

JOINT ONLINE WORKSHOP

ANTICIPATORY LCA TO PROMOTE INFORMED DECISION-MAKING IN BIO-BASED PRODUCT DEVELOPMENT

December 4, 11:00 -13:00 (CEST)

With the participation of



Agenda

11.00 **Welcome**

11.10-11.30 **Setting the scene**

The BIORING and SuperBark approaches to sustainability assessment

Nicole Dölker, The Spanish National Research Council (CSIC) - BIORING project coordinator

Marc Borrega, VTT Technical Research Centre of Finland - SuperBark project coordinator

Applying (anticipatory) LCA in the early stage of materials development

Cyrille Durand, TEMAS Solutions, BIORING

Jovita Moreno Vozmediano, Rey Juan Carlos University, BIORING

Federico Busio, Luxembourg Institute of Science and Technology (LIST), SuperBark

11.30-12.00 **Experiences & learning from other projects in the bio-based materials and coatings fields**

- *Léo Staccioli*, ARDITEC – **LIGNICOAT** project
- *Yolanda Nuñez*, CTME - **THERMOFIRE** project
- *Federico Busio*, LIST – **ZeroF** project
- *Ana Isabel Díaz*, GAIKER – **FRACTION** project

12.00-12.50 **Open discussion**

Understand, discuss, find common views on the themes of the workshop, taking advantage of one or more guiding questions.

12.50- 13.00 **Wrap up and conclusions**

The BIORING Approach to Anticipatory LCA

Cyrille Durand, TEMAS Solutions

Jovita Moreno Vozmediano, Rey Juan Carlos University



Most of the sustainable claims on commercial bio-based resin coatings... are limited to bio-based content...with multiple references

Examples of claims and references to voluntary labeling schemes or standards

- % of green carbon or bio carbon content (14C measurement) – ASTM D6866
- % of bio-based content calculated from the mass balance - ISCC+ certification
- % of bio-based content - USDA certified bio-based



Need for more LCA information to provide customers with meaningful, life cycle based and science-based information to compare sustainability of bio-based products

Two key challenges on LCA of bio-based materials:



- How LCA data can provide meaningful, life cycle based and science-based information for green claims on commercial bio-based materials?
- How to develop LCA methodologies and manage databases limitations to provide assessment and guidance early in the materials development



Safety & Sustainability Assessment: The BIORING Approach

Bioring Early Stages

- Understanding the benchmarks through a life cycle mapping and intrinsic hazard assessment (inc.AI) of the key chemicals
- Using the below tools for an early assessment of BIORING chemicals

