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Reconmatic National Workshop

Validation of the circularity assessment tool

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CZECH REPUBLIC



Automated CDW management solutions using digital twin in infrastructure



Automated CDW management solutions using digital twin for buildings

GREECE



Blockchain application supporting the reduction of construction waste generation used for concrete logistics processes

ITALY



Digital management of materials and waste in a railway infrastructure project

SPAIN



Off-site treatment of CDW and valorisation in recycled products and ECO-Aggregates

UNITED KINGDOM



BIM tools for digitalised waste management in design and construction stage

WP6 | List of reference documents considered

14 Sustainable assessment and certification schemes in construction

9 Standards related to LCA and sustainability in buildings

10 Existing tools and DDBB for CE and sustainability

2 guidelines for pre-demolition audits

17 Policies regulations

6 Indicators of sustainability or circularity



T6.1.2 List of documents to be reviewed

1. Sustainable construction assessment and certification schemes

- 1.1 LEVEL(s) (ICAT) ✓
- 1.2 LEED
- 1.3 BREEAM, (ICAT) ✓
- 1.4 HQE(High Quality Environmental)
- 1.5 [Circular transition Indicators 4.0](#) (CVUT - Jan) ✓

1.6 ENVISION Protocol (Italferr)

1.7 Other national schemes:

- Czech Republic
- Spain
- UK
- Cyprus
- Italy
- Greece
- China

2. Standards related to LCA and sustainability in buildings and civil engineering works,

- 2.1 CEN TC 350 (Mahmoud)
- 2.2 ISO 14040-44,
- 2.3 ISO 21930,
- 2.4. ISO 21928-2:2023
- 2.5. ISO 21929-1:2011
- 2.4 ISO 15804 (ICAT) ✓
- 2.5 ISO 15978 (ICAT) ✓
- 2.6 ISO 29887 (ICAT) ✓
- 2.7. ISO/PWI 7016 (ITC) ✓
- 2.8 ISO/DIS 59020 Circular economy Measuring and assessing circularity (Italferr)
- 2.9 EN 15643:2021 Sustainability of construction works - Framework for assessment of buildings and civil engineering works

3. Existing tools and databases for Circular Economy and Social Assessment (ITC)

- 3.1 [Katche project tool](#) (ITC) ✓
- 3.2 [Social LCA Hypobrick](#) (ITC) ✓
- 3.3 [Symbinet](#) (ITC) ✓
- 3.4 [Circular Start](#) (ITC) ✓
- 3.5 [Circularity Assessment tool](#)
- 3.6 [Circular benchmark tool](#) (CVUT - Jan) ✓
- 3.7 [Measuring the circular economy](#) (Tools shared by EU)
- 3.8 [Circulytics](#) <https://ellenmacarthurfoundation.org/resources/circulytics/resources>

3.9 <https://www.altruistiq.com> , <https://www.carbontool.com/home> (Tools/organisation available in the market)

3.10 Circular Building [Toolkit](#)

4. Guidelines for pre-demolition audits and renovation etc.

- 4.1 EU Construction and demolition waste management protocol
- 4.2 Guidelines for the waste audit before demolition and renovation works of buildings

5. Policies, regulations

- 5.1 [European waste framework](#) (Mahmoud)
- 5.2 [CE proposal Ecodesign for Sustainable Products and Construction Products Regulation?](#)
- 5.3 EU Circular Economy Action Plan
- 5.4 Circular Economy Monitoring Framework
- 5.5 European Circular Economy Stakeholder Platform
- 5.6 [Ecodesign Directive](#)
- 5.7 European taxonomy (Italferr)
- 5.8 European Green Deal
- 5.9 Product Environmental Footprint (PEF/DAP)
- 5.10 [Waste Framework Directive](#)
- 5.11 Other national schemes:
 - Czech Republic
 - Spain
 - UK
 - Cyprus
 - Italy
 - Greece
 - China

6. Best practices

??

7. Indicators of sustainability or circularity

- 7.1 [Circularity Indicators](#) (Ellen McArthur Foundation and Granta)- (ICAT)'
- 7.2 How to Assess Product Performance in the Circular Economy? Proposed Requirements for the Design of a Circularity Measurement Framework (Saidani et al., 2017) (ICAT)
- 7.3 Circular economy indicators for buildings and housing (ICAT)
- 7.4 A framework for circular buildings indicators for possible inclusion in BREEAM (ICAT)
- 7.5 The circular built environment playbook (W-GBC) (ICAT)
- 7.6 [Circular Economy Indicators Coalition](#)

#1 ENVIRONMENTAL

51 ind.

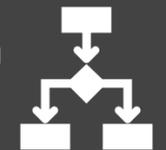
- Impacts (including noise and vibrations)
- Materials
- Water
- Waste
- Natural capital
- Energy
- Emissions



12 ind.

#4 MANAGEMENT AND GOVERNANCE

- Data availability and transparency
- Policy and legislation
- Management mechanism
- Maintenance and life extension
- Innovation



#2 SOCIAL

27 ind.

