



Klüber Energy Efficiency

How chemical companies can use specialty lubricants to increase system reliability and achieve their sustainability goals at the same time.

KLÜBER LUBRICATION
your global specialist

BRIEF SUMMARY

Chemical companies are increasingly looking for new ways to help them achieve their wide-ranging objectives: To minimise downtime; to decrease energy consumption in order to meet social goals and political requirements in terms of environmental protection; to counter increasing cost pressure in the best possible way and to improve plant safety.

The use of specialty lubricants, especially in rotating equipment, for example, 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.

Besides better energy efficiency, specialty lubricants offer a wide range of additional benefits, e.g. lower friction, wear, and operating

temperatures, all contributing to less downtime for maintenance and relubrication as well as more reliable operation at lower component and lubricant cost.

The Klüber Energy Efficiency solution is designed to prove and quantify the reduction of energy consumption after a changeover to Klüber lubricants. When conducting a Klüber Energy Efficiency project, the Klüber specialists will determine all saving potentials of the machinery involved, measure power consumption before and after the optimisation, provide a professional analysis of the data and translate the measurement readings into tangible savings. With this approach chemical companies can realise potential sa-vings and reduce their energy costs.

The role of lubricants, which can have a large impact, is often overlooked. The smart selection of a specialty lubricant, precisely matched to the application, offers unimaginable scope for energy saving. In terms of payback time, lubricants often yield much better results than cost-intensive design changes and renovations.

To summarise: Lubricants offer new ways to achieve sustainability goals, lower costs and an improved reliability of chemical plants through simple measures without major design changes.

Different approaches to energy saving

Klüber Energy Efficiency solution

Original energy cost: €50,000

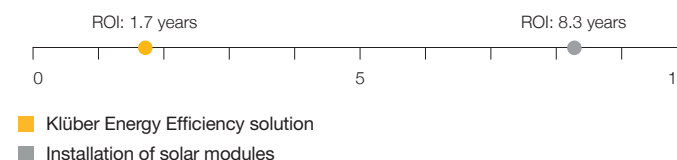
Savings/year: €30,000



Solar modules

Original energy cost: €100,000

Savings/year: €12,000



Klüber Energy Efficiency solutions are more effective than conventional 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:

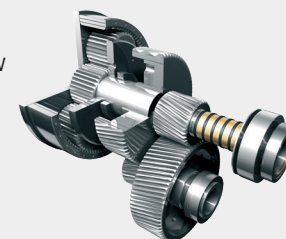
- Operating hours: 7,680 hours
- Filling amount: 1,400 litres
- Average power consumption: 766 kW
- Energy price: EUR 0.10/kWh

Financial analysis:

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

Impact on the environment:

- Yearly 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



ENERGY EFFICIENCY SOLUTION FROM KLÜBER LUBRICATION

With Klüber Energy Efficiency, Klüber Lubrication has developed a solution that helps to systematically identify and realise the existing potential for increasing the efficiency of a plant. Klüber Energy Efficiency projects offer the advantage that demonstrable energy cost savings can be achieved with relatively little effort on the part of the customer. In each Energy Efficiency project, Klüber Lubrication de-velops a solution together with the customer, taking into account the specific conditions in the plant. This solution normally goes beyond mere lubricant recommendations.

A Klüber Energy Efficiency project includes the professional assessment of savings potential in the tribological systems, measurement of the energy consumption before and after the solution is intro-duced, 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.



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