 40% of the overall plastic consumption becomes part of buildings.
- 16,000 chemicals and polymers are potentially used or contained in plastic (PlastChem, 2024).
- Based on high throughput modelling, 55 top priority chemicals of high concern have been identified to be released from construction, in particular diisocyanates and formaldehyde (DTU study, 2021).
- There is growing evidence that exposure to endocrine disrupting chemicals (EDC) contribute substantially to certain forms of disease and disability, and the related annual costs in the EU are estimated to sum up to an order of magnitude of 150 billion EUR or more (Trasande 2015/2016).
- Various biomonitoring studies on chemicals in humans have been published over recent years, all pointing to the simultaneous presence of a broad range of hazardous substance in the body. However, based on the currently available data it is rarely possible to quantify the contribution of single sources to this overall exposure.
- There is also some evidence of success: Data from the cities of Stockholm and Västerås indicate that the concentrations of the plasticiser DEHP in human body and in the environment are decreasing, as a result of the long-lasting regulatory discussion around these substances. Comparable time-trends have been also observed for certain flame retardants. However, the successes of the past will not help in preventing future legacy pollution being created today, hence additional efforts are needed.

1.5 Municipalities want to act on chemicals

Municipalities want to protect their citizens against identified hazards, including those that are related to chemicals. Though the rules for marketing of chemicals are made at EU level, there is a lot of reasons to act locally:

- The EU regulatory process for restricting (single) substances is very slow (10-20 years), which is as long as the whole life of a new-born to adult.
- The lifespan of buildings is very long, i.e. hazardous chemicals incorporated into a building may create a problem for future generations. Exposure during use and waste phase remains also for substances that have been regulated long ago.
- There are still many chemicals on the market with inconclusive (or no) hazard data (REACH process following registration is slow) and hence the attention needs to go beyond chemicals known to be hazardous today (e.g. via full declaration of chemicals content [> 2%] use of building logbooks).
- Regulation on the horizon is paving the way for innovation and voluntary measures by suppliers of building materials, provided they find customers. Here the purchase power of municipalities plays a key role, it can open new market opportunities for suppliers.

However, green procurement needs to be aware of the trade-offs between the different objectives of the Green Deal. The use of biocides for prolonging the service-life of wooden facades was discussed as an example.

1.6 Procurement and purchasing as learning process

Green criteria cannot be developed and included in the last week before publishing a tender. Longterm coordination of the work by a dedicated function in the organisation is needed to give clarity and guidance for everyone involved. Also, there is a need for a generic and transparent approach to scope the green requirements to what the market can deliver. See slide 2 and 3 from the City of Stockholm presentation for illustration ([ChemClimCircle Presentation, slide 2 and 3](#)).

1.7 Toxfree Construction in Helsinki and in Västerås

Some learnings were shared from toxfree (kindergarden) construction projects in Helsinki and Västerås.

- Ten “green deals” in Helsinki, including construction of kindergarden from SVHC-free materials, or emission-free construction sites.
- A [criteria databank](#) was created; based on initial i) early market dialogues and ii) further experience in selecting materials.
- Ecolabels were generally experienced as being helpful for tox-free construction.
- Small companies can be more flexible to innovation, and thus the criteria don’t prevent market access for smaller companies

- Decreasing trends of content of carcinogens and endocrine disrupters in construction products in Västerås, but still problems with other chemicals (including still plasticisers).
- [BvB system](#) used for the purchase of materials and logbook created. In Västerås, a function has been installed in the construction department to run the system for information/assessment on building products at routine basis.
- The BvB system is also used by private real estate companies
- Logbook maintenance during lifetime of the building (in particular for smaller renovation) is a challenge.

1.8 Accessible databases on chemicals in construction products

BvB and [Baubook](#) are two examples for service companies running functioning data and assessment systems for the regional market (Stockholm and Vienna).

- Suppliers provide information on composition of products (voluntarily) and pay a fee for getting their products registered. In both cases, significant parts of the market are covered, i.e. market forces seem to work.
- The data can be fed into assessment tools which supports choices to be made by the purchase managers for construction and renovation works. *BvB* carries out such assessments, while *Baubook* only provides the data and refers to suitable assessment tools. The information supports logbooks on chemicals in buildings.
- During the discussion the question was raised, whether it would be not useful to initiate a process towards harmonisation of assessment criteria across the different tools.

