

Circular Bioeconomy

IECO Days 2021
Breakout Session T2

IECO Topic II (Biomass)

IECO topics:



Sustainable Usage of Water and Energy in an Urban Context



Sustainable Material and Energy Transformation of Biomass



Eco-Industrial Utilization of Resources from the Subsurface



Urban Eco-Industrial Development in South-America



- Name and focus on Topic II (biomass) based on previous projects and sustained cooperation with Chilean and other international partners in the area of biomass and bioenergy

Topic II: Sustainable Material and Energy Transformation of Biomass

- Topic speakers Alex Berg (UdeC, Chile) and Frank Schultmann (KIT-IIP, Germany)
- Different aspects of biomass utilization and transformation.
- Transition to a bio-economy through the reorganization of productive and logistic systems in the agroindustry
- Generation of biofuels from the waste of the forest industrial process as a mean to increase economic and environmental efficiency
- Today: Broader perspective beyond bioeconomy, including circular economy and innovative energy carriers (bioenergy, plastics recycling, hydrogen, synthetic fuels)**

Breakout Session T2

- Objectives of this breakout session
 - Introduction of research activities at IIP/KIT and UDT
 - Discussion of the presented topics
 - Identification of joint research interests

- Ways to cooperate
 - Joint projects and project proposals
 - Publications
 - Exchange of researchers or students

Agenda

Short introduction of the institutes



Session topics:

I Biomass and Bioenergy

II Recycling of Plastic Waste

III Green Hydrogen and PtX



The Institute for Industrial Production (IIP)



The Institute for Industrial Production (IIP)



Chair of Business Administration, Production and Operations Management

(Prof. Dr. Frank Schultmann)

- Techno-economic analyses of industrial value chains

Chair of Energy Economics

(Prof. Dr. Wolf Fichtner)

- Techno-economic analyses along the whole energetic value chain

French-German Institute for Environmental Research (DFIU)

(Dr.-Ing. Simon Glöser-Chahoud)

- Development of joint solutions for French-German research problems in the environmental areas of air, water, land, waste and energy



Institute for Industrial Production



French-German Institute for
Environmental Research
*Institut Franco-Allemand
de Recherche sur l'Environnement*

Chair of Business Administration, Production and Operations Management



Prof. Dr. Frank Schultmann

Research Groups



Project and Resource Management in the Built Environment
(Dr.-Ing. Rebekka Volk)



Risk Management
(Dr. Marcus Wiens)



Sustainable Value Chains
(Dr.-Ing. Simon Glöser-Chahoud)

Research Focus „Circular Economy“

Circular economy in a broader sense:

- 1) Material / energetic use of renewable resources
- 2) Closed-loop supply chains of essential raw materials (metals, plastics, composites, ...)

Related topics:

- Environmental management (e.g. emission reduction measures)
- Resource efficiency
- Corporate Social Responsibility (CSR)
- Digitalization and Industry 4.0 in connection with assessing the sustainability of industrial operations

