



**Fraunhofer**  
UMSICHT

FRAUNHOFER INSTITUTE FOR ENVIRONMENTAL,  
SAFETY, AND ENERGY TECHNOLOGY UMSICHT

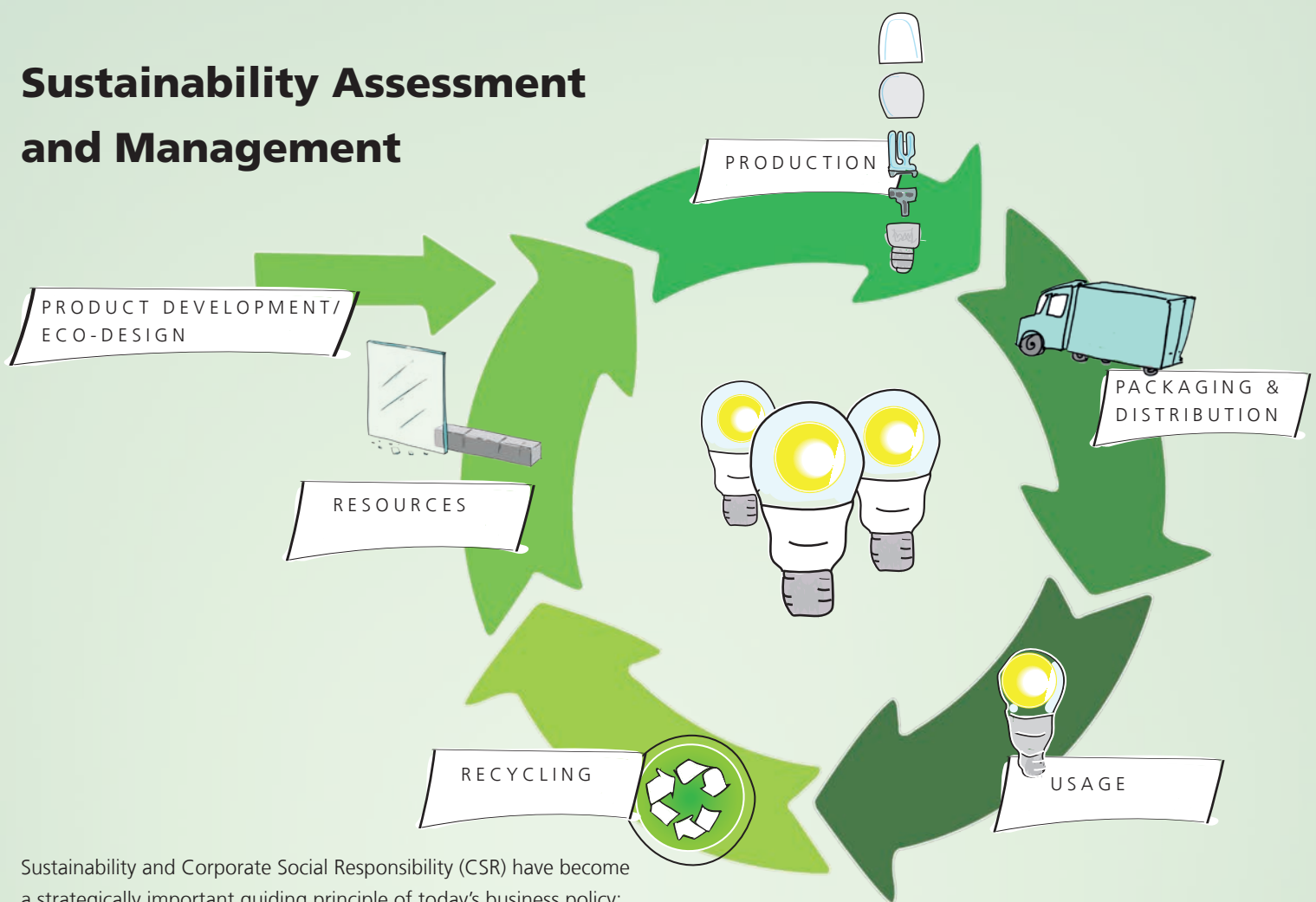
RESOURCES AND INNOVATION MANAGEMENT

**SUSTAINABILITY ASSESSMENT  
AND MANAGEMENT**

ECONOMIC – ENVIRONMENTAL – SOCIAL



# Sustainability Assessment and Management



Sustainability and Corporate Social Responsibility (CSR) have become a strategically important guiding principle of today's business policy: Companies have to take responsibility for environment and society in order to be successful in the long run. They have to document and communicate their engagement transparently.

The group "Sustainability Assessment and Management" of the Fraunhofer Institute UMSICHT prepares strategic decision support and planning tools for sustainable action for companies and institutes – with regard to economic, environmental and social aspects.

We support companies with the preparation of CSR and sustainability reports and give advice in strategic questions for the optimization of production processes.

We reveal strengths and weaknesses of the process chain, we identify possibilities for improvement and help to reduce greenhouse gas emissions.

