WHICH ROLES FOR LCA IN AN ECO-DESIGN PROCESS?

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How to practically use LCA in an ecodesign process?
A typical ecodesign process
Idea of product
How to practically use LCA in an ecodesign process?

- How to measure impacts of a product which does not exist yet?
- How to match the timing of the project with the delays inherent to the completion of a LCA study?
- How to share with design teams, non expert in LCA, a readable and useful information?

- Build on existing knowledge
- Make it quick
- Make it simple
BIP Browsing Impacts for Pertinence

1. Environmental regulations? YES?
   - Energy in use phase? YES?
     - Substances of concern? YES?
       - Consumables? YES?
         - Short life cycle? YES?
           - Improve production and end of life
         - Ban or reduce consumables
       - Improve end-of-life recovery
     - Ban substances of concern
   - Reduce energy consumption
   - Regulatory compliance

2. Increase the lifetime
   - Consider impacts from other products
     - Increase the service provided, the functionality
   - Improve the usage rate
   - Improve end-of-life recovery

3. Build on experience
   - Material intensity?
   - Transport intensity?
   - Production emissions?
   - Waste intensity?
LCA Screening

Make it quick!

Résultats comparés
Projet Bike - Bike final jours habitant équ.

abiotic depletion (elements, ultimate ultimate reserves) vs global warming (GWP100)

- Bike 1
  - abiotic depletion: $1.23 \times 10^3$ [8.61e-1 ~ 1.60e+0] jours habitant
  - global warming: 3.50e-1 [2.45e-1 ~ 4.55e-1]
- Bike final
  - abiotic depletion: $8.80 \times 10^{-1}$ [6.16e-1 ~ 1.14e+0] jours habitant
  - global warming: 8.80e-1 [6.16e-1 ~ 1.14e+0]

AvNir 2013 - LCA in Ecodesign
### MIMS

**Multi-Impact Multi-Step Matrix**

<table>
<thead>
<tr>
<th></th>
<th>Production</th>
<th>Distribution</th>
<th>Use</th>
<th>End of Life</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energy consumption</strong></td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Substances of concern</strong></td>
<td>≈0</td>
<td>≈0</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Consumption of natural resources (non energetical)</strong></td>
<td>+++</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Emissions to air</strong></td>
<td>+</td>
<td>+</td>
<td>≈0</td>
<td></td>
</tr>
<tr>
<td><strong>Emissions to water</strong></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Emissions to soils</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Production of waste</strong></td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td><strong>Other impacts (noise, EM waves...)</strong></td>
<td>+</td>
<td>≈0</td>
<td>≈0</td>
<td>≈0</td>
</tr>
</tbody>
</table>

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![High impact]+++ ![Significant impact] + ![Low impact]≈0

*Make it simple!*