



RUBIX

>



Motor-driven systems represent more than 70% of electricity consumption in industry

Cut energy waste in your operations

Motor-driven systems – including compressors, pumps, and fans – account for more than 70% of industry's electricity consumption. Most motordriven systems are operating inefficiently and are wasting a huge amount of energy in the process.

Often there's an opportunity to make motor-driven systems twice as efficient, significantly reducing energy costs and playing a key role in supporting the achievement of emissions reduction targets. As Europe's leading distributor of industrial products and services, Rubix is passionate about helping customers to seize the opportunity in energy efficiency.



Rubix offers a full suite of products and services to cut energy waste, deliver cost savings, and support emissions reduction targets

Motion / flow



Key places to cut energy waste within a motor-driven system

All components affect system efficiency

Energy losses occur at many points in a motor-driven system. Both the system components and the way they work together must be optimised to maximise efficiency. So, while energy efficiency of individual motors may be high, the efficiency of the system as a whole can be low.

Typically, there are energy losses occurring not only in the electric motor itself, but also throughout the entire system the motor is driving. All components of a system, including the driven equipment and the end-use devices, must be optimised to maximise energy savings. Experts estimate that energy savings of between 20-30% can be achieved by optimising the whole motor-driven system.

Electrical input

Variable speed drives

Variable speed drives, used to control the speed of machinery such as motors, opitimise the amount of energy used by motors, supporting better system efficiency. They make sure motors only use as much energy as they need to, for the job they are doing. Variable speed drives can often be retrofitted to existing motors.

Motors

Motors account for a significant proportion of energy consumption at a manufacturing site. Efficiency can be greatly improved by:

- Using the correct size motor for the application
- Using an energy-efficient model
- Correctly regulating the speed of motors



Gearboxes play a key part in reducing energy usage. The more efficient the gearing, the less power is lost. Energy efficiency can be greatly improved by:

- Right-sizing the gearing for the application
- Replacing worn gearboxes
- Using energy-efficient industrial gear lubricants

Driven applications

• 20% - 40% of energy used by compressors is lost through air leaks. Efficiency can be improved by identifying and fixing air leaks and replacing parts if necessary

- Using efficient, intelligent pumps with variable speed control can also deliver significant cost and energy savings
- V-belt drives cause higher energy consumption if they have worn pulleys. Pulley wear can be easily checked to identify if drives should be replaced to increase efficiency

Benefits of improving energy efficiency

Rubix has the expertise and know-how to realise significant energy savings in industrial production processes. Improving the efficiency of motors and wider motor-driven systems plays a central role in reducing energy waste, boosting profitability, and delivering sustainability targets.

Given the typical long life of motors and other machinery and equipment in industrial processes, investments in improving their efficiency will payback several times over their life. Compared with other energy efficiency investments, motor systems typically represent the most attractive opportunity to realise cost savings and long-term efficiency improvements.

Customer case study Optimising compressed air systems

17%

Reduction in energy consumption

£140,000

Reduction in related costs

18 months

Return on investment

CompCare, a Rubix UK company, audited a major food company's compressed air systems at two of its large production facilities. Data loggers were installed to calculate compressed air and energy usage and quantify potential energy savings that could be achieved through system improvements.

Using a data-driven approach, CompCare recommended and implemented several changes to deliver efficiency gains, including combining two systems to create a single system; reducing system air pressure; installing an intelligent control system to better match air supply and demand; and upgrading compressor equipment to more efficient models. Across the two sites, efficiency improvements implemented by CompCare reduced annual energy consumption by 17% and related costs by around £140,000, delivering a return on investment within 18 months.

A full suite of products and services

Rubix offers a full suite of products and services to cut energy waste and deliver environmental and cost savings – from production line audits to asset optimisation and ongoing condition monitoring.

Rubix's energy management services for power transmission systems



RUBIX

How Rubix can help you cut energy usage

Rubix has the largest range and reach of engineering services in the market, with a strong track record of optimising energy consumption in production and reducing associated costs.

Asset tracking survey

Rubix offers asset tracking surveys to provide an overview of your critical assets and how you can optimise them to reduce energy usage. Optimising efficiency means looking at each of the components individually – motors, drives, gearboxes – as well as the system as a whole.

