



SUPER – Stuttgart University Program for Experiencing Research Project Information

Institute's Information

Name of Institute Institute for Energy Economics and Rational Energy Use (IER)

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Duration of Project/Number of Students

June/July X

June/July/August X

Number of Students 1

Name of Project Mass- and Energy Modelling of a Waste Incineration Facility with CCS

Beneficial Skills & Knowledge Good knowledge of Thermodynamics; Experience with modelling in Excel; Understanding of CO₂ capture technologies

Description of Work

The aim to decarbonize the German Society by 2024 requires that process related CO₂ emissions are captured and stored or used in industrial processes. Beside the steel, cement and glass industry, waste incineration facilities are a source of CO₂ emissions which can not be avoided and therefore have to be capture and stored.

Capturing CO₂ from a waste incineration facility required that the energy required for capture and compression is provided by the waste facility, reducing its capability to produce electricity and heat. Depending on the capture technology the energy integration in the facility would be different. Therefore, a spreadsheet model or a process simulation model should be developed which enables the calculation and optimization of the integration of the CO₂ capture plant. Pinch Technology should be applied to ensure that the optimal heat integration is achieved.



