Stakeholder Perspectives Along the Entire Value Chain

Interview with Alena Jahns and Jan Hildebrand (IZES gGmbH)

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What methods does IZES use to examine consumer and market perceptions of CO_2-derived consumer products, and how might these perceptions influence broader adoption in the industry?

Using CO_2 from waste and wastewater facilities and converting it into chemicals for consumer products, involves many different stakeholders along the value chain. One important stakeholder group are the consumers. Their consumption behavior and view on products may influence how producers and distributers approach sustainability goals – e.g. in the case of cleaning products.

Knowledge on the consumers' needs and preferences with regard specific CO_2-derived products can enable stakeholders, like producers and distributers, to develop successful strategies for the adoption of these products. They can incorporate these needs and preferences for instance in the choice of products and in the communication about consumer products.

Thus, one of the topics that IZES is researching in the WaterProof project is the consumers' perception of CO_2-derived consumer products, such as cleaning products. This research is carried out by using guideline interviews as well as standardized questionnaires (in different countries). It can provide an indication which

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factors may influence the perception and acceptance of CO_2-derived consumer products, such as prize, perceived ecological benefits, but also degree of knowledge and corresponding need for more information. The research can help us in deeper understanding how these factors influence the consumers' view on the products and which criteria are relevant for consumers' decisions.

Can you share how IZES is engaging local stakeholders, such as industry stakeholders and local authorities and what role these stakeholders play in ensuring successful market entry?

In the WaterProof project IZES is researching the perspectives of local stakeholders on the WaterProof approach in order to foster the approach of an Industrial Urban Symbiosis (IUS). The idea is to create synergies and to use the potentials of a circular economy networks. Relevant stakeholders include for instance, institutions from the waste and water sector, local authorities etc. Stakeholder interviews help us to understand the context in which the WaterProof technology is piloted. This way we can identify current goals, trends, events and challenges in the local stakeholder network that may shape the perception of technologies, like the WaterProof technology.

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Making processes more circular often means connecting different stakeholders from different disciplines. Understanding their needs can help in improving technologies and implementing them in a way that benefits the local stakeholder network. Finding ways in which the conversion and the use of captured CO_2 from waste(water) treatment facilities benefits the stakeholder network and fosters cooperation and synergies is relevant for successful market entry and might inspire new projects contributing to circularity.

Which challenges have you identified regarding the acceptance of CO_2-based consumer goods?

We know from various studies in the field of sustainable consumption that different factors influence personal consumption behavior, i.e. the decision to buy and use a product. In addition to personal factors such as ecological orientation or socio-economic status, these naturally also include product characteristics. CO_2-based consumer products, specifically the use and conversion of CO_2 from waste and wastewater facilities is a rather novel subject for consumers. At the same time there are many other product aspects that consumers receive information on, for instance on the packaging or in advertisement.

In our survey and interviews we are exploring how factors, such as knowledge and experience relate to the perception of these products. We also aim to investigate which product aspects and information consumers are particularly interested in, e.g. the emission reduction, the circular economy aspect, recyclability, etc.. Knowledge on the priorities of consumers in this context can be useful in the communication about CO_2-based consumer products.

Looking ahead, how do you see IZES's work impacting the future of sustainable product development, particularly in integrating CO_2-derived materials into mainstream consumer goods??

The special thing about the WaterProof approach is that we look at the acceptance and at subjects influencing acceptance along the entire value chain, i.e. from production in cycles and the stakeholder perspective there to the product and the consumer's perspective. Research on the perception of the WaterProof technology by various relevant local actors can serve as a basis to foster exchange about the recovery, conversion and use of resources, such as CO_2. The research and exchange between stakeholders can help to identify and to alleviate possible barriers for the use of CO_2-derived materials. Furthermore, it could create opportunities to establish networks or additional connections within a stakeholder network, to improve communication, to find new synergies and to improve the circularity of products. The research can create awareness on the goals, needs and challenges of various actors with regard to Industrial Urban Symbiosis and provide a better understanding of socio-technical approaches.

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