Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Group for Sustainability and Technology (SusTec)
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Starting Date: February 2017

Proposal for Master Thesis

"Definition and validation of a standardized CO_2 impact measure"

To mitigate climate change, decarbonization of society, that is, the reduction of greenhouse gas (GHG) emissions, such as CO_2, has become vital in the last decade, especially in industry. Therefore, the measurement and monitoring of GHG emissions at various stages of the value chain are prerequisites for a company to better understand their product and potentially communicate their efforts to a broader public. While both academia and industry identified ways to quantify GHG emissions, a holistic concept and its consistent use throughout an organization with a divergent product portfolio remains a challenging task.

Together with Bühler, a globally leading technology provider (http://www.buhlergroup.com), ETH Zurich's Group for Sustainability and Technology (SusTec, www.sustec.ethz.ch) offers a master thesis to further elaborate on this topic. In this setting, SusTec supervises this study from an academic perspective and offers methodological support, whereas Bühler provides the corporate environment as a globally leading manufacturer and service provider for processing foods and advanced materials.

The master thesis will investigate this topic by first reviewing the current knowledge and best-practices in CO_2 impact measurement. Then, the existing concept needs to be aligned and validated along selected use cases (e.g. products, services). The aim of this thesis is to test and validate Bühler's CO_2 impact measurement approach, to evaluate its value for Bühler's customers, and to provide guidance in a company-wide implementation strategy for the existing concept. The student's main tasks may comprise (preliminary):

- Developing a thorough understanding of industry standards in CO_2 impact measures, and aligning them with the existing concept.
- Validating the existing concept in selected use cases from Bühler's product and service portfolio to assess the feasibility of a global roll-out of the impact measure.
- Identifying customer benefits of using the standardized CO_2 impact measure.

We are looking for an excellent student who is highly motivated and able to work independently. Strong communication and project management skills as well as a background in industrial or mechanical engineering, or business administration is an advantage. The student will work together with both, the Bühler team in Uzwil and the SusTec team in Zurich. The majority of the time will be spent at Bühler's headquarters in Uzwil. This master thesis will take place in the context of the D-MTEC's Corporate Master Thesis Program.

Are you interested? Please send your CV, a short letter of motivation (max. one page) and transcripts of previously obtained degrees (with grades) to David Grosspietsch (dgrosspietsch@ethz.ch). Applications from non-ETH students are welcome.

We look forward to receiving your application!

Zurich, November 2016