



EUIndTech25, June 2-4, 2025,
Kraków, Poland




Designing Safe and Sustainable Materials and Chemicals

SSbD Implementation and Digitization

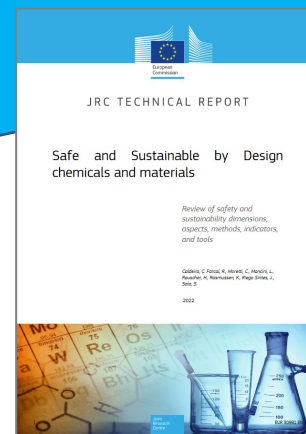
Garbiñe Guiu Etxeberria
Industrial Transformations, DG RTD
European Commission

Safe and sustainable by design (SSbD) framework

Expected application and impact of SSbD

- Steer the innovation process towards the green industrial transition 
- Substitute (as far as possible) or minimise the production and use of substances of concern 
- Minimise the impact on health, climate and the environment (air, water, soil) during sourcing, production, use and end-of-life of chemicals and materials 

 **Enabling change through R&I**



Stakeholder input

2025

The EU Green Deal



Zero pollution



Climate neutrality



Circular economy

From SSbD science to EU policies

The EU Green Deal



Zero pollution



Climate neutrality



Circular economy

New circular economy action plan (March 2020)

- **make sustainable products** the norm in the EU

- empower consumers and public buyers

- **focus on the sectors that use most resources** and where the potential for circularity is high such

- **ensure less waste**

- **make circularity work** for people, regions and cities
- lead global efforts on circular economy

ESPR

(March 2022)

- product durability, reusability, upgradability and reparability

- **presence of substances that inhibit circularity**

- **energy and resource efficiency**

- recycled content

- remanufacturing and recycling

- **carbon and environmental footprints**

- **information requirements, including a Digital Product Passport**

One substance, one assessment package

(December 2023)

Proposal for a regulation establishing:

- a common data platform on chemicals
- a monitoring and outlook framework for chemicals

It includes reference to:

- **Academic data**
- HBM data
- **Sustainability data**
- Early Warning System

New Commission

- Clean Industrial Deal
- Circular Economy Act
- Chemical Industry Package

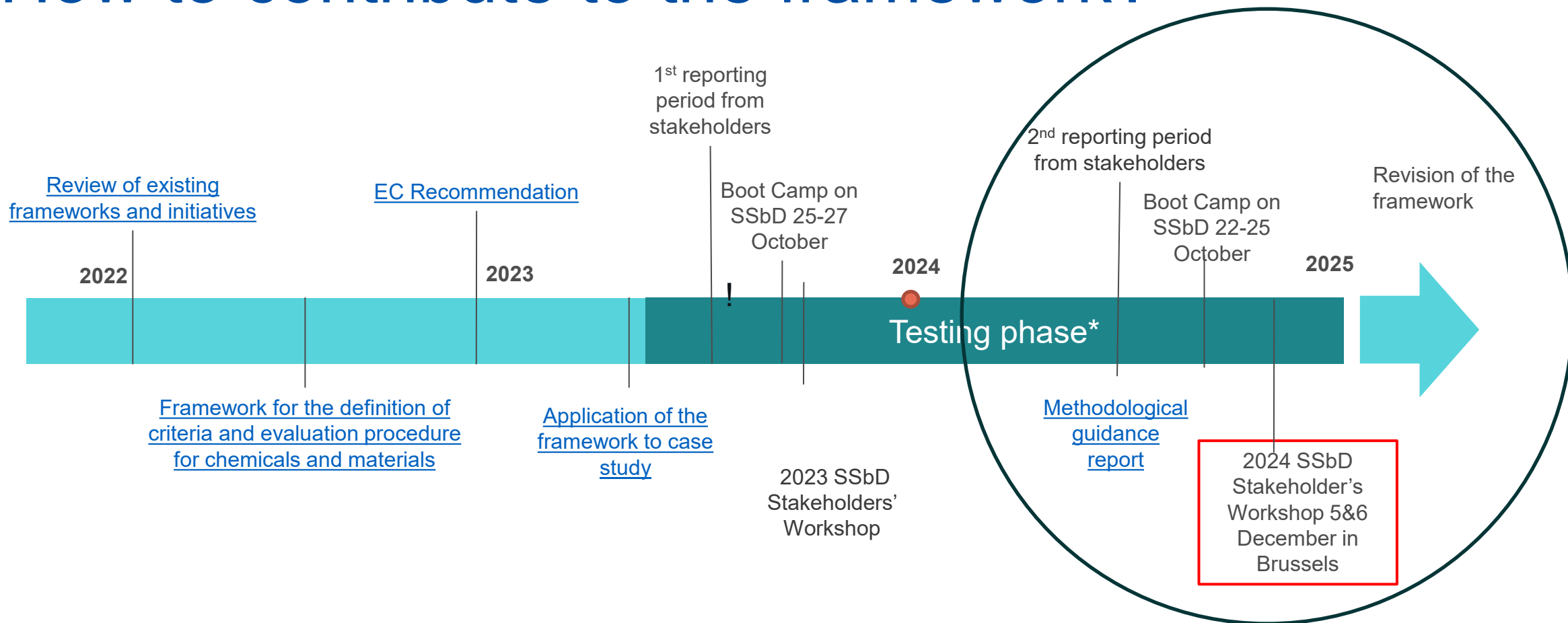


“We must and will stay the course on the goals set out in the European Green Deal”

“We will put forward a new chemicals industry package”

“This requires putting research and innovation, science and technology, at the center of our economy”.

How to contribute to the framework?



Want to be kept informed? Join our stakeholder network

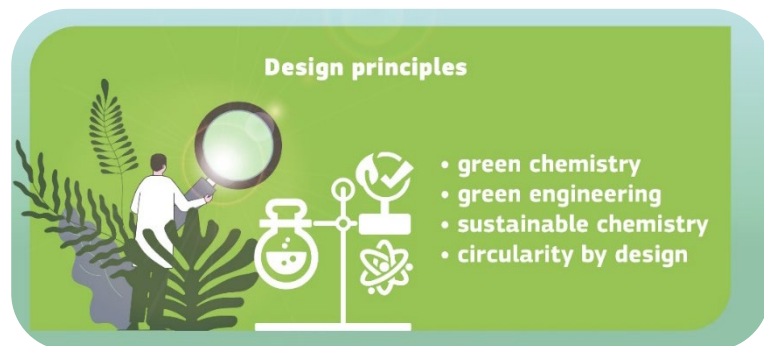
*For updates on testing phase join the SSbD stakeholder network:

<https://ec.europa.eu/eusurvey/runner/9c66713d-15e4-b8ea-36b4-d5d1d8b471db>

The framework

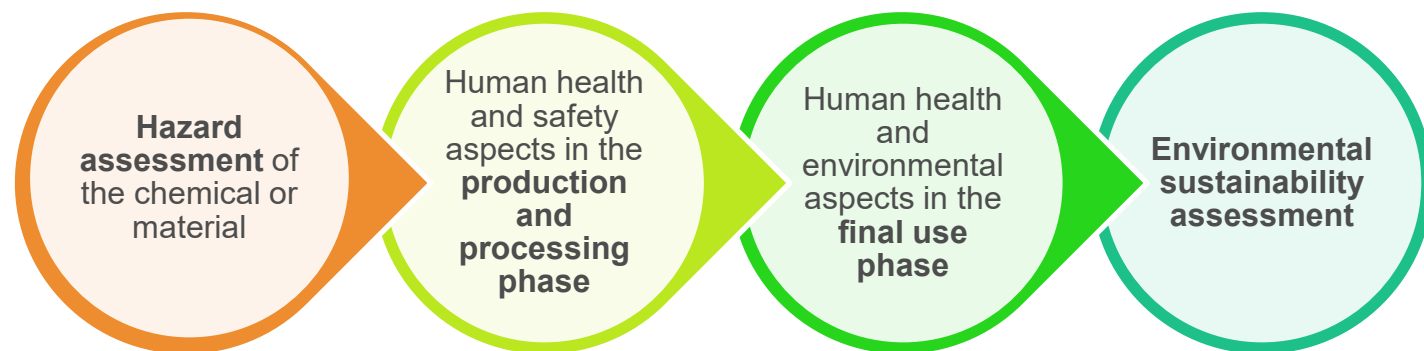


Stage 1: guiding (re)design principles



Setting the 'What & Why'

Stage 2: safety and sustainability assessment



Sequential, in parallel or focus on hotspots.