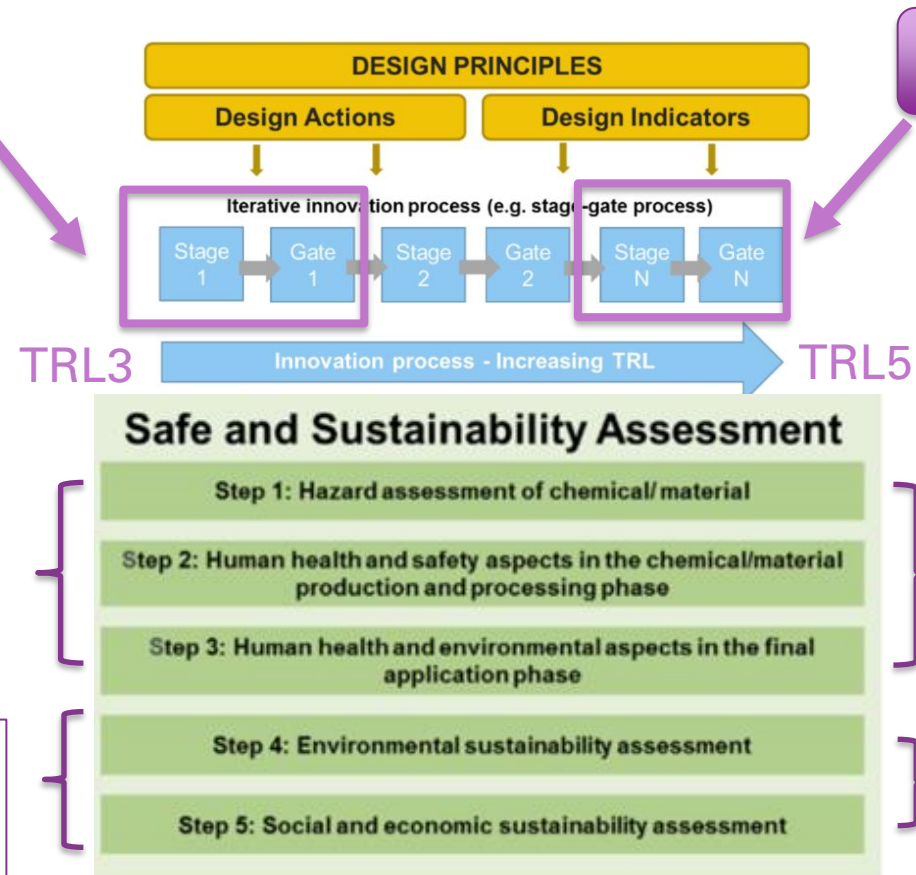


Early4AdMa

Licara Innovation Scan v3.0

Process modelling
using digital
technology(ASPEN)

Preliminary
LCA
(Ecoinvent)



