DISCUSSION PAPER

27 MAY 2020

Chemicals Strategy for Sustainability

This paper was developed in the context of a stakeholder dialogue that followed our submission to the EU Commission's Roadmap consultation on the future Chemicals Strategy for Sustainability. It is meant to trigger an exchange of policy ideas or suggestions to inform the dialogue but does not constitute the agreed position of Cefic or its Members.

Safe and sustainable by design

Issue

- Chemicals policy should reconcile the following aspects, while enabling the transition to a climate-neutral Europe: circularity, prolongation of the use phase, resource-efficiency, CO_2 emissions, water use, reduction of environmental emissions under a 'zero-pollution' agenda, societal concerns, economic and social contribution. Today, there is **no established standard practice for product sustainability assessment**. In view of the complexity of such assessment, a structured and harmonised approach is needed to avoid 'my sustainability vs your sustainability'.
- **Environmental and human health safety which is a 'must-have' starting point,** on which we should never compromise. Safe is the starting point of sustainable, but it is not enough. Establishing that chemicals are safe requires identifying potential hazards very early in the innovation process. Current regulation is largely based on the traditional path of animal testing to provide insights into these potential hazardous effects, particularly when it comes to scaling up volumes. We need to find mechanisms to reliably and more effectively predict hazard and exposure potential for assessing safety, both at laboratory and at larger scale level. To accelerate innovation, we need to accelerate safety testing.
- The Roadmap refers to Eurostat data showing that hazardous chemicals "*still represent 74% of the total chemical production in Europe*". The number or volume of hazardous chemicals produced is not in itself a good measure of potential impact on human health or the environment, nor is it a good indicator of sustainability. Whilst many chemicals, both man-made and natural, are hazardous, if produced in closed loop systems and used safely (in line with REACH), there is limited risk (for example life-saving pharmaceuticals) Focus should be on those substances that are 'very hazardous', and where there are potential releases. More generally, we need to find better indicators of progress towards sustainability.
- At political level, there is a general call for **substitution** or elimination of hazardous chemicals that needs to be realistically addressed.

Approach proposed

- Focus on release/exposure potential and ensure **differentiation between different severities of hazards** (as REACH does with SVHC) as not all hazards can be 'put in the same box'. Indeed, CLP differentiates between different hazard classes and different severities of hazard, i.e. categories. For example, skin irritation (lemon juice is a skin irritant) cannot be considered at the same level as skin corrosion or carcinogenicity.
- Work with **Eurostat** to come up with better indicators of sustainable consumption and production, beyond "consumption of toxic chemicals by hazardousness".

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- **Expand from hazard-driven substitution to safe and sustainable-by-design,** i.e. a 'holistic substitution' that encompasses safety, different sustainability impacts and value chain drivers throughout the lifecycle.
- Develop a widely accepted framework **defining 'sustainable-by-design' principles and a reference product sustainability performance assessment methodology (or set of methodologies)** common to all substances, products and processes:
  - It should build on existing initiatives particularly the one from the World Business Council for Sustainable Development on sustainable product portfolio assessment (https://www.wbcsd.org/Projects/Chemicals/News/framework-to-assess-sustainability-of-company-product-portfolios), SusChem SIRA; Product Environmental Footprint (PEF);
  - It should guide on how to define acceptable trade-offs for achieving an **overall improved sustainability profile**, with **safe production and use of chemicals as a minimum requirement**;
  - The methodology could be complemented with product standards**;**
  - Both new materials as well as existing ones should be assessed for sustainability;
  - It should be holistic but also realistic and pragmatic;
  - The approach should be based on **lifecycle thinking, product performance** and rigorous science.
- **Accelerate product safety testing**
  - In order to reduce the time required from R&D to actual placing on the market and to deliver cost-effective innovation, we would need i) to identify current rate-limiting steps/factors in establishing chemical safety at different stages of product development (in a way that is accepted by regulators) and ii) to clear the hurdles with the objective to **launch safe products faster into the market**. A study run by a contractor would be the first step.
  - Clearing the hurdles would likely involve the development of an improved, innovative product safety testing scheme in collaboration with EU agencies and the Commission. Such testing should be accepted by regulators, avoid the use of animals and explore the potential of new digital technologies for predictive toxicology.

Cases/evidence/examples

- Hazards vs societal benefit: Oxygen is hazardous, it is a dangerous oxidising gas that can react violently but is safely supplied in gas cylinders. It is also a naturally occurring gas and it saves lives.
- Likewise, hydrogen is extremely flammable. However, it is the key component of fuel cell electric vehicles hence a key contributor to climate change mitigation and to sustainability.
- Examples of existing practices of companies – non-exhaustive list - based on work from the WBCSD:

- Solvay-SPM-Guide: Solvay-SPM-Guide.pdf
- Clariant Portfolio Value Programme : Clariant Case Study Portfolio Value Progra
- BASF Sustainable Solution Steering: BASF_Sustainable_Solution_Steering_2020.

- DSM: https://www.dsm.com/corporate/sustainability/brighter-living-solutions.html
- WBCSD Chemical Industry Methodology for Portfolio Sustainable Assessment : https://www.wbcsd.org/Programs/Circular-Economy/Factor-10/Sector-Deep-Dives/Resources/Chemical-Industry-Methodology-for-Portfolio-Sustainability-Assessments

How to do it concretely (which legislation, etc.)

- The development of a reference product sustainability performance assessment methodology should be a rigorous and inclusive exercise, **involving a multi-stakeholder process (**with European authorities, civil society, academia and industry including SMEs) **led and funded by the European Commission to ensure its credibility and legitimacy.**
- **A phased approach needs to be devised.** It will take a few years to come up with a standard scheme. Possible components**:**
  - Common understanding on the principles of 'safe and sustainable-by-design' when applied to chemicals/materials/product
  - Key dimensions to be integrated in a product sustainability performance assessment
  - Common LCA, SEA) and TEA[1] assessment framework; and agreed minimal requirements
  - Agreed set of guidelines for making balanced informed choices when different effects occur ('trade-offs')
  - Standards for data quality and tools, building for example on ISO standards 14040-44 (life cycle assessment principles and framework) and 14025 (environmental labels and declarations)
  - Assessment of whether 'product category rules' are needed
  - Standardised requirements regarding the communication on relevant chemicals in products along the value chain, making use of the most up-to-date communication technologies (that may ultimately be used for KPIs)
  - Methods to assess the presence of hazardous chemicals in materials and products, to ensure possibilities for recycling.

[1] LCA, SEA and TEA – life cycle assessment, socio-economic assessment and techno-economic assessment