

ENERGAIR CASE STUDY



DELPHI
DIESEL SYSTEMS

DELPHI DIESEL SYSTEMS opt for Energair compressed air management system and save £20,000 per annum energy costs.

The services supply team at Delphi Automotive Systems in Sudbury challenged EnergAir solutions Ltd. to demonstrate that energy cost savings of £20,000 per annum could be achieved by installing an Enercon compressed air management system. EnergAir did exactly that by monitoring compressed air system performance in detail for two weeks and presenting the results in a qualified report. Twelve months after the system was installed, it had paid for itself and now, twenty months on, it is consistently delivering energy



savings on target and also providing other benefits such as reduced compressor usage and data for more accurate maintenance procedures.

Similarly to many other global manufacturing companies, the Delphi group currently has a target of reducing energy consumption at all its major manufacturing sites by 3% each year. The Sudbury plant however, produces diesel engine injection equipment and filters for the worldwide market and runs 24hours 350days a year, due partly to the current growth trend in diesel engine usage.

Peter Vallance, Central Services Manager at Delphi comments that, "Current high production levels meant that we had to reduce energy consumption by working more efficiently. Compressed air represents a significant part of our energy bill and the

EnergAir system has given us close to our target 3% savings on electricity simply through more efficient operation".

The site services team at Delphi recognised that the use of variable speed drives (VSDs) would improve compressor efficiency and controllability six years ago when their current air compressors were installed. At the time they could not find a solution on the market that was either proven or cost effective. Two years ago compressor maintenance contractor Anglair suggested that Delphi consider the EnergAir system as it provided VSD control

and a host of other system benefits such as reporting performance data and continuous condition monitoring.

Peter Vallance continues, "After an initial meeting, we were interested in EnergAir's ability to show actual savings at a site prior to a system being installed. We laid down the gauntlet and proposed that if they could demonstrate the savings, we would invest". EnergAir did exactly that by fitting equipment at the site to monitor system pressure, power consumption in kW/hours, air production volume in m³ and efficiency in kW/m³ for a fortnight.

The results were then collated into a full systems report that detailed the exact savings that could be expected and the methods by which they could be achieved. Peter Vallance states, "We were won over by the detail and accuracy of the initial survey and decided to have the full system installed". There are three 98kW compressors and three 267kW units on site, all six machines are now integrated into a control network using a single VSD to fine tune compressor operating speed. The Enercon system controller works with an I/O and a comms box to manage the system using the monitoring equipment that gave the initial report details as a feedback loop.

Control and reporting is done via a PC on-site. The installation took only three days and did not interrupt production in any way.

After twelve months in operation the whole installation from EnergAir paid for itself in savings made from electricity bills.

Peter Vallance confirms, "We are very impressed with the system overall, it has delivered the savings promised and provides us with a much finer control over the compressor house in general as well as producing accurate reporting of efficiency and performance. That information is passed on to senior management, adding a transparency to the services operation that was previously impossible. The detail of compressor loading has also allowed us to predict and carry out maintenance more effectively and so control costs and avoid downtime".

Nigel Clark, one of EnergAir's Senior Systems Engineers provides more detail on how the results are achieved. "In real terms the EnergAir compressed air management system installed at Delphi reduces compressor energy consumption by closely matching system pressure to demand and reducing off-load running or idling of compressors. The control is implemented in a number of ways depending on the installation, an 'Enercon' management system controller though ensures that all the compressors on any one ring main, regardless of their make, type or capacity, operate cohesively and more importantly, efficiently.

Effective downstream system monitoring is also an essential part of the package. Sensors are fitted at relevant points throughout a system and the recorded data is presented



by EnergAir's EnerSoft air management software. EnerSoft displays live information on equipment status and system pressure, while providing accurate metering of power consumption in kW/hours, air production volume in m³ and efficiency in kW/m³. EnerSoft can also be used to produce regular performance reports for internal appraisal; the function is a built-in feature of the software and is extremely easy to use.

An added advantage of the monitoring equipment is that it has a series of alert systems built into it; these can be set-up to trigger multi layer responses both locally and remotely including screen warnings and audible signals, phone calls, texts and fax messages. At Delphi, the 'Alert' system is programmed to provide visual warnings on-site and report to the service contractor Anglair with pre-emptive warnings of problems, emergencies and routine maintenance checks. This includes the air dryers at Delphi that are also linked into the system.

Companies can contact EnergAir for a free preliminary site survey and receive an estimate on the amount of energy that can be saved; should it prove that there is potential for saving energy, EnergAir will now provide a detailed report and offer to guarantee the energy savings.





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