

The project CARE is aiming to develop an economical and environmental information system and to apply the results to the involved small and medium-sized enterprises. The core task of this information system is to collect and interpret data, both on material and energy flows as well as the corresponding costs within an enterprise. The following step is to gain enterprise-specific data through a supply chain analysis. This approach will also take into consideration the ecological impacts of preliminary production and transportation processes.

The project's purpose is to supplement already existing instruments of 'Environmental cost accounting' with data on material and energy flows as well as environmental impact data on the life cycle of products. Thus the Wuppertal Institute has developed a 'Resource Efficiency Accounting System' that considers internal and external data on environmental issues as well as cost accounting data. This combination of economic and environmental information provides a basis for a company's decision-making process, e.g. for the environmental/controlling department. As a result, the entire optimisation of products and production processes will be supported.

Therefore the data required for an evaluation of production processes and products will be gathered from different sources. Information about cost accounting, material flows and material properties, can be generated by the main system and the transaction of data; based on the company's ERP system. Finally the results will be analysed by Environmental Management Information Systems (EMIS) and then will be combined with data on Material Intensity (MI) from the Wuppertal Institute; thus assessing the ecological impact of the life cycle of products.

The methodological approach and scientific emphasis of the Institute for Technology Management (IAT) is provided by the combination and exchange of data from different sources and their analysis in EMIS. Therefore the IT structure and IT systems of the participating companies will play an important role in obtaining various forms of data.

The following steps support the objectives of the CARE project:

- The creation of a guideline and a calendar about 'Efficient Management', which can be used for introducing resource efficiency in a company and supporting further steps.
- The analysis of the scientific background: Description of the status quo of environmental cost accounting and the potential of EMIS for resource efficiency accounting.

Scientific partners:

- Wuppertal Institute for Climate, Environment, Energy
www.wupperinst.org
- Institute for Technology Management
University of Stuttgart
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- Synergitec
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Partner for practical application:

- Muckenhaupt und Nusselt
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www.munu-kabel.de
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- The development of concepts based on certain requirements, which implement resource efficiency accounting in companies.
- The development of concepts for the implementation of IT systems that combine ERP systems and EMIS for resource efficiency accounting.
- The development of qualification schemes for participating companies to use in their environmental and economic information systems.
- To support the release of a profitability report, which will sum up the achieved results. This information will also be a useful tool for other industrial sectors.

The benefits of the project for the various target groups are:

- **Enterprises:** Enterprises will obtain a concise assessment of their products, production processes as well as previous procedures. This information can be used for an environmental performance evaluation. These measures can lead to an improvement of a company's performance and will stimulate innovation processes on the product and production level.
- **Software companies:** The development of integrated economical and environmental assessment methods, which evaluate the life cycle of products and the combination of varied data. Further more it explores the analysis of EMIS possibilities for new benefits of EMIS and ERP systems.
- **Customers/Consumers:** Obtaining environmental and economical information for the life cycle of products influences decision-making for customers and consumers. This information also allows for environmental performance evaluation (EPE), and benchmarking of product/company assessment.
- **Environmental Policy:** Increased eco-efficiency in the economy and options for the creation of new environmental and economic market segments, which can raise the awareness of environmental policy.

Publisher: Wuppertal Institute for Climate, Environment, Energy

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