IRISS – pilotní projekt pro zapojení komunit v oblasti SSbD

ICCT 2024, Sekce Digitální a zelená transformace plastikářského průmyslu, 16. 4. 2024

Martin Šilhan
SUSCHEM CZ

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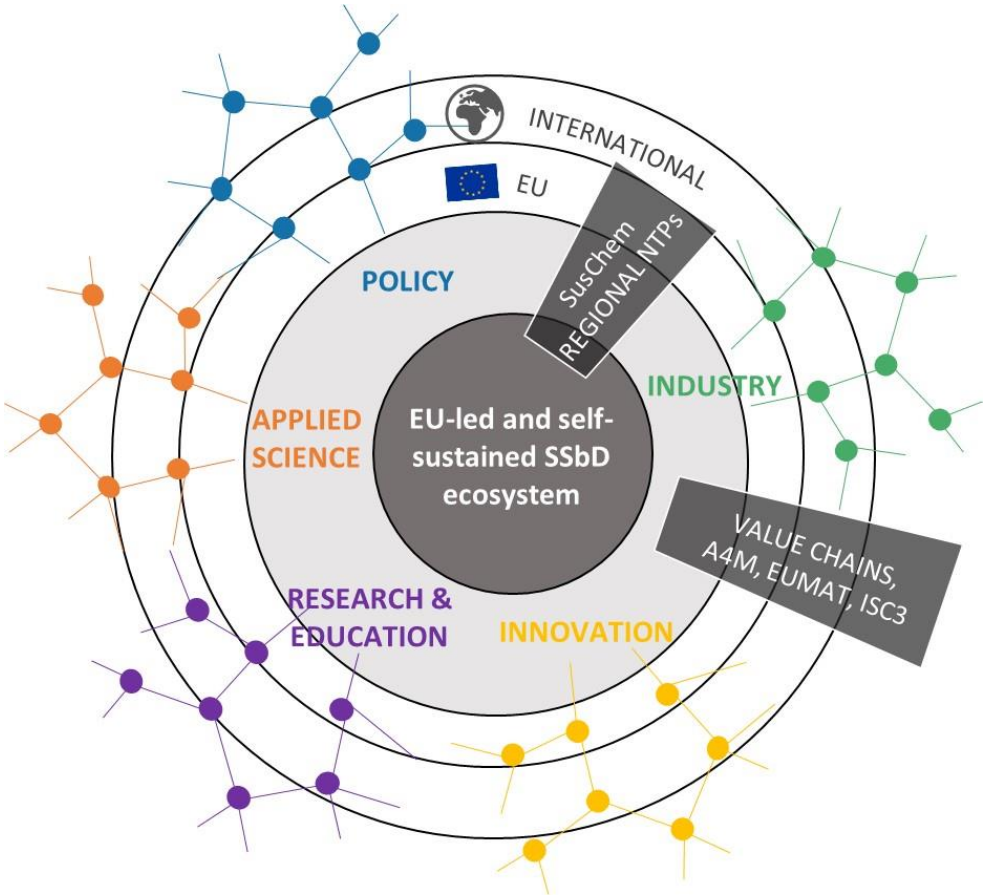
IRISS

IRISS Consortium



ivl Svenska Miljöinstitutet

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cefic

BNN

Tekniker
Member of Basque Research & Technology Alliance

National Institute for Public Health and the Environment
Ministry of Health, Welfare and Sport

Empa
Materials Science and Technology

ETP Fibres Textiles Clothing
European Technology Platform

CLEPA
European Association of Automotive Suppliers

EMIRI

INL International Iberian Nanotechnology Laboratory

EFCC

IPC

APRE
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Safe and Sustainable by Design 1/3

The 'safe and sustainable by design' (SSbD framework) is a voluntary approach to guide the innovation process for chemicals and materials, announced on 12/2022 in a Commission Recommendation. It aims to

- steer the innovation process towards the green and sustainable industrial transition
- substitute or minimise the production and use of substances of concern, in line with, and beyond existing and upcoming regulatory obligations
- minimise the impact on health, climate and the environment during sourcing, production, use and end-of-life of chemicals, materials and products

The framework is composed of a (re-)**design phase** and an **assessment phase** that are applied iteratively as data becomes available.

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Safe and Sustainable by Design 2/3

The (re-)**design phase** consists of the application of guiding principles to steer the development process. The goal, the scope and the system boundaries – which will frame the assessment of the chemical or material – are defined in this phase.

