



Whitepaper

Energy Efficiency

How companies can increase their energy efficiency and achieve their sustainability goals with speciality lubricants.

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LUBRICATION

your global specialist

Brief summary

Companies are increasingly looking for new ways to improve manufacturing efficiency in order to meet social objectives and political targets in terms of environmental protection. At the same time, they want to counter the increasing cost pressure in the best possible way. Here, the topic of energy efficiency is becoming increasingly important. It includes two important areas for companies: On the one hand, using energy efficiently in production helps to reduce costs. On the other hand, reduced energy consumption helps companies achieve their sustainability goals. The use of speciality lubricants is a simple and often underestimated approach that companies can adopt at relatively little cost to

significantly reduce their energy consumption and therefore their direct or indirect CO₂ emissions. In addition, high-performance lubricants allow the relubrication intervals to be extended, thus reducing waste.

Positive secondary aspect: The operating costs can also be substantially reduced in this way. Here, the possibilities are enormous and far from exhausted. Consulting services such as the KlüberEnergy services of tribology specialist Klüber Lubrication provide a systematic approach to identifying and realising optimisation potential.

Energy efficiency: increasingly important for companies

Many companies already have energy-saving projects and programmes in place to improve the energy and material efficiency of facilities. Up to now, however, these approaches have mainly been limited to the obvious possibilities, such as replacing old devices with new, more energy-efficient ones. The role of lubricants, which can have a large impact, is often overlooked. Intelligent selection of the speciality lubricant, precisely matched to the application, offers unimagined possibilities for energy saving. In terms of payback time, lubricants often yield much better results than cost-intensive design changes and renovations.

New energy efficiency solutions

Energy efficiency

Originally:
€ 50,000

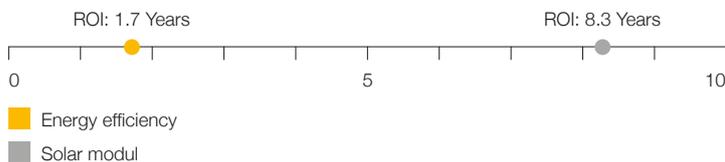
Savings/year:
€ 30,000



Solar moduls

Originally:
€ 100,000

Savings/year:
€ 12,000



KlüberEnergy efficiency solutions are more effective than conventional alternative solutions

The focus is not only on savings in percent but also on real savings in energy costs, kWh, CO₂ and break-even point/ROI

Business case – gears

Internal mixer in the tyre industry:

- Operating hours: 7,680 hours
- Filling amount: 1,400 litres
- Average power consumption: 766 kW
- Energy price: EUR 0.10/kWh

Financial analysis:

- Investment: EUR 10,430
- Yearly saving: EUR 14,846
- Payback time: 8 months

Impact on the environment:

- early energy consumption: 5,883 MWh
- Yearly energy saving: 165 MWh
- CO₂ saving: 100.6 tonnes



Business case – compressors

Compressor

Technical aspects:

- Operating hours: 7,600 hours
- Filling amount: 40 litres
- Average power consumption: 100 kW
- Energy price: EUR 0.13/kWh

Financial analysis:

- Investment: EUR 460
- Yearly saving: EUR 2,717
- Payback time: 2 months

Impact on the environment:

- Yearly energy consumption: 836 MWh
- Yearly energy saving: 20.9 MWh
- CO₂ saving: 12.5 tonnes



The established energy efficiency measures are often associated with considerable financial expense. However, it is crucial for industrial manufacturers that the benefits of energy efficiency and the associated increased sustainability outweigh the costs. Lubricants offer new ways to achieve sustainability goals, lower costs and an improved energy balance through simple measures without major design changes.

The efficiency improvements achieved with lubricants must be demonstrable

Optimisation in terms of energy efficiency through lubricants, and its quantification or monetary proof, is not simple.