Conducting an asset survey is a simple and effective way to get a single, up-to-date database of your assets, to provide an accurate picture of how a plant is running and enabling you to make informed decisions – including for ways to reduce energy consumption.

Rubix will visit your sites to assess your machinery base and register your critical assets. As part of this, our engineers will identify any issues that should be fixed and the assets that should be repaired or replaced to lower energy consumption. We will then populate the Rubix Asset Tracker with information on your assets. This also serves as an effective starting point for condition monitoring and predictive maintenance programmes.

Efficiency TCO calculator

Rubix will conduct a motor efficiency evaluation, using our proprietary motor efficiency calculator, to inform you of the payback period for repairing motors where needed, or replacing them with more efficient models.

Our technical experts will provide a recommendation based on our calculation, which will show the reduction in energy consumption that will be achieved through an intervention, whether through repair or replacement. We will provide an estimate of the potential annual savings, and the payback period for new motors.

Over 70% of industrial motors in use across Europe have an energy efficiency rating of IE2 or lower, so there is likely to be significant scope for achieving energy savings by upgrading to more efficient models of motor.

Repair and replacement programme

Rubix will apply deep experience in running motor maintenance programmes to optimise motors and motor-driven components in your production process. We offer a broad range of energy efficient products from well-known suppliers as well as our own exclusive brands.

We can also support you in undertaking a repair / replacement programme to improve motor efficiency and execute this for you through a combination of in-house and third-party capabilities.

We will record details of the programme in our condition monitoring platform as part of our offering to enable continuous oversight of asset condition and energy consumption in your production processes.

Air leakage surveys, and equipment inspections and realignment

Air leaks are one of the largest sources of avoidable energy waste. For any plant using compressors, approximately 30% of the electricity bill is dedicated to running them. Of that, on average 20-30% is lost through air leaks.

Rubix offers specialist air leak surveys to identify leaks in your compressed air systems. We will complete a comprehensive audit using state-of-the-art tools, and provide a report detailing leaks, energy loss, cost and CO2e impact.

Rubix will also recommend parts and actions required to fix any leaks, as well as sourcing parts and carrying out repairs. We will then re-run the audit to ensure the follow-on actions have delivered expected benefits.

As part of our equipment inspections, we will also identify quick and practical changes that be made to belts and chains to improve energy efficiency, such as replacing worn pulleys which cause V-belt drives to consume more energy than necessary.

Ongoing agnostic condition monitoring

Assets in good condition use energy most efficiently. Ongoing condition monitoring will help you find potential points of failure before they become issues at the expense of unnecessary energy consumption.

Our online condition monitoring platform will track the performance of key machines (motors, fans, gearboxes, pumps, etc). This will highlight when your machines are not running at their optimum level, enabling a predictive maintenance programme for each machine to avoid energy waste and potential failure.

We will deploy Rubix Optime sensors in your facility and set you up on the Rubix Condition Monitoring Platform. If sensors are already in place, we can also link these into our platform since it is a brand agnostic solution.

Our online condition monitoring platform will also allow you to access technical services that improve uptime and energy efficiency and reduce your facilities' greenhouse gas emissions.



Rubix service providers across Europe

Rubix offers deep technical expertise and practical support through Rubix-branded service entities as well as Rubix-owned companies. Our broad service capability across Europe is complemented by our extensive energy-efficient product offering, supporting your operations to become more energy efficient overall.

Services local to your manufacturing facilities

Rubix offers specialist services local to your European operations, supporting you to optimise energy consumption within your production lines. We can help you reduce the amount of energy consumed by motors, gearboxes, compressors, pneumatic systems and other components, as well as optimising entire motor-driven systems. The depth of our expertise, combined with the breadth of our offering across Europe, makes Rubix an ideal partner to support your efforts to cut energy waste.

The Rubix

Solution

Technical experts to support ongoing condition monitoring

Our conditioning monitoring services can be tailored to the demands of your manufacturing and processing environment. We provide a holistic predictive maintenance solution, helping you address problems before they become urgent and have adverse environmental impacts. Our local technical experts can also deliver air leakage surveys and are available to come to your site, bringing the collective knowledge and experience of more than 8,000 colleagues working across all major industry sectors and 22 European markets.

Contact your local Rubix representative for details of our service offerings local to your European operations.





For more information on how you can tap into this specialist expertise in technical solutions and industrial supplies, visit: www.solution.rubix.com