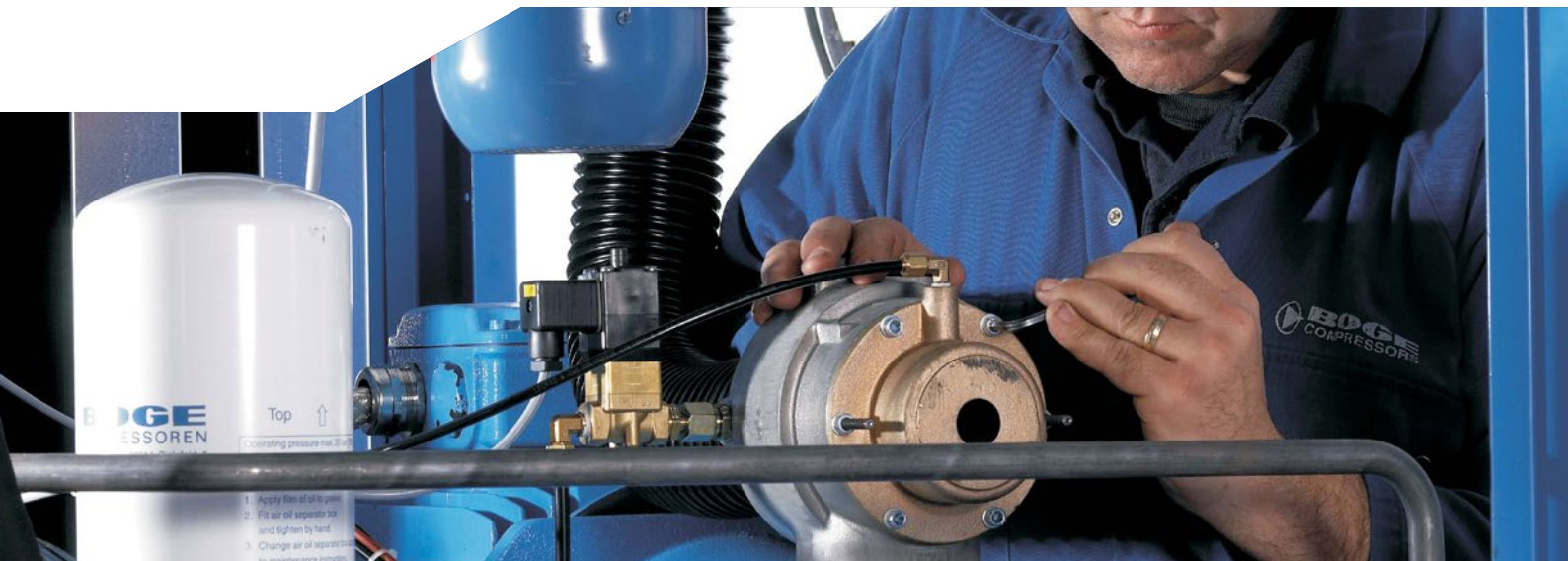


# Better energy efficiency with ISO 11011



**The British Compressed Air Society (BCAS) and the ISO Technical Committee 118 have defined a new standard for compressed air system assessment, called ISO11011 (Compressed air – Energy efficiency – Assessment). This white paper highlights how the new standard will promote energy efficiency, waste reduction and profitability.**

The vast majority of industries use compressed air for some aspect of their operations, and in many cases systems are operating 24/7. With the need to manage precious energy resources at constant pressure, and the provision of a reliable and energy-efficient supply of air a vital need for many businesses, a series of legislative and voluntary initiatives are being introduced to help improve efficiency.

In April 2011, more than four years of work between the British Compressed Air Society (BCAS) and the ISO Technical Committee 118 culminated a new standard for compressed air system assessment, called ISO11011 (Compressed air – Energy efficiency – Assessment).

Compressed air users will benefit significantly from the introduction of the ISO 11011 standard as it sets in place guidelines for companies to conduct industry-wide, like-for-like energy efficiency audits. Energy audits establish the volume of compressed air that a company uses and how much it costs to generate.

The audit results then enable businesses to look at the procedures that are available for reducing carbon emissions and waste in their manufacturing process, while reducing environmental impact.

It is only possible to make significant, beneficial improvements when there is accurate information about the current performance of a compressed air application. One reason, therefore, that the new standard was introduced was to set the requirements for conducting a compressed air system assessment, not only for analysing the data but also for reporting and documenting the findings.

Historically, the lack of any formal standard allowed suppliers with differing levels of expertise to conduct a compressed air audit, and with such a variance in the quality of each evaluation it was difficult to consider any analysis as a conclusive, comprehensive system

# Better energy efficiency with ISO 11011

assessment. The globally accepted ISO 11011 has now created a framework for the compressed air system energy efficiency assessment and auditing process.

## What the new standard contains

The new standard assesses compressed air use, critical production functions and poor system performance. This helps to identify and quantify energy waste, energy use and total compressed air demand. ISO 11011 will ensure that compressed air providers are committed to all aspects of waste reduction and energy efficiency, and this will support end users by providing comprehensive and regular energy audits in line with the new standard.

Providers can evaluate all areas in the compressed air generation and treatment process to detect any present defects and carry out a number of important tests, including a consumption test, vibration control test, leakage test, sound test and an oil check.

Some companies may already be working to ISO Standard 50001 “Energy management systems — Requirements with guidance for use”. ISO11011 is linked to this overall energy saving standard.

## The three subsystems

To underline how the new standard comprehensively considers the entire air system it classifies compressed air in to three subsystems:

- Supply (including the conversion of primary energy to compressed air energy)
- Transmission (including the movement of compressed air energy from where it is generated to where it is used)
- Demand (including productive end-use applications and various forms of compressed air waste)

The classification of compressed air in to three subsystems as described above will help identify specific problems in what is often a difficult application to measure.

For example, where compressed air systems travel large runs of pipe work and there is little control over system pressure, it can be difficult to manage air usage. The comprehensive assessment of supply, transmission and demand will help optimise the system.

## Baselines, waste management and ‘critical air demands’

A key features of ISO11011 will be the establishment of a ‘baseline’ that establishes the current performance and costs of a compressed air system. Engineers can



# Better energy efficiency with ISO 11011



then estimate improvements to the compressed air system by comparing the new measurements with the original baseline.

Leaks can be responsible for as much as 1/3 of the generated compressed air, while 'inappropriate use' - such as when compressed air is being used inefficiently for cooling in place of a fan - adds further waste. ISO11011 addresses these issues by assessing and validating the need for and effectiveness of treatment equipment as it is presently installed to ensure that any equipment will deliver the proper pressure and quantity of air throughout the system, while identifying any opportunities for performance improvement and energy reduction.

The standard also promotes efficiency by identifying 'critical air demands' - those that impact on key

performance factors such as product quality, production rate, scrap rate, rework cost and customer satisfaction. This will efficiently balance the cost or other impact of any change against its true value to the plant.

BOGE Compressors Limited has adopted ISO 11011 Standard for all Compressed Air Energy Efficiency Assessments. BOGE's commitment to complying with this new standard will provide comprehensive and detailed energy audits, which extend its customer support services and enable compressed air users to optimise their energy usage and identify actions that can reduce costs.

**To find out more about BOGE Compressors and the services we provide, please visit our website:**  
[www.boge.com/uk](http://www.boge.com/uk)