



RELY ON OUR EXPERTS' EXPERIENCE

In cooperation with numerous research and business partners, the Fraunhofer IFF develops and implements new technologies in industry, thus creating solutions for energy-driven manufacturing. It is also doing this in the Fraunhofer ER-WIN® Innovation Cluster for Smart, Energy Efficient Regional Value Chains in Industry, which aims to strengthen the competitiveness of high-energy industry, especially in Saxony-Anhalt. The Fraunhofer ER-WIN® Innovation Cluster is an initiative of the Fraunhofer IFF in Magdeburg.



»We not only cut costs but also have an eye on sustainable effectiveness and thus future viability.«

*Dr. Jörg von Garrel,
ER-WIN® Office*



»We start where classic energy consulting stops – in your manufacturing. Heat, power and waste: We analyze the forms of energy holistically.«

*Carsten Keichel,
ER-WIN® Office*

FRAUNHOFER INSTITUTE FOR FACTORY OPERATION AND AUTOMATION IFF

Director
Prof. Michael Schenk

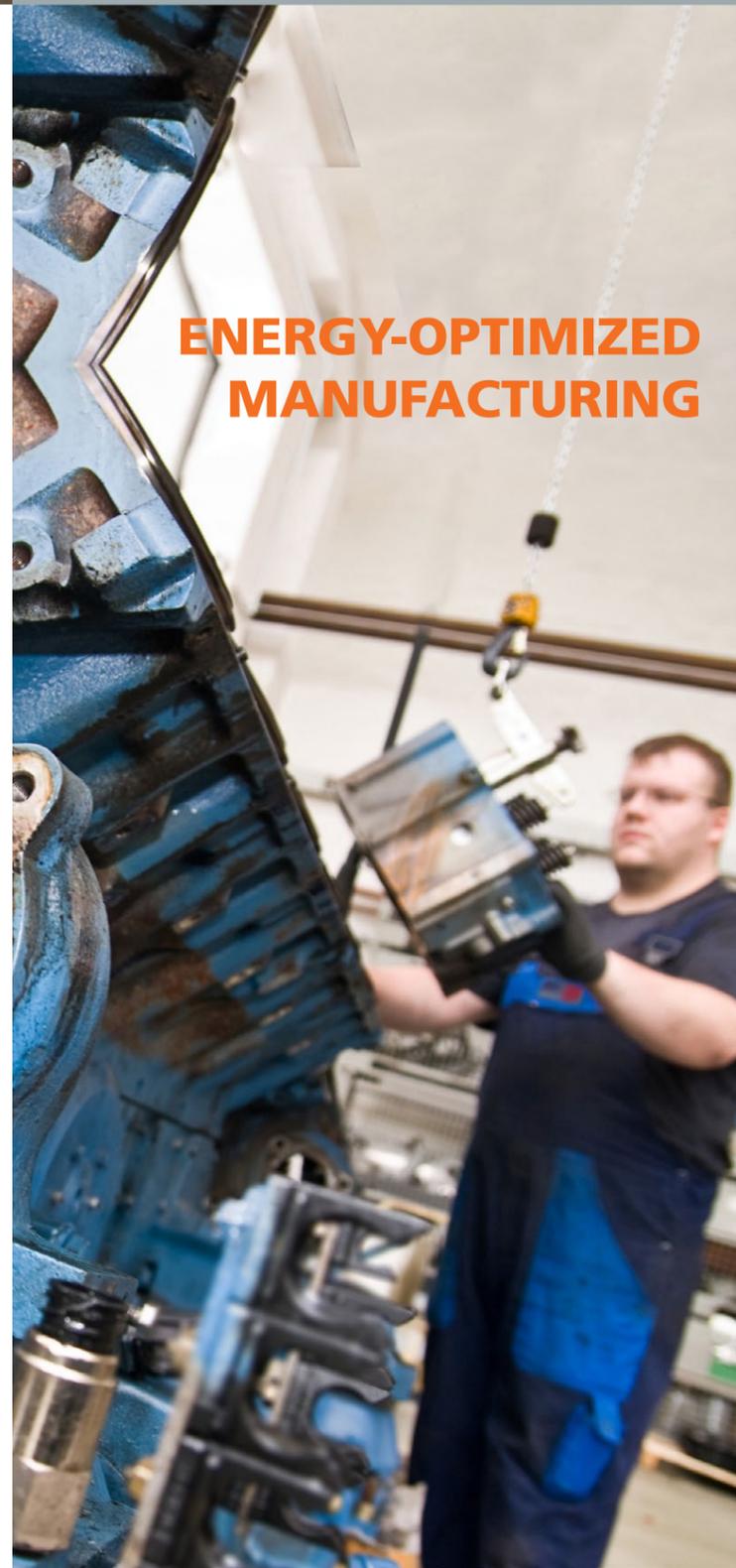
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ENERGY IS A COMPETITIVE FACTOR

Energy and raw materials are some of the major price drivers in industry. Effective and efficient use of energy and resources is thus the key to competitiveness for manufacturers.

For the most part, classic energy consulting stresses equipment and facilities. Significant potential for savings lie in manufacturing itself. According to studies by the Fraunhofer-Gesellschaft, there is potential to reduce energy consumption in industrial manufacturing by 25 to 30 percent [1].

Solutions for Energy-Driven Added Value

As a technology partner for manufacturers, we pursue a holistic approach: We analyze companies, from their processes, manufacturing technologies and products up through their energy infrastructures. Building upon that, we develop and implement solutions for energy-optimized manufacturing throughout the entire life cycle. Our aim is to leverage synergies both at users' facilities and between different companies.

Our solutions enable you to use energy more effectively and efficiently and thus to manufacture greenly.



I. IDENTIFYING POTENTIALS

We get things started. Together with you, we identify starting points for effective and efficient energy use in your company:

- Quick checks: We identify and analyze initial potentials for savings quickly and inexpensively.
- Workshops: We jointly develop energy road maps.
- Management Games: We raise your employees' awareness of energy efficiency.

II. ENERGY EFFICIENT MANUFACTURING

We take concrete action, from detailed analyses to cost-benefit analyses up through implementation. Our experts:

- analyze the energy consumed by operations, corporate units and products and calculate potentials for energy savings,
- develop and implement energy efficient organizational and manufacturing operations, and
- engineer and implement systems solutions, systems and technologies, from material recovery to distributed energy conversion up through waste heat recovery.

III. LEVERAGING SYNERGIES

We think ahead – and develop solutions for interconnected manufacturing operations and systems as well as their infrastructures:

- Methods, models and systems for energy-optimized production planning and control
- Smart energy management systems that monitor and control plant operation as a function of electrical grids
- Smart storage system concepts and control centers that combine distributed systems into virtual power plants

The smart supply, storage and distribution of energy enables you to be more flexible and thus utilize your manufacturing systems optimally. At the same time, it enables you to leverage additional potentials for saving energy in networks with others.

Fraunhofer IFF References: Improving Energy Efficiency

 Companies in the optoelectronics industry	 Companies in the plastics industry	 Companies in primary metals and metalworking	 Companies in the metal coating industry
Planning of an energy efficient factory	Energy optimization of manufacturing operations	Energy optimization of organizational operations	Plant solutions for heat recovery from manufacturing waste
Peak load reduction ↓ 20 %	Energy consumption ↓ 67 %	Power consumption ↓ 5 %	Waste disposal costs ↓ 100 %
Heating costs ↓ 27 %	Energy costs ↓ 87 %	Heat consumption ↓ 12 %	Energy supply costs ↓ 25 %
Cycle time ↓ 50 %	Cycle time ↓ 30 %		