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To whom it may concern

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"Life cycle assessment of the provision of raw materials and their pyrolysis for the production of biochar for the construction sector"

Background:

The use of biochar from pyrolysis is becoming increasingly important for the development of climate-neutral building materials. To thoroughly evaluate its contribution to climate and environmental protection, a life cycle assessment (LCA) is to be carried out. The initial focus is on the provision of input materials and their conversion into biochar through pyrolysis. In collaboration with the Sustainability Team (Tübingen, Germany) and building material manufacturers, a joint, scientifically sound assessment framework is to be created that enables transparency, comparability, and planning reliability—especially regarding greenhouse gas emissions and CO_2 storage.

Methodology:

- Conducting a life cycle assessment in all relevant life cycle phases (cradle-to-grave system boundary in relation to the requirements of Puro.earth) in accordance with ISO 14040/14044 or, if applicable, relevant supplementary standards/guidelines using common LCA software (e.g., openLCA)
- Data collection in close coordination with the sustainability team and participating building material manufacturers (primary and secondary data).
- Sensitivity and scenario analyses (e.g., different process parameters, application scenarios in building materials).
- Critical evaluation of the results in the context of current literature on pyrolysis and the production of biochar for use in climate-neutral applications.

Your profile

- Interest in life cycle assessment, climate protection, and circular value chains
- Basic knowledge of LCA methodology
- Structured, independent working style and enjoyment of interdisciplinary collaboration with partners in the field
- Good written and spoken German and/ or English skills

Contact

Interested students can first arrange a non-binding discussion on the topic with Dipl.-Ing. Dominik Wüst (see above for contact details).