The **assessment phase** comprises of 4 steps: hazard, workers exposure during production, exposure during use and life-cycle assessment.
The assessment can be carried out either on newly developed chemicals and/or materials, or on existing chemicals and/or materials to improve their safety and sustainability performance during production, use and/or end-of-life.

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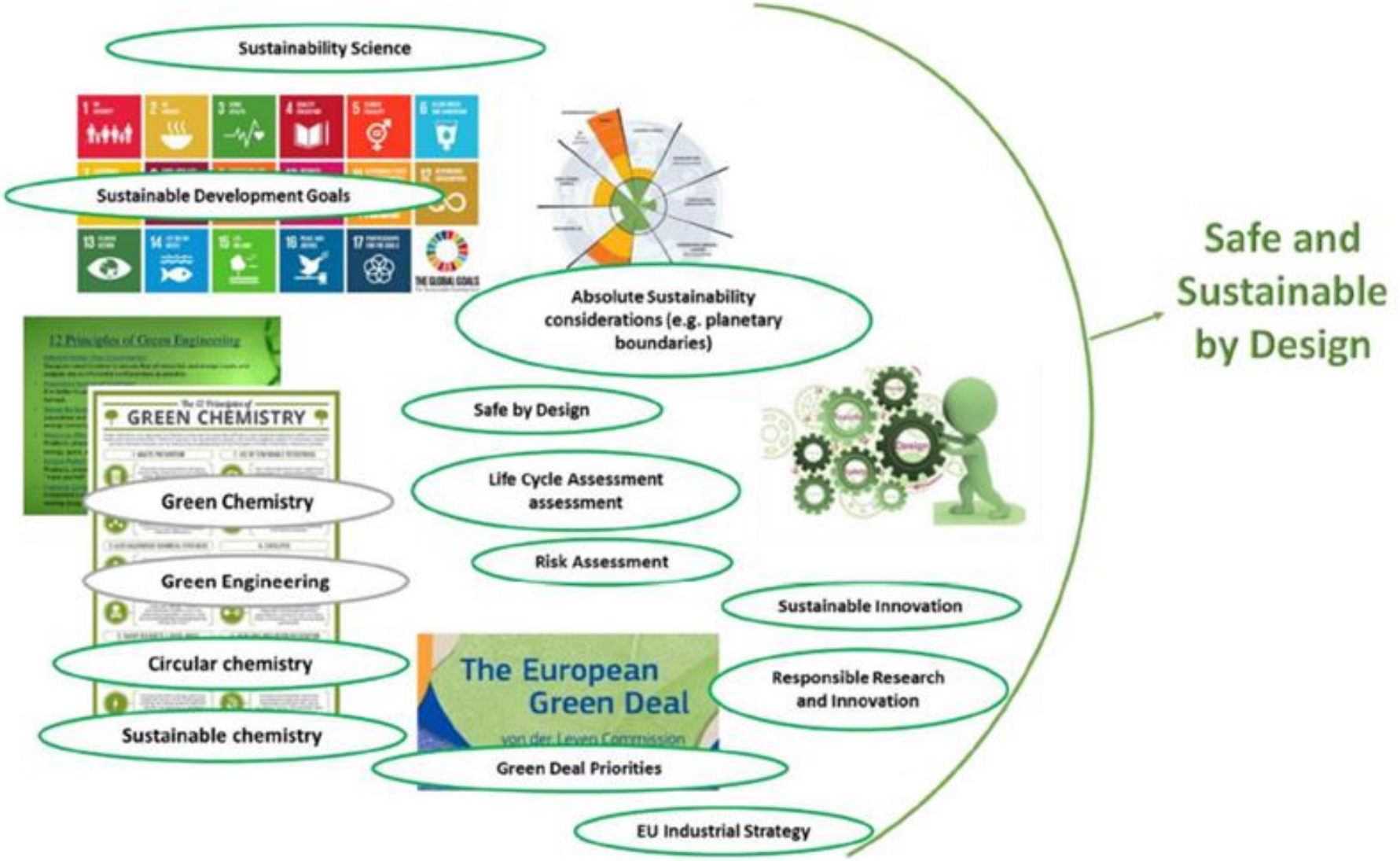
Safe and Sustainable by Design 3/3



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JRC SSbD Framework

- *Safe-and-Sustainable-by-Design (SSbD) is an approach to the **design, development and use of chemicals and materials** that focuses on providing a function (or service), while reducing harmful impacts to human health and the environment.*

Published reports:
doi:10.2760/68587
doi:10.2760/404991

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IRISS project goals 1/2

1. To develop a state-of-the-art SSbD ecosystem that is supportive for the uptake and utilization of safe-by-design (SbD) and sustainable-by-design (SusbD) strategies by industry, especially SMEs.