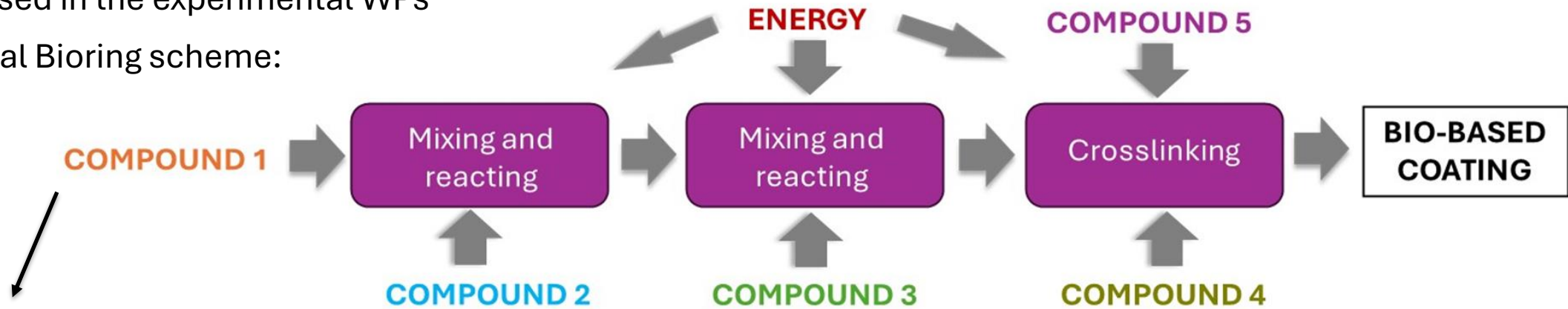
Bioring End Stages

Safety Assessment
(SSbD step 1,2&3) and
LCA of BIORING
optimized solutions

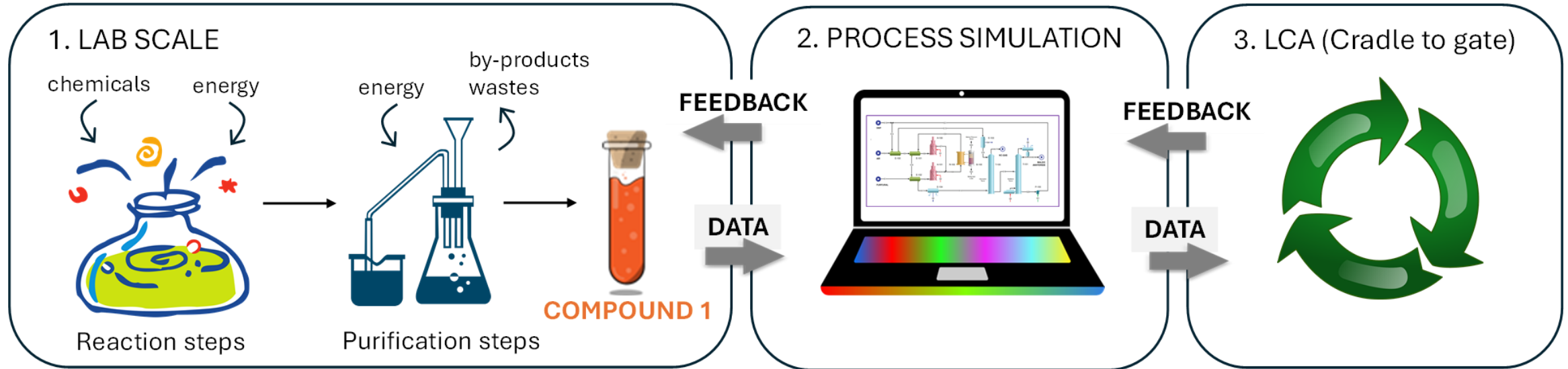
LCA activities in BIORING

Part 1. COMPLETE A PRELIMINARY LIFE CYCLE INVENTORY to perform a first assessment of the transformation routes proposed in the experimental WPs

General Bioring scheme:



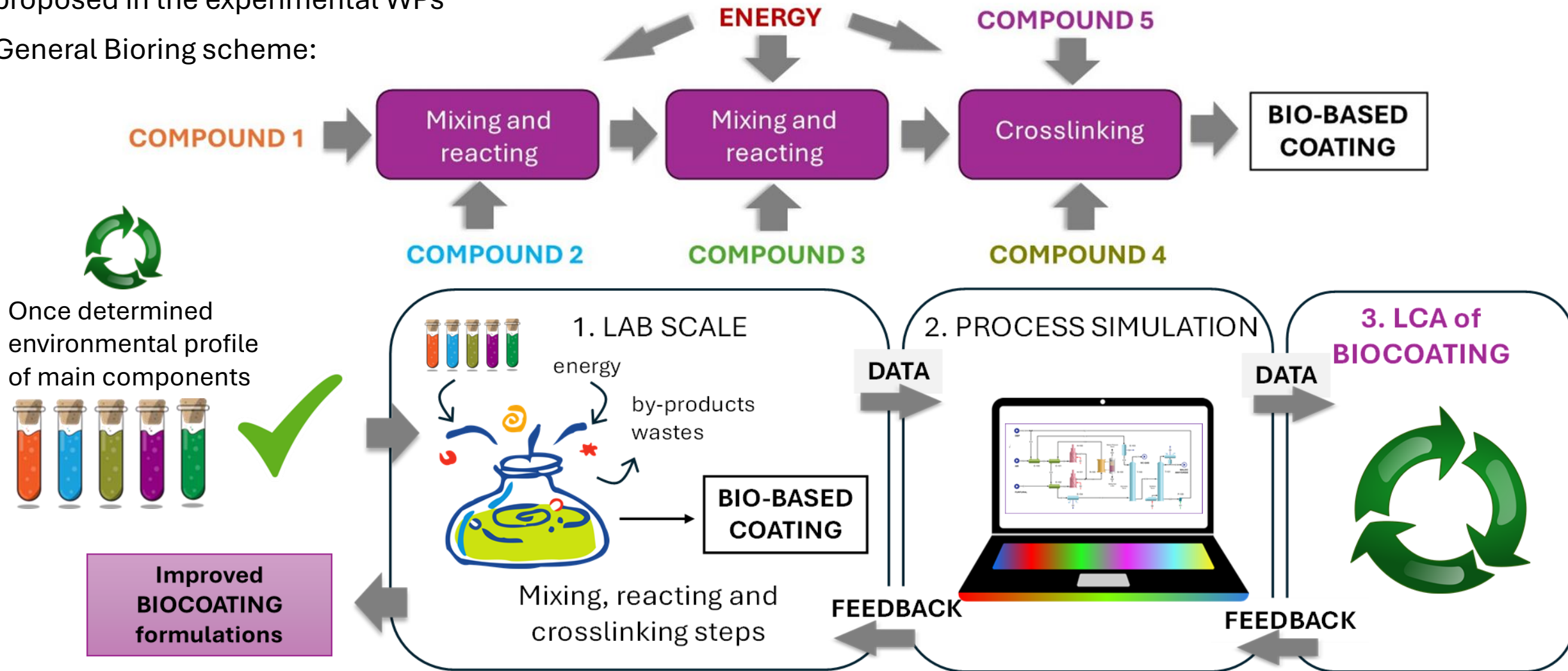
IMPACTS OF BIO-BASED COMPOUNDS USED IN THE FORMULATIONS OF BIORING PRODUCTS?



