EuroTeQ Collider 2023

Theme: Potential for the use of green hydrogen technology to optimize the production of concrete elements.

Introduction
The company is trying to optimize its production processes. This can be achieved, among other things, by applying new innovative technologies. At the same time, we want to reduce the CO_2 production associated with the concrete production process by, among other things, the meaningful implementation of renewable energy sources.

Who is behind this initiative?
DEK is a group of companies that supply materials and services to the construction industry. Our group includes the manufacturing company BEST a.s., which is the market leader in concrete paving and concrete building elements for outdoor and garden architecture. We obtain the material in our own quarries and process it in our own plants.

What is the challenge?

We are looking for an analysis of the potential of green hydrogen production technologies for the pilot optimization of one of the concrete element production plants in order to increase its efficiency and reduce CO2 production.

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

- A survey of available technologies for the production of green hydrogen.
- Verification of the required area reserves for the installation of rooftop or floating PV resp. complete green hydrogen production technology.
- Analysis of the energy needs of the concrete element production process.
- Energy-economic analysis for different technology options.
- Analysis of the usability of possible by-products of the green hydrogen production technology.

Relevant considerations for the challenge / theme:
Students are asked to sign an NDA before starting the project.