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Technik & Architektur

# Bachelor Thesis Energy Systems Engineering

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Identification, Quantification and Monetization of Multiple Benefits for Energy Efficiency Measures in Industrial Processes

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# Identification, Quantification and Monetization of Multiple Benefits for Energy Efficiency Measures in Industrial Processes

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Investing in energy efficiency measures in industrial processes is nowadays usually motivated by savings in fuel costs or is enforced by agreements, laws or regulations. Through these rather low incentives fewer energy efficiency improvements are made than possible. Evaluating the Multiple Benefits that such an investment could bring, is one possibility to change this. Multiple Benefits are non-energy benefits that have great potential in uncovering hidden cash flows that would otherwise not be detected. The inclusion of such benefits in the cost calculations is therefore attracting increased attention and the Lucerne University of Applied Sciences and Arts is currently working in collaboration with the Swiss Competence Center for Energy Research on elaborating practical methodologies to simplify this process.

In this context, the thesis aims at applying said methodologies to an industry case to on the one hand give recommendations to the industry and on the other hand help the research centers improve their approaches.

Nestlé Suisse SA in Konolfingen, Bern plans on replacing their old boiler house with a more efficient one, of which different options are evaluated. Multiple benefits are analyzed, quantified and monetized to make a financial evaluation to assess the feasibility of this project.