We analyze the structure of the energy consumption and the energy supply and help our customers to use the potentials of available renewable energies for electricity, heat and fuels.

Concepts of climate protection, studies of potentials and spatial environmental and economic balances (e. g. nutrient balances) with geoinformation systems complete our portfolio.

# OUR SERVICES

## SUSTAINABILITY ASSESSMENT

### **Life Cycle Assessment of Goods and Services in accordance with DIN EN ISO 14040/14044**

With the preparation of an ecological balance we analyze the whole life cycle of a product or of a service and their potential environmental impact – from production to disposal – in accordance with the Life Cycle Assessment standards.

### **Carbon Footprint for Products and Organizations**

A Carbon Footprint constitutes the total emissions of carbon dioxide (CO<sub>2</sub>) and other relevant greenhouse gases (GHG), which arise along the whole life cycle of a product or of a service. We support you with the calculation and the communication of the specific GHG-emissions for your company and your products.

### **Integrative Sustainability Assessment**

We analyze the activities and performance of your organization with regard to sustainable development. The most important areas of sustainable development are captured: economic, environmental and social issues.

### **Sustainability Reports**

We help you with the preparation of sustainability reports pursuant the requirements of the Global Reporting Initiative (GRI) and support your company with the communication of the results towards customers, internal management departments, employees, suppliers, industrial associations and media.

### **Accompanying Research for Support Programs and Projects**

We accompany technically orientated projects integrating environmental, economic and social objectives into the product and process development. We start at the beginning of the project and discuss the solutions with the development team.

## POTENTIAL STUDIES AND ECONOMIC ANALYSES

### **Detecting Biomass Potentials and Energy Sinks with Geographic Information Systems (GIS)**

The existence and the potentials of biomass as renewable energy sources are characterized by different geographical questions. We develop GIS applications for all spatial aspects of planning - from bioenergy installations, biomass potential studies, biomass logistics up to a complete resource management.

### **Energy Potential Analyses**

Capacity analyses deliver the necessary background in order to check and to decide on the most promising technical measures for energy savings for municipalities or single properties. The same analyses help to decide on the most appropriate facilities to be used for the utilization of renewable energies. We offer situational analyses plus scenario calculations and give strategic recommendations for the exploitation of potentials.

### **Concepts for Climate Protection**

We develop concepts for climate protection and show the technical and economical CO<sub>2</sub>-reduction potentials. We also detect possible and sensible measures to economize CO<sub>2</sub>-emissions on the short and long term and also to reduce energy consumptions.

### **Cost-Benefit Analysis**

We conduct cost-benefit analyses in order to identify the optimal solutions of investment actions for companies.



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## BRANCHES AND CUSTOMERS

- Waste and recycling management
- Industry: process industry, manufacturing industry
- (Bio-)Plastics industry
- Producers and users of biomass
- Biogas industry
- Energy economy
- Electricity suppliers and municipal utilities
- Water and wastewater management
- Service industry
- Authorities, ministries and municipalities
- Banks, investors, insurances

## BENEFITS AND ADVANTAGES

- Fraunhofer UMSICHT is an independent research institute and therefore a strong and reliable partner
- One single contact and clear communication channels:  
One-stop-shop: Know-how of the Fraunhofer institute in the areas of sustainability assessment, optimization of processes and sustainable technology development using own test plants
- Strategic decision-making basis and planning help for climate protection measures
- Improvement of competitiveness through optimized processes and reduction of greenhouse gas emissions
- Better economic performance by cost reduction and increased revenues

## REFERENCES

- Sustainability in the circular economy: greenhouse gas balances, raw material balances and resource conservation
- Carbon Footprints and Life Cycle Assessments for products and services for different customers (e. g. from industry)
- Energy potential analyses and climate protection concepts with recommendations for action and sustainable integration of bioenergy-systems (including district of Bamberg, Schermbeck, Olfen)
- Planning tools for the usage of biomass (biogas atlas)
- Energy efficiency in the dairy industry  
(EU-project SUSMILK, [www.susmilk.com/index.php](http://www.susmilk.com/index.php) )
- Biorefinery: Energy efficient second generation bioethanol  
(EU-Brazilian project ProEthanol2G)
- Integrated production of biofuels, energy products and chemicals in a multi-feedstock-procedure  
(sustainability evaluation, joint German-Indonesian project)
- Biofuels for the aviation industry: quality management and sustainability assessment  
(aviation research program eco-efficient flying)
- Biofuels composed of algae  
(sustainability evaluation in the EU-project All-Gas)



## FRAUNHOFER UMSICHT

UMSICHT is a pioneer for sustainable energy and resource economy by supplying and transferring scientific results into companies, society and politics. The dedicated team researches and develops, together with partners, sustainable products, processes and services, which inspire and convince.

Please follow the link [s.fhg.de/BcN](https://s.fhg.de/BcN) or the QR-Code for more information on the department »Resources and Innovation Management«.



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