1.9 Regulatory framework – Policy Challenges

- The current regulatory instruments targeting chemical are slow and/or too limited in scope
 - Still Incomplete knowledge about hazards of chemicals on the market (REACH); slow process of biocide review, thus many of the *most harmful substances* are still on the market.
 - Information transfer on SVHC, based on REACH Article 33 or Waste Framework, does not really work.
 - Digital Product Passport (DPP) foreseen under the Construction Product Regulation so far only refers to SVHC; while DPP under the Ecodesign Regulation refers to all substances of concern.
- Screening/testing protocols on materials (indoor emission, leaching to water, SVHC content) are available but they are not systematically used.
- The regulatory set-up around construction materials is challenging:

- Member States set requirements for safety of buildings and COM (and MS) enable the free market for chemicals (REACH and CLP)
- Recycling of construction/demolition material take place under the waste domain (mostly regulated by Member States)

1.10 Opportunities and Bridging Gaps

- The new Construction Product Regulation defines an extended role for the EU Commission, and input from Member States is required for the review of criteria for six product groups defined so far.
- The Technical Screening Criteria under the Taxonomy Regulation go beyond SVHC in requesting economic actors to identify hazardous substances in inputs and outputs, to identify and assess suitable alternatives and to document controlled use conditions of their products. However, in the current discussion on the burden-reduction related to Corporate Sustainability Reporting and Taxonomy there is some political pressure on the Commission to remove the more challenging SVHC-equivalents from Appendix C again.
- Emission of CMRs from building material to indoor air could be restricted based on tools available.
- EU Commission's Zero Pollution Action Plan is an opportunity to bring together different policies, for example
 - Flagship 4: zero pollution choices in products
 - Flagship 6: show case for zero pollution solutions for buildings
- Tools for Green Public Procurement could be used in interaction with new Construction Product Regulation.
- The Digital Product Passport (DPP) would be an opportunity to facilitate digital building logbook.
- Under Article 33 of REACH or by other mechanisms, there should be an obligation to confirm the “non-presence” of SVHC in materials or products.
- Recycling of potentially contaminated materials should be only allowed, if the economic actor has sufficient knowledge on the content of the material and if there is a documented assessment for what the material can be used.

1.11 Issues and Solutions

- **Full traceability on chemical content** of products needed (SDS and labels is not enough).
Ensure
 - Confidentiality mechanisms being available and accepted,
 - Data can be used for modelling,
 - One point of access,
 - In some product areas (e.g. vehicles, certain textiles), industry has already created functioning mechanisms.
- Set **stringent (mandatory) minimum requirements** for buildings and construction product at EU level; in order to give industry orientation for investment
 - However, local GPP by municipality is needed to drive innovation and market development.
 - Requirements must be easy and consistently applicable, and tools available to technically support.
- **Enable circularity**
 - Targets for using of circular material needed.
 - The conflict between zero-pollution and circularity for the materials of the past cannot be solved (and hence has to be managed), but it's the design of material today that can prevent such conflicts in the future.
 - More emphasis needed on keeping built-up infrastructure in shape (renovation: removal of contaminated material + new material) and potentially re-use for other purposes.
 - "Pre-demolition audits" should be mandatory (i.e. cataloguing components that need attention/special treatment).
 - Circularity has a strong local/regional dimension.
- **Build capacity**

1.12 Feedback by participating municipalities

Motivation

- People do want healthy houses; construction workers do want safe workplaces.
- Goals: Less waste (and related costs) and better health (and less health care costs); security of material supply for construction also in the long run.
- Create impact on the local/regional market.

Pre-requisites

- Municipality needs to take the decision by themselves and then back the people who do the procurement.
- Local politicians need to be taken into on board; clearer decisions needed.
- Also, room is needed to address national/regional conditions, and thus excessive harmonisation is not desirable.
- Regulation of chemicals at EU level is an important trigger for making local/regional markets pro-active (i.e. responsive to customer's demands long before a regulatory restriction enters into force).

Support needed

- Clear and operational green procurement criteria (beneficial if harmonized across tools and municipalities) and best practice examples help a lot.
- Simple assessment systems (including software tools), but at the same time also more expertise needed in the purchase(procurement offices).

Experience

- Price is usually not the problem when purchasing chemicals; but service companies may need to change working practices when using alternative chemical products.