2. To contribute to criteria and guiding principles for SusbD development driven by the application of life cycle thinking in materials and product design and in line with ongoing work in European and international initiatives.

3. To establish a structure for a permanent, gender balanced, inclusive, international and sustainable experts network accessible for all relevant stakeholders.

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IRISS project goals 2/2

4. To develop SSbD roadmaps encompassing three, agendas identifying: 1) scientific research needs, 2) skills, competences and education needs, and 3) knowledge and information sharing needs. The roadmaps will be developed in a co-creation and inclusive process for the implementation of SSbD in industry and society including prioritised steps within research, innovation, skill demands, management and governance.

5. To develop a monitoring and evaluation programme that systematically scans for state-of-the-art knowledge, information gaps and translates these into specific R&D questions and governance needs that feed into systematic roadmap updates.

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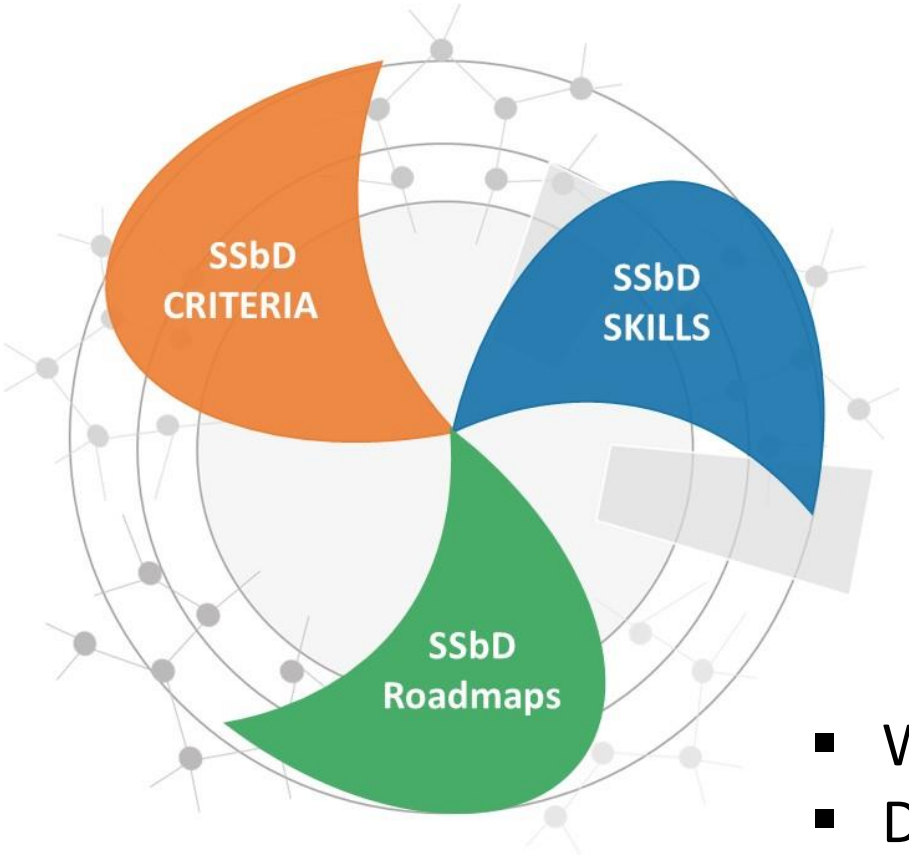
Activities



- Compiling SSbD criteria and guiding principles
- Building skills and identifying competence gaps
- Co-creating and regularly updating roadmaps that ensure alignment between R&D, governance and industry
- Developing a working framework for establishment of an expanded SSbD community, creating a common mechanism to engage, mobilize and bring together diverse stakeholders

- Workshops for SMEs
- Developed training about SSbD at university level
- Unifying methodology

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Goals

The IRISS project aims to connect, synergize and transform the SSbD community in Europe and globally towards a life cycle thinking

- Building, sharing and transferring the skills and knowledge on SSbD
- Develop a global permanent network for long term cooperation between the networking members, engaging partners beyond the consortium, throughout and beyond the duration of the project
- **Focus on materials including both products and processes**, considering the extensive progress to-date in chemicals and nanotechnology fields
- Strongly support the SSbD implementation in industry to achieve more safe and sustainable products for society
- Establish cooperation mechanisms with relevant international initiatives to align and leverage the extensive international community
- Establish collaboration with industry, EC and the projects that are working with SSbD concepts

