

Individual, reliable, mission-focused

Sovereign value cycles for education and training

A task for society as a whole

Germany is faced with a huge transformation process to transition its economy and society to a circular system and reach a sustainable state by 2050. In its Sustainable Development Goal (SDG) 12, the United Nations addresses responsible consumption and production. At the European level, the Green Deal and the Circular Economy Action Plan, which was updated in 2020, have set out additional key guiding principles over the coming decades. These are not about developing individual regions, but about the principles of how economic activity is carried out and the associated measures of value in a market of 500 million people.

Training and education in universities are making crucial contributions to this transformation process. Specialist scientific content on designing value creation systems to be circular is enabling managers to shape the transition in science, industry and society. Training and education at university level are producing multipliers of the transition.

Your path to the circular economy



1. Working together to shape the transformation of the chemical industry as a lead market
2. Establishing industry-wide, supra-regional networking
3. Mission-oriented, agile cooperation in a reliable data space
4. Tailored proposals for solutions

CIRCONOMY® – mission-oriented, industry-wide and supra-regional networking initiatives for transforming businesses and institutions

Existing networking initiatives mostly have a regional or technological focus. What is missing in practice is the mission orientation set out by the Commission of Experts for Research and Innovation (EFI) as a requirement in its 2021 report. Through the CIRCONOMY® brand, Fraunhofer is addressing this requirement and pooling R&D capacities and expertise in multi-disciplinary, multi-sector and mission-led networks, the CIRCONOMY® Hubs, which are not geographically limited in scope.

Individual, highly agile groups provide integral support to institutions and businesses in urgent areas such as designing circular material flows. This drives crucial innovation policy objectives for Germany and Europe.

Sovereignty as a prerequisite for resilient businesses and institutions

We need to rethink value chains: Traceability, sustainability and resilience are essential for reducing the strain on natural resources. Businesses have often delegated sovereignty over processes and products to global production systems. Not least during the Covid-19 pandemic, supply chain bottlenecks have exposed the vulnerability of the European economy to global trade routes. As well as the associated supply risks, globalized supply chains often lack transparency about whether the environmental and health and safety standards are being met. Digitalization offers significant potential to shape supply chain management sustainably and thus is integrated into CIRCONOMY® as a central optimization tool.



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From the value chain to the value cycle – a holistic approach

The transformation of value chains into value cycles is a central instrument for conserving natural resources and reducing greenhouse gas emissions.

The transition to a circular economy requires systemic innovations as well as a value system that takes into account not just the monetary aspects, but also the added ecological and social value of value cycles. The CIRCONOMY® Hubs address the multi-layered challenges of the future: They bring together a wide variety of research areas and stakeholders to put robust solutions on the path to industrial use. The specialist challenges that need to be addressed in training and education include issues of product development using circular criteria.

Fraunhofer as a key partner

The cooperative structures of the CIRCONOMY® Hubs enable fast and creative decision-making, agile collaboration outside-the-box and the digital availability of the latest results. Due to internal networking, our experts at the respective institutes are in a position to deal with a wide range of concerns in education and training, from industry-specific detailed questions to cross-technology production systems.

Our expertise in developing similar proposals enables us to create customized innovations for sovereign value cycles and to shape them sustainably:

1. Individual needs assessment
2. Digitalization and data management
3. Certification courses and training

We tackle the fundamental issues in the form of R&D research projects and industry collaborations.

Contact

Dr.-Ing. Hartmut Pflaum
Fraunhofer Institute for
Environmental, Safety and
Energy Technology UMSICHT

circonomy@fraunhofer.de
www.circonomy.fraunhofer.de/en.html