



Energy-efficient drive solutions and expertise from Lenze

Energy efficiency: It's all a question of looking at the big picture

In our private lives, sustainability and climate protection are playing an increasingly important role. Their importance in industry is increasing as well. After all, it is responsible for approximately half of electricity demand. To leverage efficiency, it is worth taking a look at drives in particular. At around 70%, drive systems are responsible for the largest share of industrial power consumption.

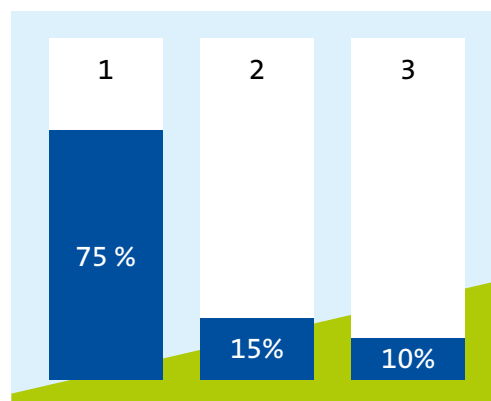
Hence, for decades, Lenze has been working intensively on devising means to ensure that the energy consumed is used as intelligently as possible, starting from the early stages of system and machine planning. In this context, we have defined three main pillars for saving energy.

First pillar: The greatest potential is to be found in efficient drive sizing that is tailored to process requirements.

Second pillar: The use of efficient components is another basis for savings.

Third pillar: Furthermore, energy can also be saved via the recovery of braking energy.

With this holistic approach, energy demand can be reduced by up to 60%, depending on the machine type.



Energy efficiency allows for effective climate protection while maintaining a competitive advantage

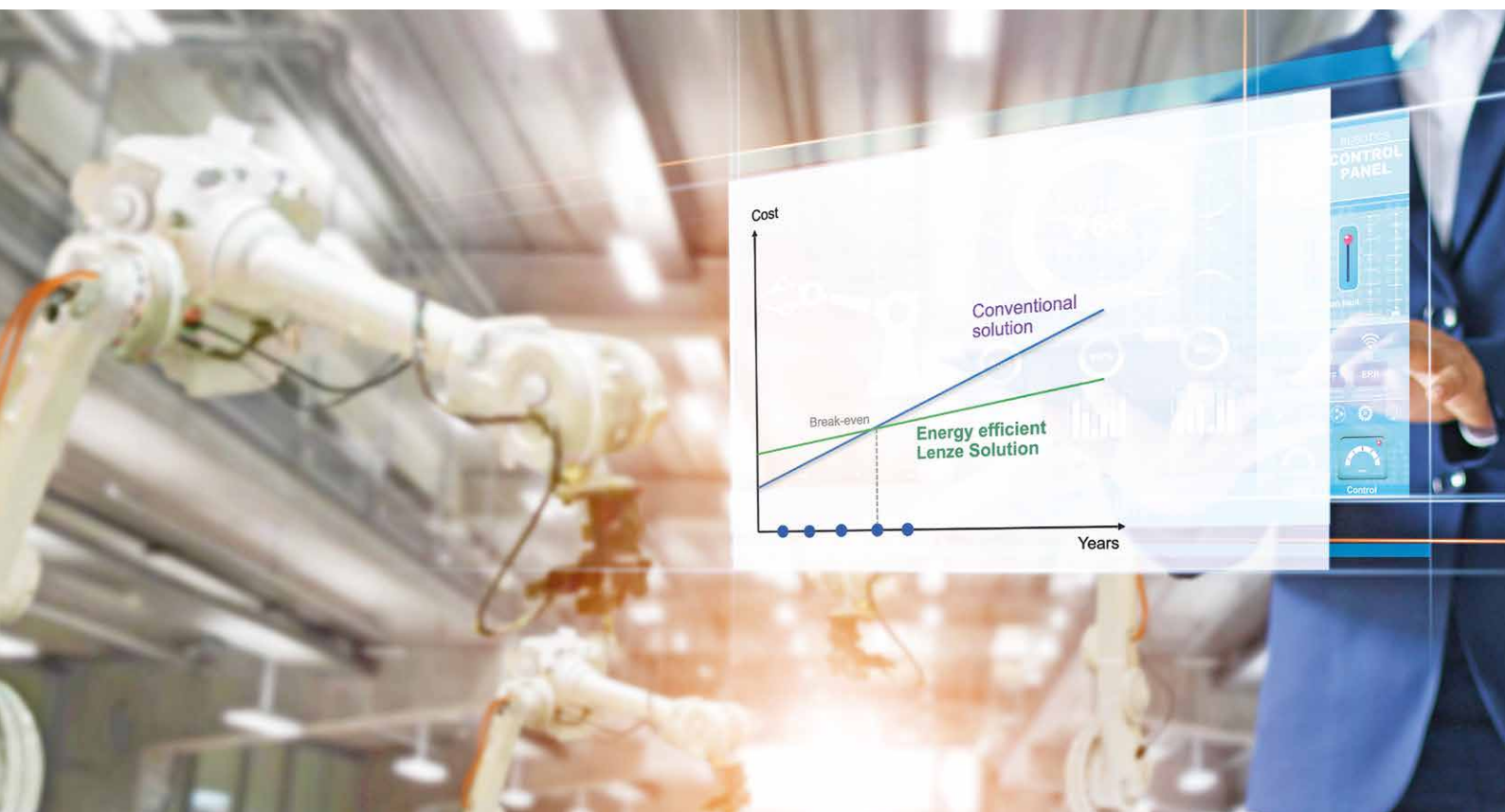
The political framework for action is provided by the multilateral Paris Agreement. In this agreement, over 180 countries committed to implementing tangible climate protection plans with the goal of limiting global warming to less than 2°C by reducing greenhouse gas emissions. Energy efficiency plays a key role in this. But energy-efficient drives also pay off in addition to their relevance to global climate targets: Reduced energy costs lead to welcome savings for users.

