

Joint Research Centre

Institute for Environment and Sustainability, *Sustainability Assessment Unit*

Ensuring a non-toxic circular economy

Policy intervention strategies based on life cycle approach



Constantin Ciupagea, Fabrice Mathieux, Erwan Saouter

Brussels, 5th May 2015

<https://ec.europa.eu/jrc/>

Serving society

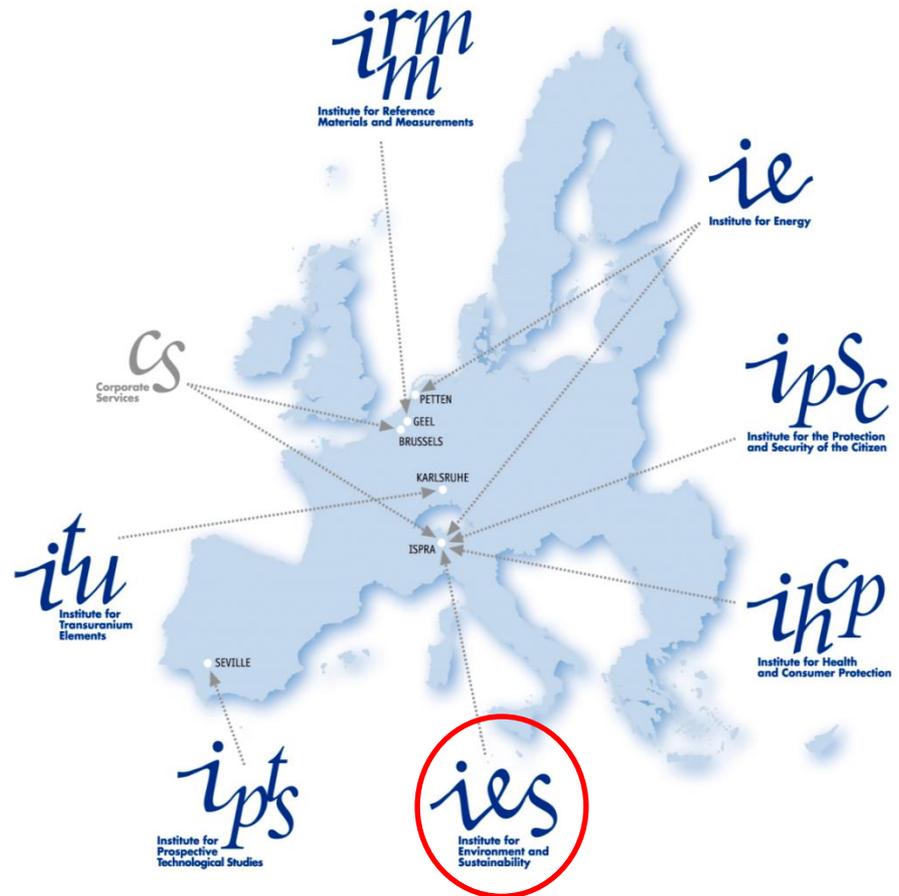
Stimulating innovation

Supporting legislation

The JRC inside the European Commission

European Commission, Joint Research Centre (JRC)

“The Joint Research Centre (JRC) is the European Commission's in-house science service which employs scientists to carry out research in order to provide independent, evidence-based scientific and technical support to EU policy, throughout the whole policy cycle.”



Context: “Promotion of material cycles without hazardous substances”



1. What is a “*hazardous substance*”?

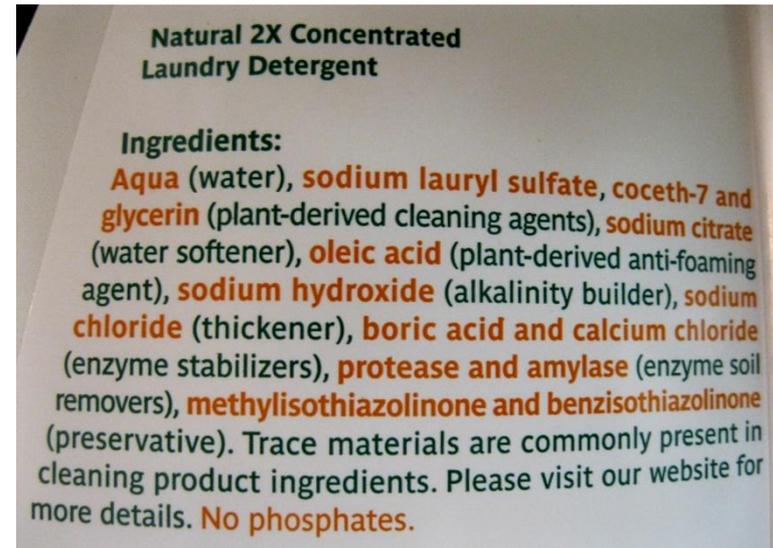
- All substances are potentially hazardous: ‘It’s the dose that makes the poison’
- To avoid confusion, we would suggest an alternative formulation:
-> “Promotion of material cycles ‘without’ substances of concerns”

