

Advanced Materials and
Nanotechnology for Construction Cluster

Branding innovations beyond the technical

Life Cycle Assessment and the trade-offs of sustainable growth

INDustrial TECHnologies 2018
Vienna, 29th October 2018



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Construction Advanced Materials LCA in EU-R&I. The AMANAC Experience

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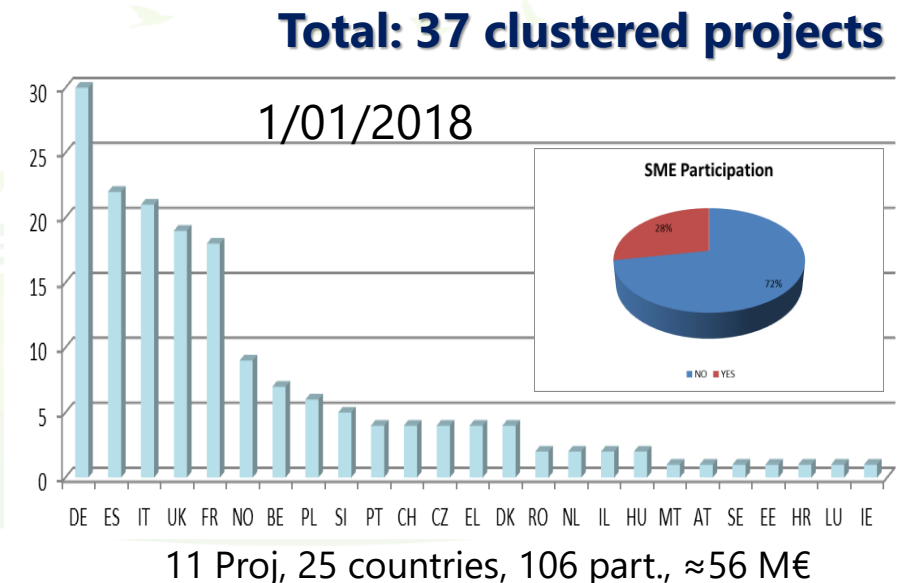
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AMANAC: Advanced Materials and Nanotechnology in Construction Cluster



- Overarching cluster set up by the Industrial Technologies Programme (EC-RTD) in Oct. 2017
- Involves **PPP-EeB & NMBP** projects → materials/systems for improving the built environment
- Builds on the experience of Nano-E2B (2011-2013) & AMANAC-CSA (2014-2017) clusters aiming at maximize the impact nanotechnologies and advanced materials towards European Industry & Society
- **Aims** to effectively support the EU R&I **industrial** and **resource efficiency policies**
 - holistically addressing **energy efficiency** & **waste out** design
 - Approaching **innovation** with a **human-centred perspective**
- **Objectives:**
 - promote communication and transfer of results
 - forum for problem-solving, harmonisation and planning

<https://www.amanac-cluster.eu/>



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Strategic Context/Global Challenges EU Construction Sector

- The largest European single activity (10% of GDP) and the biggest industrial employer.
- The built environment affects the quality of life and work of all EU-citizens.
- Construction is on a critical path to help decarbonise the European economy by 2050
- Environmental, Energy Efficient, sustainability impact on workforce or citizens life are seen as a competitive advantage
- Understanding a construction product from its entire life cycle perspective is the 1st step in developing sustainable artefacts



In keeping with these shifts, the industry is embracing the integration of life-cycle assessment (LCA) as a mechanism to quantify, communicate, and better manage potential impacts from products, assemblies... buildings/infrastructures

Policy context

➤ KETs like **advanced materials** as **incubator for innovative solutions** to tackle the different **construction challenges** are in the current EU political agenda and acknowledged in policy documents:

- the COP21 Paris Agreement,
- the UN'S Sustainable Development Goals,
- the Energy Union Strategy
- the Circular Economy Action Plan
- the Communication from the EC of the European Communities on Integrated Product Policy (IPP).

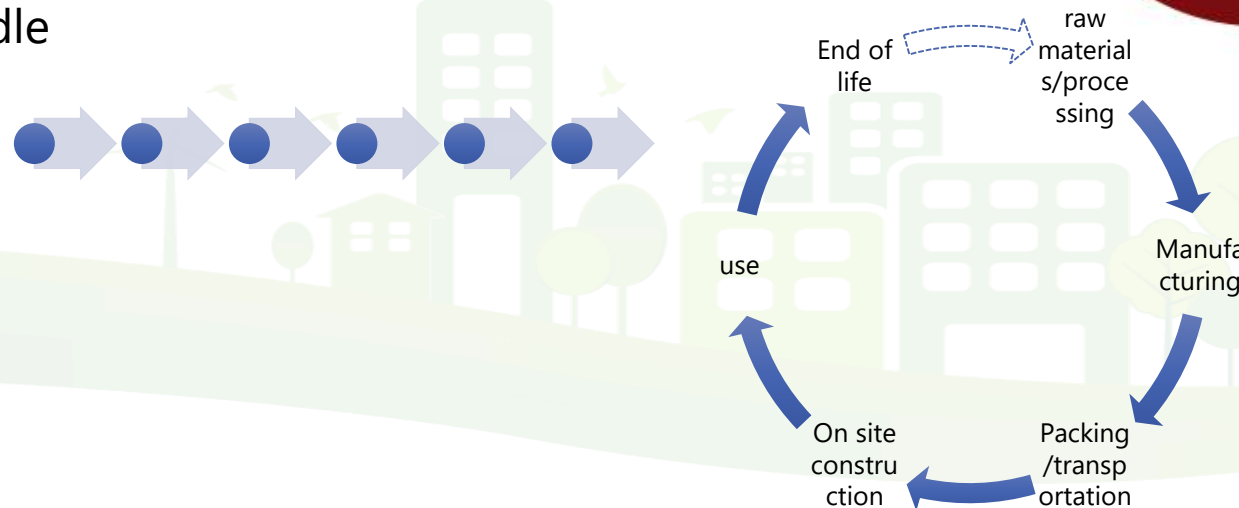
The vision of the goals provides an overall direction → but how to get there?

LCT
↕
LCA

- LCT can help identify opportunities and lead to decisions that help improve environmental and social performance may help reduce associated risks and improve economic benefits.
- Within this context, LCA can work at multiple scales and aid in decision making
 - **Whole-building/infrastructure LCA, (performance)**
 - **Design-option comparison,**
 - **Material selection/material quantity**
 - trade-off between them
- It should be noted that the LCA concept has considerably changed in the last years:
1970's LCA energy → transdisciplinary integration of models LC-SA
Cradle-to-grave → Cradle-to-cradle



LCA AMANAC: 27 FROM 29
FP7
IN ALL HORIZON 2020



WORKSHOP OBJECTIVES/STRUCTURE

To address the challenges and oportunities of Life Cycle based decision

1

- Frame the workshop: EC, ECTP, ASHRAE, CDTI Spain

2

- Are currently LCA used by EU construction sector properly harmonized tackling the social and circular economy perspectives?
- Applications of LCA for improving the branding of innovation and exploitation of new products

3

- Wrap-up of session

SPEAKERS: ECO-BINDER, EENSULATE, GELCLAD,, INNOVIP, ISOBIO,, Wall-ACE, RESHEALIENCE, ENDURCRETE , DACOMAT, dif Stakeholder

MISCONCEPTIONS?

The impact of materials in a building is mainly in its structure?

The impact of materials is hard to reduce?

LCA is too complex to integrate into our design practice?

Cradle-to-gate is enough?



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Thank you!

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