

## ESIG Stakeholder “Solvents and the Green Deal”:

### Safe and Sustainable Solvents & their Applications – Today and in the Future

#### Safe and sustainable chemicals & materials – Views of the European Commission

- Christina Markouli, EU Commission, DG RTD (Research and Innovation)
- Irantzu Garmendia-Aguirre, JRC (Joint Research Centre) – ISPRA

Christina set the scene by providing the policy context & showing the links to other policies and initiatives. Safe and sustainable by design (SSbD) is the innovation arm of the Chemicals Strategy for Sustainability (CSS). Whilst explaining the impact, purpose and scope of the SSbD it was stressed that SSbD is a Research & Innovation (R&I) approach to promote use of the latest scientific knowledge, harmonize assessments and to meet ambitious levels for safety and sustainability in innovation. SSbD is voluntary and promoted across EU research programmes, especially Horizon Europe.

Irantzu went into some details of the Commission’s SSbD framework looking at the underpinning concepts such as re-design and life cycle perspective. The framework is a pre-market innovation approach for the design of new or the redesign of existing chemicals and materials as well as processes and products. The 4 steps of the assessment were explained

- Step 1 - Hazard assessment of the chemical/material
- Step 2 - Human health and safety aspects in the chemical/material production and processing phase
- Step 3 - Human health and environmental aspects in the final application phase
- Step 4 - Environmental sustainability assessment

She concluded at showing how industry can currently contribute namely by testing the framework during the ongoing two years testing phase and giving feedback to the Commission on how to improve it or by joining IRISS, the International ecosystem for accelerating the transition to SSbD chemicals, materials, products and processes. This is a three-year project, started in June 2022 and funded by Horizon Europe. It takes a value chain approach and comprises actually seven value chain, all of which are using solvents.

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#### Solvents specific “breakdown” & main challenges

ESIG provided a brief overview of its activities, highlighting the extensive work done to assure the safe use of solvents, even beyond the regulatory requirements. Examples given stressed the industry’s proactiveness to be ahead of legislation when it comes to sustainability like developing Environmental Footprint compliant LCA datasets for selected solvents. ESIG has entered the path of SSbD in September 2022 when the Strategic Research and Innovation Plan published by the Commission mentions the development of solvent formulations without hazardous substances and toxicity aspects linked to their volatility and risks of pollution along their entire life cycle. Members are currently in the stage of getting familiar with SSbD and different frameworks and initiatives and also today’s event should help to establish what would make most sense be it promoting, testing or even developing a solvent related project.

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## Perspective & views of solvents' downstream users

A Panel bringing together company representatives from the value and the EU Commission representative discussed the challenges. This included questions like

- drivers for sustainability in the different sectors and companies
- trade-offs like accepting a degree of toxicity to get closer to the goal of net zero
- data sharing
- suitability for SMEs

It was stressed that SSbD is an iterative process, it is not exclusive but allows to see red crosses to raise awareness where to improve, even though this might not be immediately possible.

Solvents always have a functionality in each process so often the solvents available to perform their function is limited. Drop in solutions for “greener” solvents are often just a disguise as the properties stay the same and the toxicity profile does not change. If a solvent is less hazardous often the performance is getting down. Also any new solution needs to be aiming at the high volumes needed. In most processes formulation cannot be so easily changed. Innovation in the processes as such might be a way forward.

The value chain approach was clearly seen as opportunity. Industry confirmed its commitments to continue to innovate and look at new ways like SSbD to do so.