

# GO FOR GREEN TECH

Technologies for Climate Protection

An initiative of the



# Achieving Climate Targets

## with the Mechanical Engineering Industry

We have one world. We have one climate, common and global. Climate change and resource conservation are the key challenges facing humankind.

The mechanical engineering industry has a central role to play here. Companies can make a significant contribution to achieving the goals of the Paris climate agreement and significantly reducing global greenhouse gas emissions. Green technologies (green tech) are the key to this. They enable energy efficiency and make the circular economy, climate-neutral production and security of supply possible.

The spectrum of technologies ranges from energy generation, agriculture, food production and packaging to medical technology, construction, infrastructure, mobility, logistics and robotics. And that is just a sample. Because not only the entire machine, but also each individual component can play its part in energy efficiency.

As such, the guiding principle of the mechanical engineering industry as a central enabler for climate protection and resource efficiency is: **Go For Green Tech!**

Go For Green

# Transformation

## Requires Cooperation

As the largest network organization and voice of the mechanical engineering industry in Germany and Europe, the VDMA is aware of the responsibility that the industry bears for people and the environment. Together with its approximately 3,500 members, the association is committed to resource and climate protection; the topics of circular economy and climate-neutral production are at the top of the VDMA agenda.

At the same time, global change processes are shaping life and business as never before: geopolitical tensions, social upheavals, technological developments or shifts in international trade have a significant impact on climate protection and our everyday lives. Transformation is on the agenda, and the VDMA is accompanying its members on this path, providing support and advice.

# Technologies

## for Climate Protection

**Mechanical engineering technologies can reduce greenhouse gas emissions in industrialized countries by almost 90 percent**

Around 30 gigatons of CO<sub>2</sub> equivalents can be saved annually in the OECD and BRIC countries if green products and systems from the mechanical engineering industry are used. This corresponds to almost 90 percent less greenhouse gas emissions.<sup>1</sup>

**Progress and innovation put mechanical and plant engineering at the center of development**

Optimization, innovation and solution orientation are part of the DNA of mechanical engineering. This applies to our own production processes and even more so to our customers' needs. Mechanical engineering thus plays a key role in climate-protecting technologies.

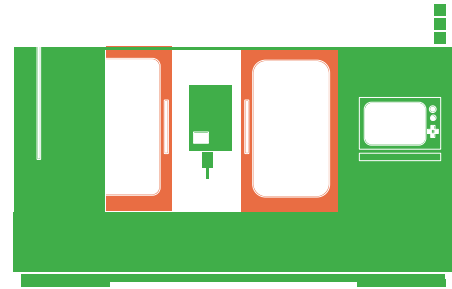
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# Enabler mechanical engineering

## Examples of machines

- Electric drives
- Machines for raw material recycling
- Heat pumps
- Heat exchangers

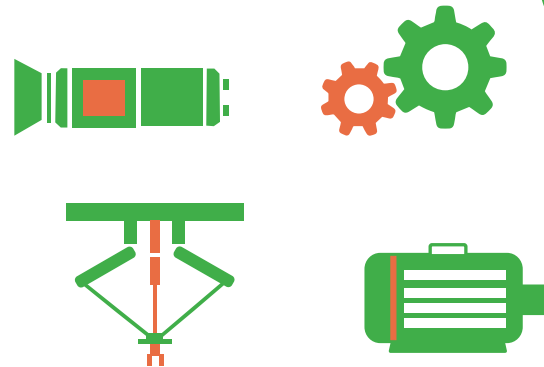
### Machines



## Examples of components

- Valves, pumps and compressors
- Efficient industrial burners
- Carbon capture components
- Technologies for smart building automation

### Components

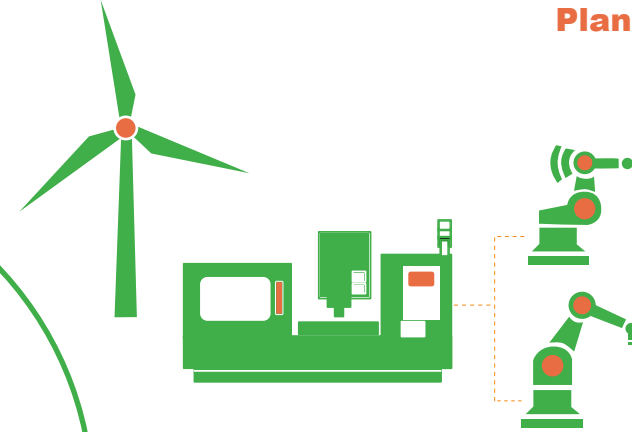


Circular economy  
Energy efficiency

**Climate  
Protection**

Climate-neutral  
energysources

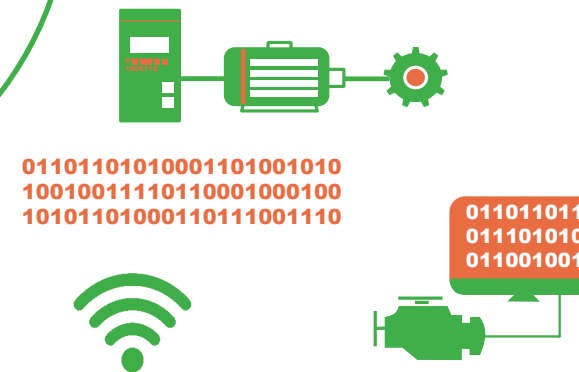
### Plants



## Examples of plants

- Equipment for battery and solar production
- Plants for the hydrogen economy and industrial decarbonization
- Efficiency technologies for thermal power plants
- Hydro and wind power plants

### Networks



## Examples of networks

- Digital networking of circular production processes
- Intelligent condition monitoring of machines and plants
- Industry 4.0 technologies for efficient production
- Technologies for climate-neutral production

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# Technologies

## for Climate Protection

### Technologies that benefit the environment and the mechanical engineering industry

Green tech from the mechanical engineering industry primarily benefits the climate. At the same time, green tech offers enormous economic opportunities: the market potential of decarbonization for the mechanical engineering industry is around 300 billion euros per year.<sup>2</sup> Medium-sized mechanical and plant engineering companies in particular, with more than 1 million employees in Germany and around 4 million in Europe, can play a role here to the benefit of society, and their own businesses.

### Teamwork for greater climate protection and resource efficiency

New innovative products and technologies require interdisciplinary collaboration and cooperation in networks. Europe's mechanical engineering sector is a master at this. It forms a unique industrial ecosystem that brings together research, start-ups, traditional companies and customers.

### In short, the mechanical engineering industry is at the center of climate protection and resource efficiency

No other industry offers such a broad spectrum of technologies and system solutions. As a result, mechanical engineering brings significant technological relevance - especially for climate protection!

With a 14 percent share of the global market for environmental technology and resource efficiency, mechanical and plant engineering holds the top position among the traditional industries.<sup>3</sup>

The VDMA represents some 3,500 German and European companies of the mechanical engineering industry. The industry stands for innovation, export orientation and medium-sized businesses. The companies employ around four million people in Europe, more than one million of them in Germany. Mechanical and plant engineering represents a European turnover volume of around 800 billion euros. With a net value added of around 270 billion euros, it contributes the highest share of the entire manufacturing sector to the European gross domestic product.

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# Imprint

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<sup>1,2</sup> Study „Grüne Technologien für grünes Geschäft“; BCG and VDMA; 2020

<sup>3</sup> Study: GreenTech made in Germany 2021, Umwelttechnik-Atlas für Deutschland“;  
Federal Ministry for the Environment and Consumer Protection; 2021



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