

# CLEANER PRODUCTION





# ENHANCE EFFICIENCY, REDUCE COSTS AND SAVE THE ENVIRONMENT

The use of raw materials, auxiliary agents and energy as well as waste and sewage management are considerable cost factors for producing companies today. In most companies, saving potentials in the range of the return of sales are realizable by optimized resource efficiency. These potentials can be tapped by using appropriate optimization tools and new technologies. This will lead to reduced costs, increased efficiency and a better environmental protection. The consequent environmental protection is not least a marketing instrument. At the same time, innovative solutions in production strengthen the own market position.

## Cleaner Production

Cleaner production is an interdisciplinary task and requires teamwork of various experts. Depending on the task and branch, Fraunhofer IML analyses and assesses different fields of technologies and business areas - from a single production line to the whole company. Thereby, all relevant material flows as well as the technologies applied are focused.

## Support

Cleaner production measures are sensible for any producing company - regardless of its size. The capacities for a cleaner production project (fund, personnel and knowhow) are, however, often not available within small and medium sized enterprises (SME), although, enhancements can be considerable here. The Fraunhofer IML offers external expertise in close cooperation with other partners (e.g. the Effizienz-Agentur NRW), thus, allowing SME's the implementation of cleaner production measures.

## Procedure

The procedure for cleaner production optimization of Fraunhofer IML follows the specification of VDI-guideline 4075. In close cooperation with the client, practice oriented measures for internal implementation are elaborated in three project phases:

**Macroanalysis:** The project starts with an as-is assessment of the operation procedure: data about your company, the production, products and frame conditions are determined.

**Microanalysis:** The project team visualizes process sequences, determines production specific key figures and, thus, creates a general transparency. This is the base for the subsequent identification of potentials for improvement.

**Action plan:** The optimization potentials identified are transferred to concrete cleaner production measures. The main focus is laid on the development of consistent economic as well as ecological solutions, which offer a significant improvement compared to the original state.



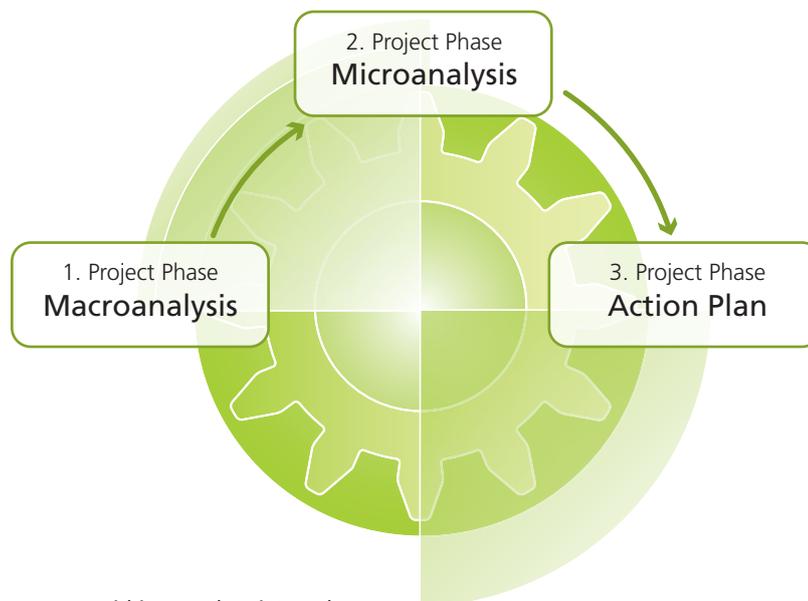
Fraunhofer IML pursues a sustainable approach in all its projects. Your employees are integrated in all project phases. Optional, Fraunhofer IML offers support in the implementation and realization of the developed measures.

### Your benefit

Cleaner production projects cover all relevant material flows and state-of-the-art of your production. The analyses of Fraunhofer IML outline, in which way(s) the resource efficiency of the production can be enhanced.

Thereby, the following objectives are focused:

- Reduction of product costs by optimizing the use of resources
- Enhancement of production sequences by means of optimized processes
- Higher production reliability and quality by means of optimized processes and techniques
- Less waste management costs by reducing waste and sewage
- »Green production« for marketing



*Cleaner production is a measure within a modern internal material flow management. During the three main project phases of »Cleaner Production« enterprises achieve decisive reduction of costs and live environmental protection at the same time.*

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