

Life Cycle Workshop 2019 focuses on transparency in the entire supply and value chain

How can we close loops to get closer to the ideal of a Circular Economy? How can sustainability be measured along the entire product life cycle? Concrete case studies and impulses for continuously increasing product and process transparency were the focus of the second Life Cycle Workshop organized by ifu Hamburg. With the aim of reducing environmental impacts, the participants received detailed insights into current projects in the automotive and aviation industries, telecommunications and logistics based on practical reports and analyses.

Reutlingen, 26 June 2019 - How can sustainability information be used more effectively in the company? Martina Prox, expert in sustainability strategy, opened the conference with dedicated insights into the complex interlocking communication channels of a wide variety of sustainability information. These pieces of information are of interest to many departments within the company, e.g. for product design or purchasing. Unfortunately, they are often not exchanged, or the data is not prepared in such a way that other departments can draw the right conclusions from it. Using an example company, Prox decoded who needs which information and when, what information is already available in a standardized form and where there is potential for improvement in the use of existing sustainability data. Only when we manage to harmonize, standardize and process these data comprehensively will each individual department be able to make sustainable decisions and contribute their part to a sustainable value chain.

Green lies - can LCAs clear up prejudices?

Which of these two is more environmentally friendly: disposable or cloth diapers? Based on the Life Cycle Assessment of four different product pairs, Marten Stock of ifu Hamburg gave a well-founded introduction to the Life Cycle Assessment (LCA) methodology. He pointed out that our intuitive feeling does not always provide the right answers. By considering the entire life cycle of a product, not only the use of raw materials is taken into account, but also - among others - the actual usable quantity of an end product as well as the energy required for production or recycling. The fact that resource efficiency in the production process is also an important factor is underlined by the following example: A sports shirt made of newly produced PET (polyester) can be more environmentally friendly than a shirt made of recycled material if the energy efficiency of the former is higher during production.

Sustainability and mobility - on land and in the air

How climate-friendly are electric cars in Germany? Dr.-Ing Kirsten Biemann from ifeu - Institut für Energie- und Umweltforschung Heidelberg answered this question. In addition to the electricity (mix), the main focus here is on the battery: Which battery size is required to get from A to B with the lowest possible climate impact? In current vehicles, there is a break-even between electric cars and conventional combustion engines at around 60,000 to 80,000 km. Assuming that the production of battery cells will continue to develop dynamically and that fewer raw materials and energy will be required as performance increases, the break-even point will be reached after 30,000 km for a 35 kWh battery and after about 50,000 km for a 60 kWh battery.

After this analytical overview, Elena Wege from Robert Bosch GmbH explained how her company develops Circular Economy strategies through Life Cycle Assessments (LCA) and Life Cycle Costing.

And Vincent Ackenhausen of Altran Germany reported on ecological aspects in aerospace and gave first insights into the current Airbus LCA project.

Global transfer of goods - consistently ecologically implemented

How can the supply chains of automotive suppliers for intercontinental transports be designed in such a way that they have less impact on the environment? Timo Galitz of logistics specialist CHEP presented the results of a comprehensive case study which was created in cooperation with Ford. Using a cradle-to-grave approach, the environmental impacts of traditional one-way packaging (pallet and corrugated board) and a reusable packaging (returnable container) for automotive parts were compared. The result is impressive: in addition to significant savings in waste, wood, water and energy consumption, the results for the reusable transport container show 5 - 17% less CO₂ emissions.

What role does the life cycle perspective play in a Circular Economy?

Martina Prox opened the panel discussion of the Life Cycle Workshop with this progressive question. Andreas Kröhling from Deutsche Telekom, Jessica Andreasson from Volvo Cars and Dr. Katrin Ostertag from Fraunhofer ISI vividly discussed what they consider to be the greatest challenges when implementing a Circular Economy: Life Cycle Assessments deliver so many and such complex results that it is often difficult to work out and communicate the core statements of the studies. How do you weight the different environmental impacts? How do you compare the effects of carbon in the air with its effects on water or biodiversity? It is a fact that more data can be accessed worldwide than ever before and that these information assets are far from exhausted. One reason for this is that Life Cycle Assessments are complex and tie up many human resources. On the other hand, there is a lack of political incentives that could, for example, subsidize the purchase of products that prove that they are produced sustainably.

Set course - making access to lifecycle information easier through digitization

The Life Cycle Workshop 2019 ended with an outlook from Jan Hedemann, Managing Director of ifu Hamburg. Hedemann once again emphasized the large amount of data that we can access today thanks to Industry 4.0 in order to use resources more efficiently and systematically return raw materials to the economic cycle. However, the contributions of the event had also highlighted the high manual effort involved in creating Life Cycle Assessments. He says: "Climate change and the scarcity of resources make it clear that companies must act globally and as quickly as possible to preserve our environment as worth living in. However, this will only work if we have software tools that can incorporate continuously changing parameters and daily updated data quickly and easily. We will soon be able to support users with a newly developed software solution that enables the automated generation of LCAs and massively reduces the effort involved in data research. We are looking forward to presenting the first Life Cycle Assessments at the next Life Cycle Workshop 2021, which - compared to today - were prepared in no time at all."

The presentations and video recordings, which are approved for publication can be viewed under the following link: <https://www.ifu.com/en/events/life-cycle-workshop/>