Bioeconomy

Use of renewable resources for production of platform chemicals and fuels

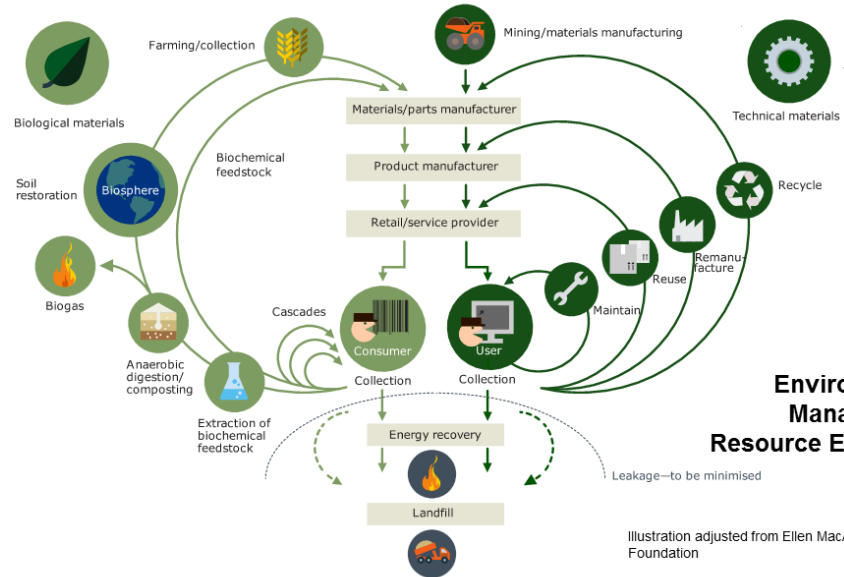
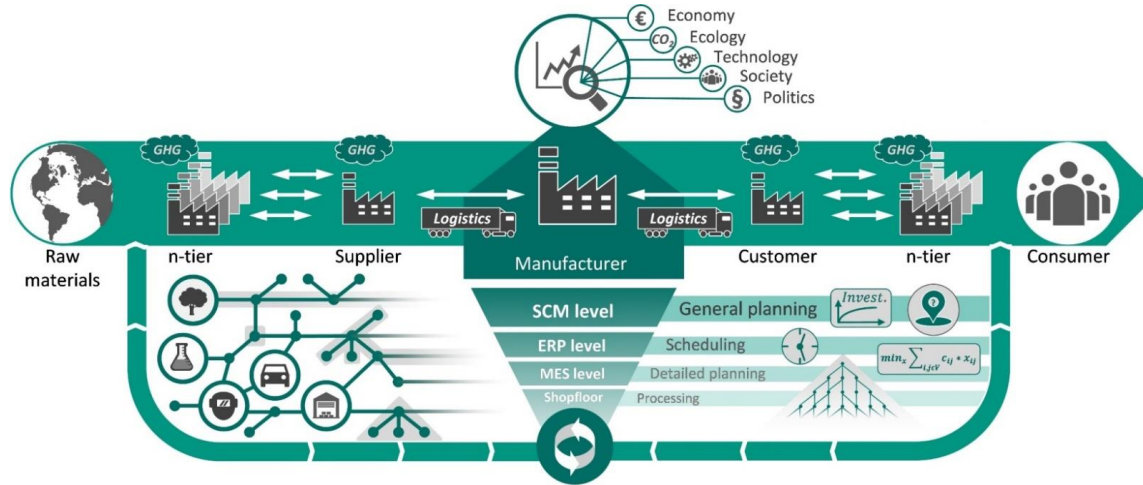


Illustration adjusted from Ellen MacArthur Foundation

Circular Economy
Closed-loop supply chains, reverse logistics

Environmental Management, Resource Efficiency

Research Group “Sustainable Value Chains”



Research Topics

- Material and energy flow orientated planning and control of industrial operations
- Analysis and assessment of process chains and networks under economic and ecological sustainability aspects as well as political frameworks
- Quantitative planning and optimization approaches using methods from business administration, operations research, engineering, natural and environmental sciences
- Applications: metals production, bio-economy, resource efficiency in industry