- Health & Safety (workers, users and society)
- Job creation and local opportunities
- Resilience
- Knowledge, skills and awareness
- Acceptance
- Stakeholders' engagement
- Impacts on the neighbourhood
- Cultural heritage
- Social responsibility (equity, human rights, accessibility)



#3 ECONOMIC

27 ind.

- Costs (includes life cycle costs and external costs)
- Benefits (including social return on investment)
- Incentives and funding
- Viability and risks
- Circular business (including effects on local economy)
- Value chain



17 ind.

#5 TECHNICAL

- Design
- Tools and digital systems
- Infrastructure availability
- Quality



Full list of indicators:
[LINK](#)

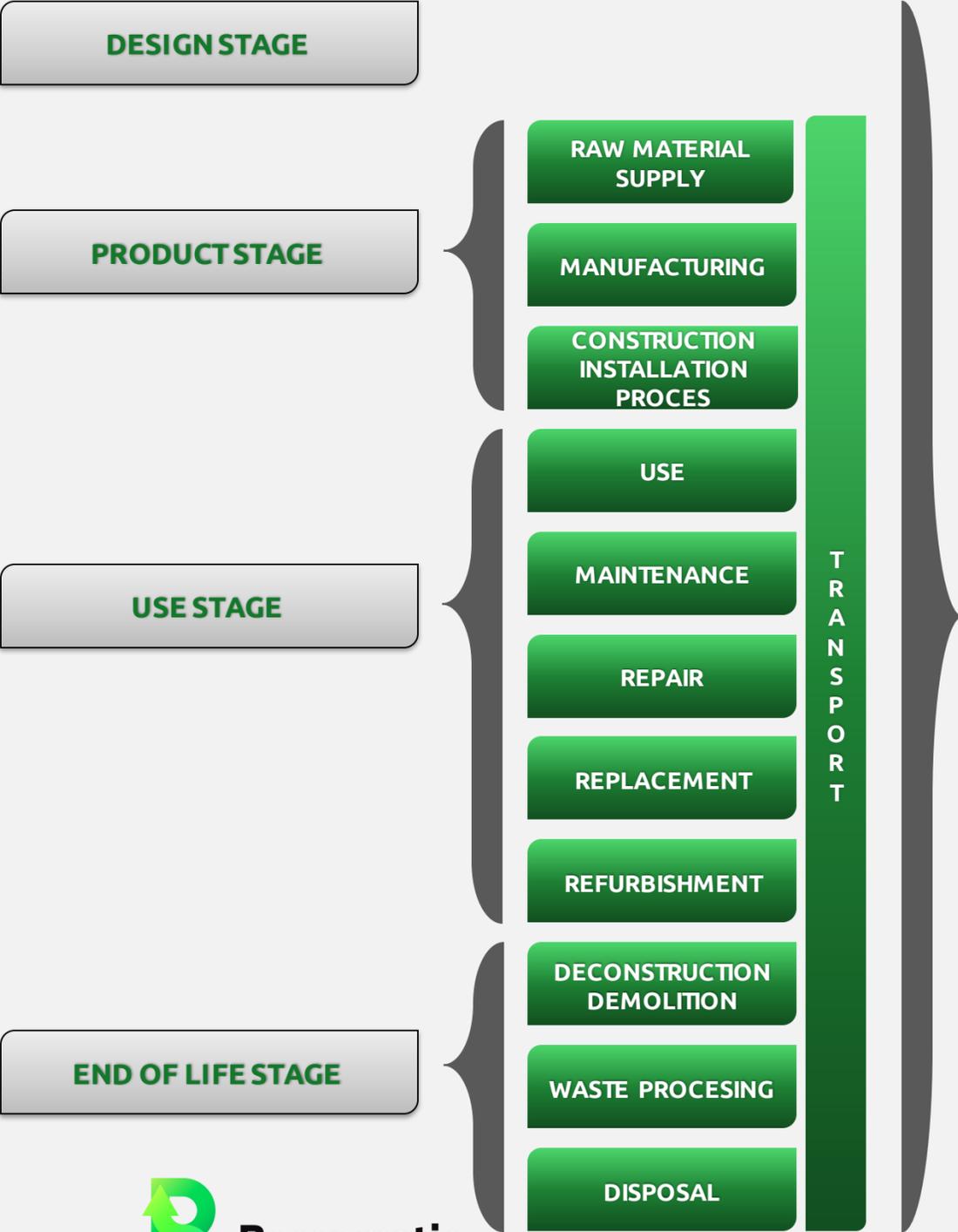
WP6 | Sustainability and circularity assessment | Methodology

Where do I operate?

In which area do I work?

What do I want to evaluate?

Do I have indicators?



PROCESS / PRODUCT / SERVICE / DEMONSTRATOR

List of applicable indicators

Linked to SDG targets



PRIORITISATION

EVALUATION

DOES IT MAKE A DIFFERENCE IN A PARTICULAR ASPECT?

GUIDANCE TO MEASURE



LIST OF INDICATORS

The final list of indicators is going to be validated through workshops

ASSESSMENT OF THE INDICATORS

Methodology Assessment for each indicator
Evaluation of the dimensions to prioritise the strategies

DESIGN AND PROGRAMMING OF THE TOOL

The first conversations have already begun with the T6.2. leaders for the design and programming of the tool.



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