

ENERG AIR CASE STUDY



AUTOMOTIVE

Automotive component manufacturer reduces energy consumption on compressed air by **20% pa**

The manufacturer, which produces cylinder liners for the automotive industry, employs a 24hr continuous casting process using compressed air for both pneumatic automation equipment and cooling purposes.

Having identified compressed air as a possible source for efficiency gains and a reduction in energy usage, a site audit confirmed the details and an EnerAir compressor management system was installed. Reduced electricity bills alone have amounted to an annual cost saving of £18k, plus a range of production benefits gained from improved control over compressed air generation and distribution.

Technology and engineering from the company is at the heart of many vehicles and aircraft around the world and as a market leader in innovative technology, it is actively seeking to reduce the environmental impact of its operations. Compressed air was

therefore an obvious target for review purely from an energy reduction point of view, and prompted a full audit of the system.

The original system comprised five fixed speed compressors installed, with capacity ranging from 12m³/min to 28m³/min. The exact energy costs that could be attributed to the usage of compressed air were unknown at the site prior to the system being installed, so the first task for EnerAir was to conduct an audit and set a benchmark for performance and system efficiency. Air pressure and flow sensors were fixed around the site to monitor system pressure drop, power consumption in kW/hours, air production volume in m³ and efficiency in kW/m³ over a period of time. Pipework was checked for leaks, air dryers and ancillaries were also assessed.

The results were then collated into a full systems report that detailed the improvements





that could be made, the exact savings that could be expected and the methods by which they could be achieved. The Annual compressed air energy costs produced a headline figure of £98k (audited).

The installation of an EnerAir Compressor Management and Communication system has reduced the number of compressors required for normal production demand from four to three, resulting in an 18% reduction in overall energy costs. **Once fitted, the EnerAir system actually delivered an £18,000 energy saving in the first year, reducing the energy bill to £80k and achieved an ROI period of less than five months.**

The savings were achieved through intelligent selection of different sized compressors to match demand, and close control of system pressure to operate at the minimum acceptable pressure without compromising process requirements and reliability. Further savings were realised by quantifying the costs of leaks and misuse of compressed air on the site, these issues were easily addressed and resolved by fixing leaks and altering working practices on the production line.

Condition monitoring of dryers and filters has highlighted when they need replacement, improving system efficiency and further optimising process reliability. EnerSoft software and Remote Access Services now provide the site with permanent auditing for continual improvement and assessment of the whole compressed air system.

The first energy savings have also helped the company to meet targets, making a positive contribution towards reducing carbon emissions.

Fast Facts

- **The site originally ran five fixed speed compressors on a classic cascade system leading to annual energy costs for compressed air of £98k.**
- **Installation of the EnerAir management and communication system reduced the number of compressors required to meet demand to three.**
- **New annual energy costs for compressed air is £80k which represents an 18% saving in electrical energy pa.**
- **The system provides further savings via its ability to identify leaks and misuse of compressed air which minimises waste.**
- **Capital payback time of less than five months.**
- **Keeps compressed air generation to the minimal operating pressure, ensuring that wasted offload energy does not effect running costs.**
- **The energy savings created by the EnerAir system contribute to emissions savings targets which entitles them to an 80% discount on the climate change levy.**





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