

EuroTeQ Collider 2023

Theme: Verifying the feasibility of mass replacement of traditional building materials with "growing" resources

Introduction

As the carbon footprint requirements become more stringent, the construction industry will need to increase the proportion of purely natural raw materials without the need for energy-intensive secondary processing, or sourced locally to minimise emissions associated with their transport. Therefore, there is a call for greater use of building materials from natural renewable sources.

Who is behind this initiative?

DEK a.s. is a group of companies engaged in the supply of materials and services for the construction industry. With a turnover of CZK 30 billion, we are the largest supplier in the Czech Republic with a market share of approximately 25%. We currently operate more than 136 sales outlets and employ over 3.5 thousand employees.

What is the challenge?

We are looking for the development of a methodology to identify the commercial potential of building materials from natural renewable sources in Central Europe. We want to be the first to trade building products from natural renewable sources that have potential.

Interested student teams are asked to engage in the above area by

- Select crops and derived products (own suggestions and research of existing ones).
- Assess the degree of sustainability (e.g. hemp bonded with BICO fibre is not an ideal representative).
- To determine the carbon footprint or other environmental parameters for those that are suitable.
- Propose a meaningful use in the construction, e.g. to exclude the influence of moisture and pests, but ecologically.
- Match current conventional materials.
- Identify the production potential for sustainable cultivation (available land, mechanisation ...).
- Compare with the traded volumes of the corresponding conventional materials.

Relevant considerations for the challenge / theme:

Students are asked to sign an NDA before starting the project.