European Commission

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

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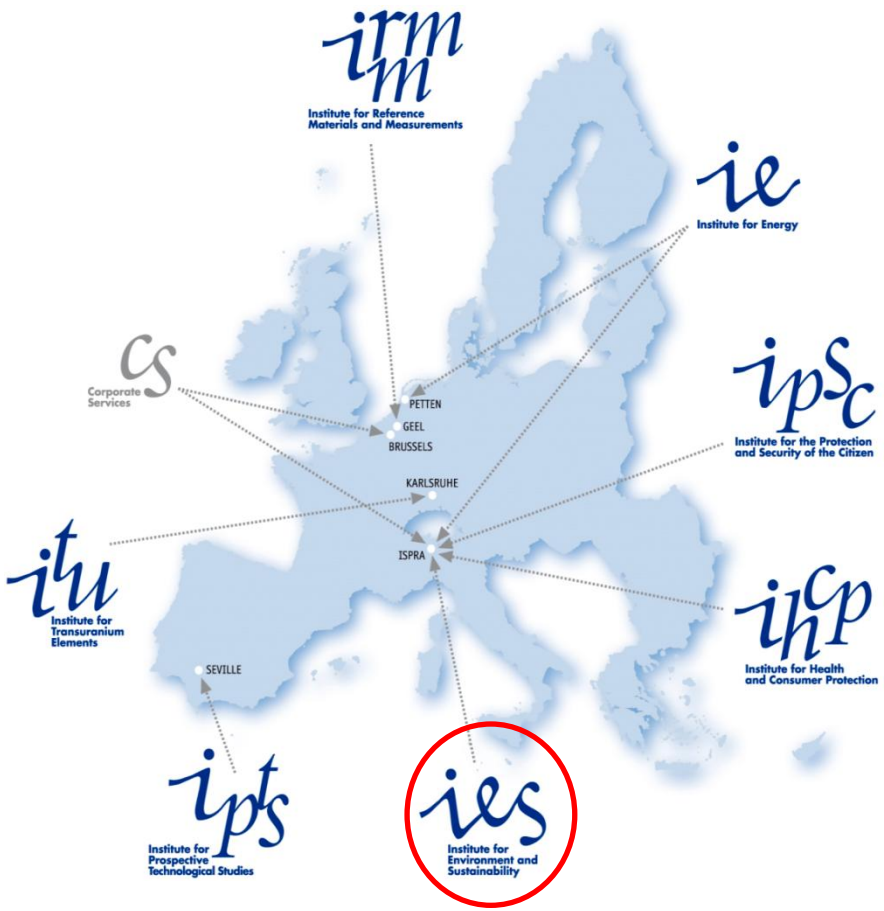


Context: "Promotion of material cycles without hazardous substances"

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?*

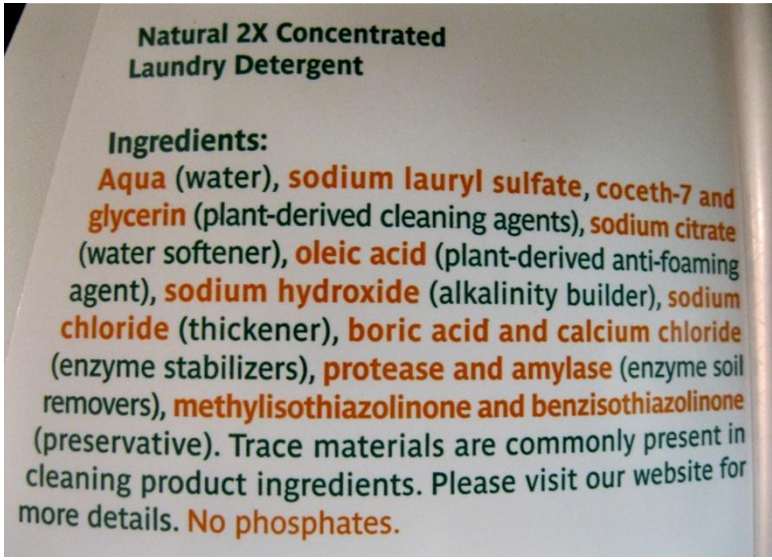
- Some substances (of concerns) might be needed in some applications despite their hazardous apparent nature (e.g. energy efficiency, etc.)

-> 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)

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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)

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