Research Group Resource Flow Management
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Master's Thesis Opportunity in Advanced LCA

Prospective consequential life cycle assessment of wooden wall and floor elements made from industrial wood offcuts and recovered wood

Introduction:

The findings of the master's thesis will be embedded into the running research project "DUET - Circular Design and Use of Wood Building Elements" (https://www.lse.ls.tum.de/en/howi/fb-stoffstrommanagement/forschung/duet/). The DUET project aims to promote circular product design and resource efficiency by creating wood building elements with circular design from industrial wood offcuts and recovered wood, making materials easily recoverable at the product's end of life for reutilization and supporting innovative uses for resources that might otherwise be incinerated.

Overall goal of the master's thesis:

To assess the future environmental impacts which considers market effects of manufacturing and introducing wooden wall and floor elements made from industrial wood offcuts and recovered wood.

Methodology:

- The consequential approach involves identifying what happens when recovered wood and industrial offcuts are shifted from their current uses (such as energy or particleboard) to the production of new wall and floor elements, as well as the effects of introducing these new products into the market.
- The prospective approach focuses on developing future scenarios to explore how both the manufacturing of these elements and the broader market context could evolve over time.
- The product life cycle shall be modeled as future scenarios, including market effects, to assess the future environmental impacts.

Requirements:

- Start in August/September 2025
- Ideally looking for a candidate with prior LCA experience and strong motivation to learn advanced LCA methodologies
- Preferably some basic knowledge in wood or construction, but not a must
- Master thesis proposal prior to thesis registration

Contact:

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