Operating machines ecologically and economically

Energy-efficient drives reduce the life-cycle costs of machines and, depending on the application, already start to pay off after a few months or years.

Often, the energy costs over the machine's service life exceed the initial acquisition costs many times over. In view of this, the life cycle costs are playing an increasingly significant role in the evaluation of the most suitable technology, and the economical use of electrical energy is becoming a sales argument.

Instead of supposedly higher acquisition costs, the focus is on the overall cost effectiveness of the machine and thus an interplay of acquisition, energy and operating costs. Seeing the big picture here means that operators, machine builders and drive manufacturers work together profitably in projects. Lenze supports this holistic view with energy-efficient drive systems and intelligent solutions.



Premium technology from Lenze brings movement to energy efficiency

Those who use efficient and controlled drive systems can already achieve up to a third of potential energy savings.

The basis for this is not only the use of energy-efficient motors, but also the use of energy-efficient gearboxes and the demand-oriented control of energy demand with the aid of a frequency inverter. Lenze m550 three-phase AC motors already meet all current and known planned energy efficiency regulations, such as the IE2 and IE3 efficiency classes. In combination with the efficient g500 gearboxes and i550 inverters, we thus offer a complete and energy-efficient drive package to realize initial savings potential. An alternative to this are the inverter-optimized MF three-phase AC motors, which are not affected by any efficiency regulations worldwide.

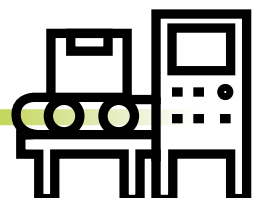
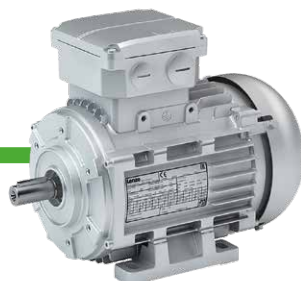
Furthermore, aspects such as the optimization of motion control and the utilization of braking energy can contribute to additional savings.

For example, many positioning processes do not always require the maximum acceleration and braking times. Adjusting to the dynamics actually needed greatly reduces losses in the motor.

Lenze offers an intelligent design tool for this purpose. The Drive Solution Designer allows for efficient and tool-supported drive dimensioning, from the inverter to the gearbox. This also includes an Energy Performance Certificate. It compares the various alternatives with each other. In addition, the DSD compares the resulting cost savings.

Drive Solution Designer: A real boon for energy efficiency

The greatest savings potential can be achieved by using electrical energy as wisely as possible. Hence, efficient drive sizing based on the actual process requirements of the application can result in energy- and cost-optimized drive sizes.



Energy efficiency begins with efficiency classes – but doesn't end there

Energy-efficient motors with energy efficiency classes IE2 and IE3 form the basis for the energy- and cost-optimized operation of machines.

However, if you want to tap into the greatest savings potential, we recommend that you not only comply with the legal requirements, but also take a closer look at your process requirements as a whole.

In this context, we can achieve more by working with you to analyze and improve the energy interactions within machines, processes and systems.