2. Are we sure ‘without’ is *possible or desirable*?

- Some substances (of concerns) might be needed in some applications despite their hazardous apparent nature (e.g. energy efficiency, etc.)
-> alternative formulation: “Promotion of material cycles with limited/controlled quantity of substances of concerns”

Strategy 1: Identify and quantify substances of concerns in products

- Based on existing official list : e.g. Authorization List of SVHC in REACH (EU), CLP/GHS (UN)
- Need to get better access to the content of substances of concerns in products?
 - Through Ecodesign Directive information requirements?
 - Through EU Ecolabel criteria?
 - Through Product Environmental Footprint studies (-> toxicity scores)?
 - Through ingredient declaration (similarly to the cosmetics and the detergents Directives)?



Strategy 2: Reduce/Substitute substances of concerns

- **Promote use of substances with a better profile**
 - With lower toxicity, lower persistency, etc. -> lower scores
 - **Policy interventions:**
 - **Only an horizontal approach via RoHS, REACH?**
 - **Combine this with a vertical approach** (i.e. product-specific rules)?
- > **Example** in the context of the *Draft regulation* on Ecodesign of electronic displays:
- *Proposal* to require from manufacturers to declare the quantity of (brominated) fire retardants contained in the products;
 - Could open the floor for *differentiated WEEE fees* -> an economic incentive to reduce their use



[Peeters et al.,
Consultation Forum, Dec.
2014]

Strategy 3: better manage substances of concerns

- **Substances of concerns** that cannot be substituted **have still to be managed at end-of-life of products:**

- To ensure safety of workers in recycling plants

-> Exemple: *proposal* of mandatory marking of blowing agent in Commercial Refrigeration appliances (Ecodesign)



Figure 7-3 Example of marking of the flammable insulation blowing agent

- To avoid that substances are inadvertently found in further life cycles

-> example: *proposal* of mandatory dismantlability requirements for some components (batteries, printed circuit boards, etc.) in electronic displays (Ecodesign)



Conclusions

Major need for **policy innovations and governance** (and new overarching methods)...

- Standardization work is necessary (e.g. CEN/CENELEC activities on methods and information format)
- Monitoring and organizing past and present information could help

EU-level message: **consistency between policies**

- **Substances-related** or **horizontal** policies (e.g. RoHS, REACH)
- **Product-related** or **vertical** policies (e.g. Ecodesign, EU Ecolabel)
- **Waste related** policies (e.g. WEEE, End-of-life Vehicles)



JOINT RESEARCH CENTRE
Sustainability Assessment

European Commission - JRC - IES - SA

[ABOUT US](#) - [OUR ACTIVITIES](#) - [OUR SCIENTIFIC PROJECTS](#) - [EVENTS](#) - [JOBS](#)

ABOUT US

Welcome to the S.A., Sustainability Assessment Unit Website

The Sustainability Assessment Unit fosters sustainability principles in EU policies by developing an integrated assessment framework towards environmental quality and socio-economic viability in the decision making process. The Unit is committed to applying new approaches and methods to perform integrated sustainability assessment and impact analyses across EU policies, particularly supporting improved resource efficiency in Europe and the strengthening of a green and circular economy. The focus is on the provision of knowledge, modelling tools, reference data, scenarios and examples of best practices, which all serve as a research base for policy recommendations, often following a life-cycle thinking approach.

Two existing integrative platforms are at the core of the development:

- The Land Use Modelling Integrated Sustainability Assessment Platform (LUMP/LUISA), for the evaluation of management options in response to policy and socio-economic scenarios, based on land use modelling methods, and
- The European Platform on Life Cycle Assessment (EPLCA), for the provision of life cycle related information, data coherence and quality assurance across EU institutions and European consumers and business, based on the development of methods, guidelines and tools specific to sustainability life cycle assessments of industrial processes, products and organizations.

Both platforms will further integrate and interact with sectoral and thematic modelling facilities within and outside the JRC.

Events

January 2014						
M	T	W	T	F	S	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		
« Dec				Feb »		

News

SA_H08-Unit website

The new Sustainability Assessment_H08-Unit website is online

Thank you for your attention!

Further links and contact:

Joint Research Centre (JRC):
<https://ec.europa.eu/jrc>

Sustainability Unit (H08):
<http://sa.jrc.ec.europa.eu/>

European Platform for Life Cycle Assessments
<http://eplca.jrc.ec.europa.eu>