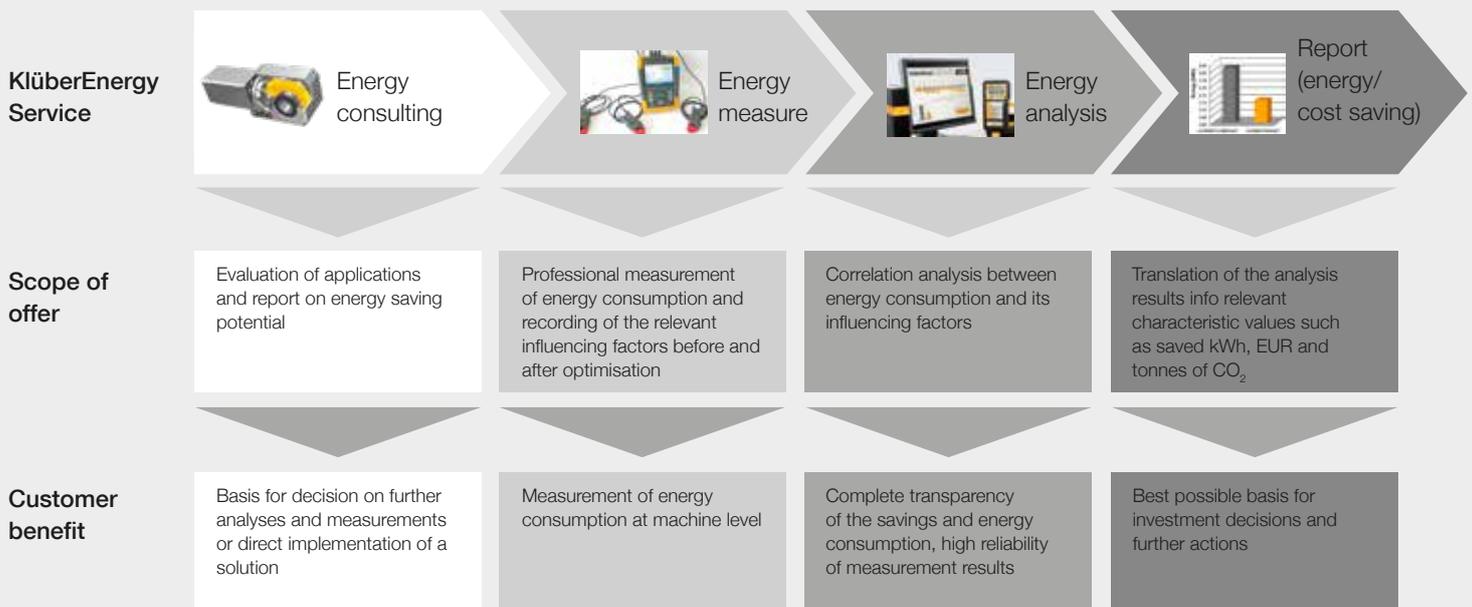
In order to achieve particularly high energy efficiency, therefore, not only the lubricant but the entire system must be considered. Measures such as cleaning, changing seals and selecting the optimum viscosity grade, as well as other measures, also play a major role. A valid statement about the energy efficiency of a lubricant solution can only be made based on a before/after comparison. One indicator for improved energy efficiency is the reduction of the temperature at the application

KlüberEnergy services

With KlüberEnergy, Klüber Lubrication has developed a service that helps to systematically identify and realise the existing potential for increasing the efficiency of a company. KlüberEnergy projects offer the advantage that demonstrable energy cost savings can be achieved with relatively little effort on the part of the customer. Together with the respective customer, Klüber Lubrication develops a solution for the respective specific conditions that is not limited to mere lubricant recommendations..

A KlüberEnergy project includes the professional survey of savings potential in the tribological systems, measurement of the energy consumption before and after the solution is introduced, professional analysis of the measured data and translation of the measurement results into concrete information about the financial savings achieved. Based on the analysis of the tribological system, a high-performance lubricant is selected for use after the first measurement. Then the second measurement is performed. In addition, the facility in question is analysed holistically.

KlüberEnergy – the advisory approach



Stricter audit regulations with ISO 50003

For more and more companies, certification of their energy and resource management plays an important role. With the new version of ISO 50003, which came into force in 2017, there are fundamental changes for companies with a certified energy management system. In accordance with the standard, auditors require proof of the energy efficiency measure, which is generally confirmed by measurements. For both initial certification and re-certification, companies must therefore prove that they are continuously improving their energy efficiency. For this purpose, KlüberEnergy offers a systematic approach that supports companies in achieving their goals and validating improvements.

Innovator Klüber Lubrication

Klüber Lubrication combines the experience gained from many years of broad-based fundamental research, numerous KlüberEnergy service projects and feedback from the market to develop energy-efficient lubricant solutions that help users in a wide range of industries to reduce their energy consumption.

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