2025 SSbD framework revision

« A ‘voluntary’ decision making tool to drive innovation towards safer and more sustainable chemicals and materials » Keep the level of ambition of the full SSbB framework assessment while improving workability.

Scoping

user centered

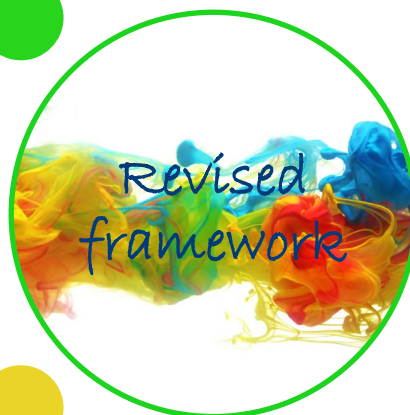


Simple- Full SSbD

LCA -Benchmark

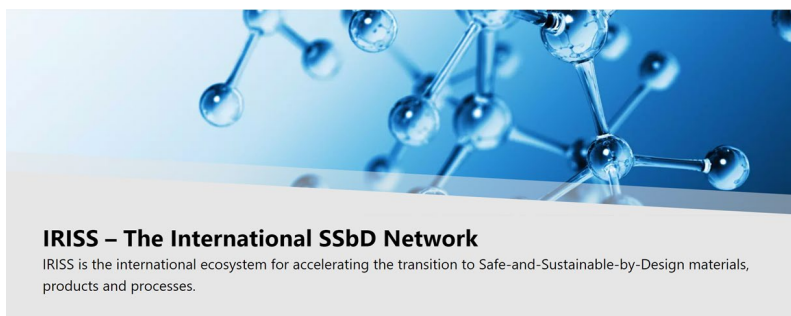
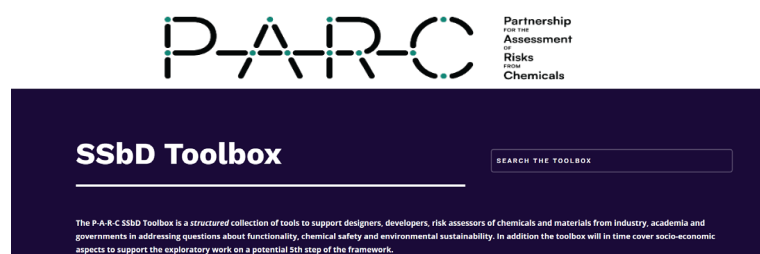


Socio-economic Assessment



- For the future, data and information of high quality and reliability on chemicals are essential to inherently safe and sustainable innovation and impact assessment
- Possibility to start small and simple with a few indicators, in low data/high uncertainly scenarios - for innovation decision making

A rich selection of guidance and input!



Continuous support through

A EUROPEAN ASSESSMENT FRAMEWORK

Development SSbD assessment framework

- Screening and testing methods for SSbD
- Integrated approach for impact assessment
- Computational models
- Accelerate the uptake of LCA

SSbD Toolbox within PARC

Co-funded partnership - beyond SSbD



Establishing a international SSbD Network



Developing SSbD chemicals and materials

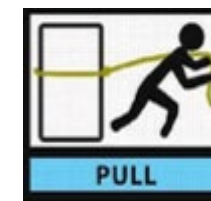
- Polymers & coatings
- Alternatives to existing substances of concern (surfactant, flame retardant or plasticers)
- SSbD materials for textiles, agricultural applications, sensors
- Alternatives to PFAS



SSbD has been referenced in topics under: **Innovative Health Initiative Circular Bio-based Europe** calls



SSbD is part of **Batteries for EU** and **IAM4EU** SRIAs.



Thank you



Join the SSbD stakeholder network: <https://ec.europa.eu/newsroom/rtd/user-subscriptions/3833/create>



Dedicated SSbD webpage: https://research-and-innovation.ec.europa.eu/research-area/industrial-research-and-innovation/key-enabling-technologies/chemicals-and-advanced-materials/safe-and-sustainable-design_en



Chemicals and Advanced Materials webpage: https://research-and-innovation.ec.europa.eu/research-area/industrial-research-and-innovation/key-enabling-technologies/advanced-materials-and-chemicals_en

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