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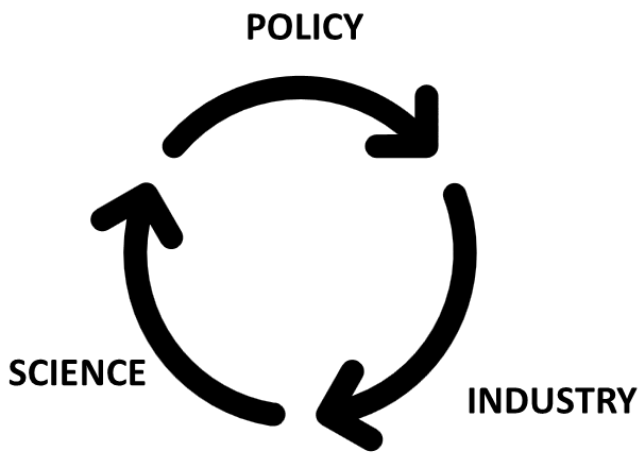
Progress on the development of SSbD supportive roadmap

- EC RTD
- EC JRC

- **IRISS-PARC collaboration** (pharm. research platform)
- **IRISS-ongoing H2020 and HEU projects**
- **IRISS-OECD synergies**



Science-Policy-Industry Interphase

- Packaging
- Textiles
- Construction chemicals
- Automotive
- Energy materials
- Electronics



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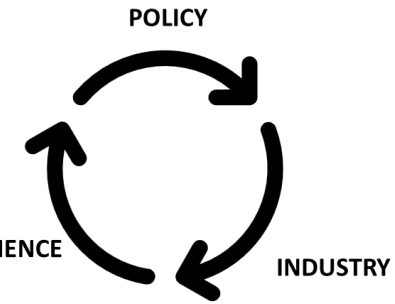
Progress on the development of SSbD supportive roadmap

Building structural and efficient information sharing process and network

Policy: IRISS structural dialogue with **EC RTD and EC JRC**



Science-Policy-Industry Interphase

Science:

Initial steps on operationalization of SSbD

- **IRISS-PARC collaboration**
- **IRISS-ongoing H2020 and HE projects**

Bringing science to harmonization and standardization

- **IRISS-OECD synergies**

Industry: IRISS consortium consists of NTPs including:

- **Packaging** (IPC; Industrial Technical Centre for Plastics and Composites)
- **Textiles** (ETP; EU Technology Platform for the Future of Textiles & Clothing)
- **Construction chemicals** (EFCC; European Federation for Construction Chemicals)
- **Automotive** (CLEPA; European Association of Automotive Suppliers)
- **Energy materials** (EMIRI; Energy Materials Industrial Research Initiative)
- **Electronics** (INL; International Iberian Nanotechnology Laboratory)

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D 4.1 Analysis of the value chains, their stakeholders and iniatives

Main safety and sustainability challenges

Value Chain	Criticality/ resources	Safety	Environmental Impact	Social Impact	Circularity/ Recyclability
Packaging		X (hazardous additives)	X (microplastics)		X (effective sorting and production of monomaterials)
Textiles	X (soil and water; traceability)	X (dying natural fibres; PFAS, and flame retardants; microplastics)	X (processing chemicals and effluents)	X (basic labour rights)	X (persistence of textile fibres & chemicals; landfill recycling)
Construction	X (CMR superplasticiers)		X (energy, CO_2 and H_2O footprint)		X (landfill or recycling)
Automotive	X (material restrictions; traceability)		X (microplastics from tyres; high CO_2 emissions)		X (trade-off durability vs recyclability)
Energy	X (high demand of critical raw materials)	X (hazardous materials, VC perspective)	X (high CO_2 emissions, water, chemicals and waste)	X (skilled workforce)	X (securing access to secondary raw materials)
Electronics	X (resource intensive)	X (often toxic gases, solvents, and solutions)	X (high energy, water, e-waste)	X (low-income countries for dismantling and processing)	X (difficult separating for recycling; high consumer demand)

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Join the webinars!

Early Bird? Visit www.iriss-ssbd.eu to sign up for news, events and follow the progress of the project

Official launch of network November 2023

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Děkuji za pozornost!

www.suschem.cz

martin.silhan@seznam.cz

Sledujte nás na Linkedin: IRISS – International SSbD network

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