LCA activities in BIORING

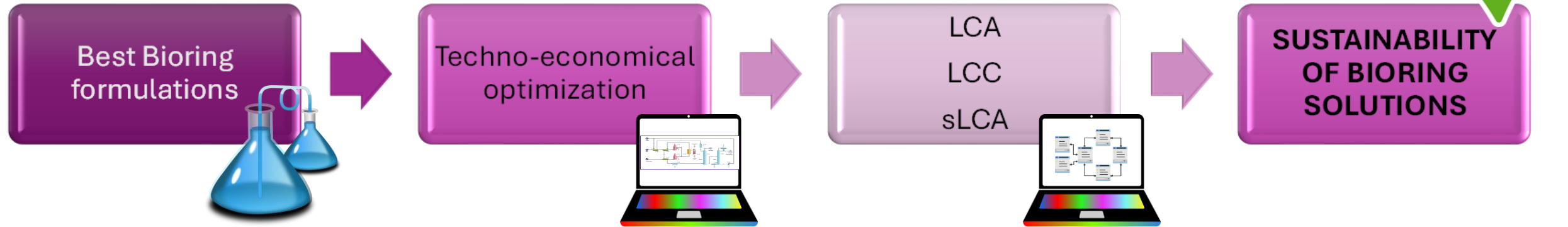
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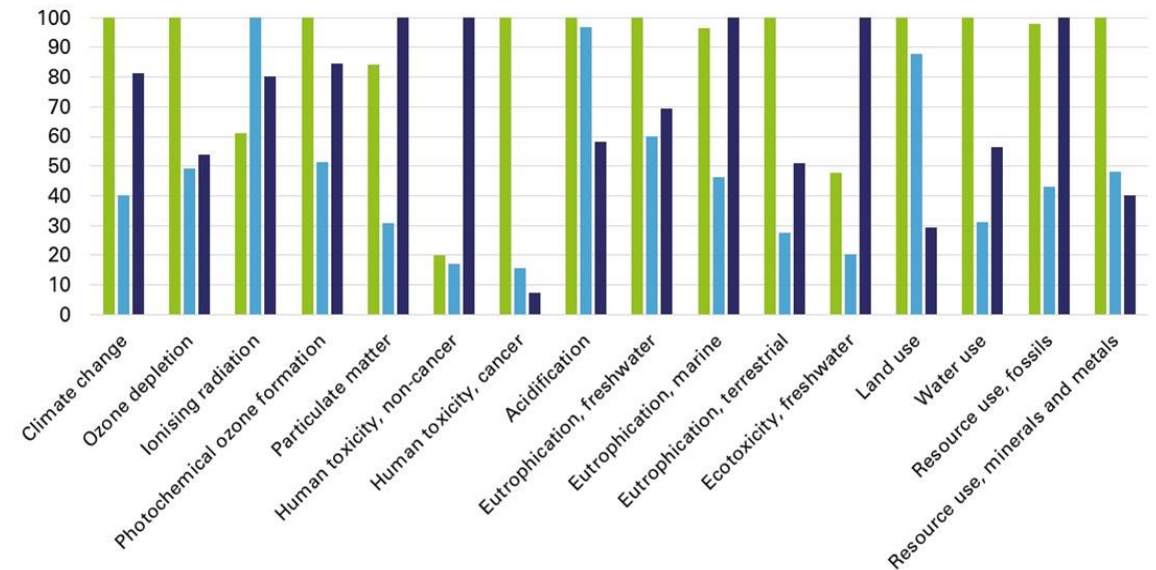
LCA activities in BIORING

Part 2. Determine SUSTAINABILITY INDICATORS OF THE MOST PROMISION BIO-COATING FORMULATIONS and COMPARISON WITH BENCHMARKS



Existing industrial (fossil-based) counterparts?

COMPARISON OF SUSTAINABILITY INDICATORS





Thanks for your kind attention