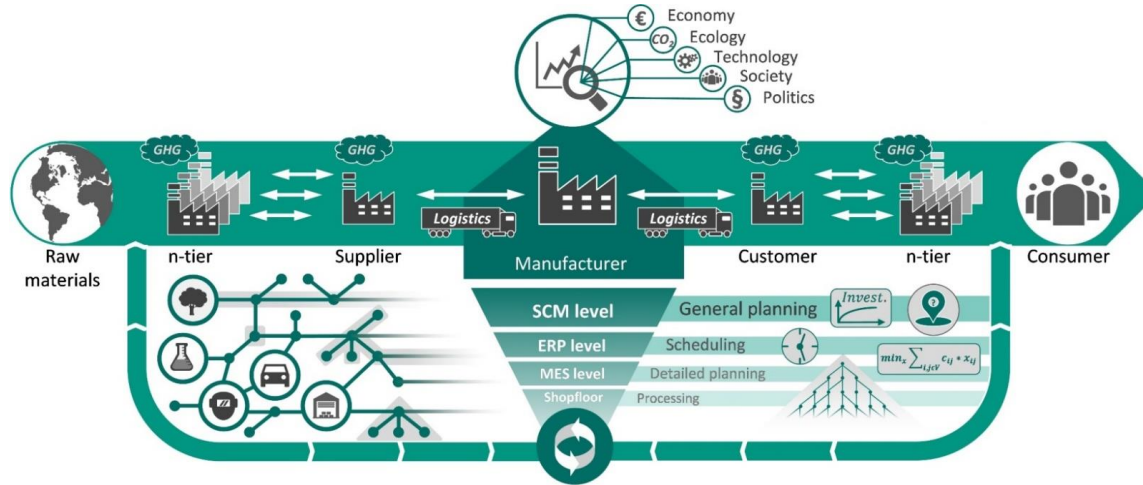
Research Partners



External Funding



Research Group “Sustainable Value Chains”



Current Exemplary Projects

- reFuels: Synthetic Fuels → Evaluation of processing routes for the production of eFuels
- CoBiVal: Cooperation in Bioeconomy Value Chains → value chain modelling
- Bioeconomy Baden-Württemberg: Regional assessment of bioeconomy potentials
- TFTEI: Techno-economic support of the UN Economic Commission for Europe
- ThinkTank Industrial Resource Strategies: Evaluation of Closed-Loop Supply Chains
- DeMoBat: Industrial Disassembly of Electric Vehicle Traction Batteries → TEA

Research Partners



External Funding



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Short introduction of the institutes



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Introduction UDT

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in f t i y e

udt Ciencia, Tecnología e Innovación en Bioeconomía

Universidad de Concepción

🏠 NOSOTROS ▾ ¿QUÉ HACEMOS? ▾ NOTICIAS CONTACTO REPORTE DE INDICADORES COVID-19 🇪🇸 ▾ 🔍

Somos un centro de investigación, desarrollo e innovación de excelencia en bioeconomía que impulsa el uso sustentable de los recursos y propicia una economía circular.



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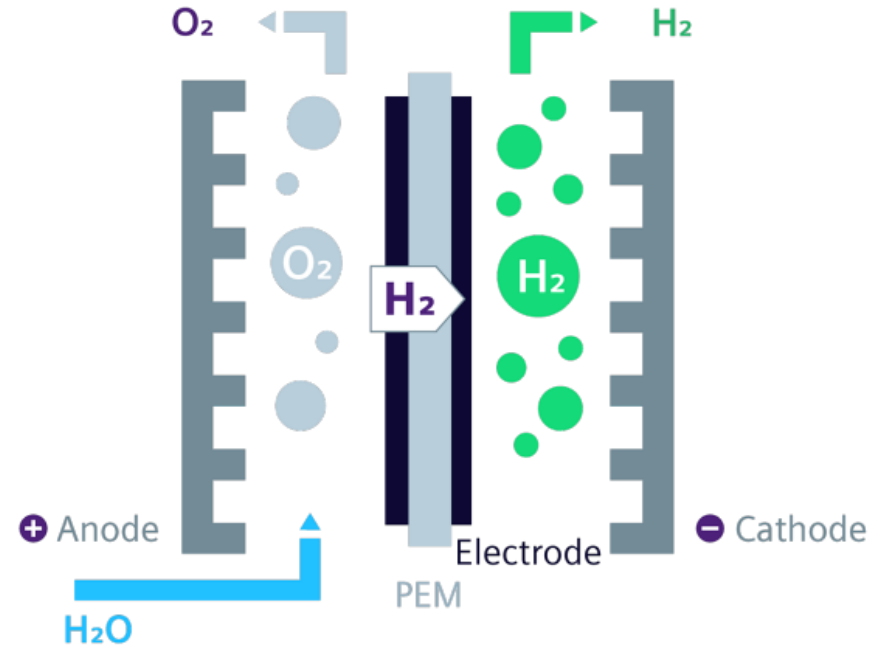
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Research topics and activities of the IIP with Chilean partners

IECO Days
Breakout Session T2

Contact

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