BRITISH COMPRESSED AIR SOCIETY

The 10% taskforce

Simple steps to cut compressed air energy consumption

IMPORTANT INFORMATION!
Based on £0.1249/kWh
Energy costs are increasing and savings will now be significantly higher. Please refer to your electricity unit charge.

- Reduce energy usage by **10%**
- Help industry **save £91.8 million** in wasted electricity costs
- Save over **347 thousand tonnes** of CO_2
- Take the equivalent of **261 thousand** cars off the road

Insist on BCAS - Be Compliant And Safe

www.bcas.org.uk

It's time to act

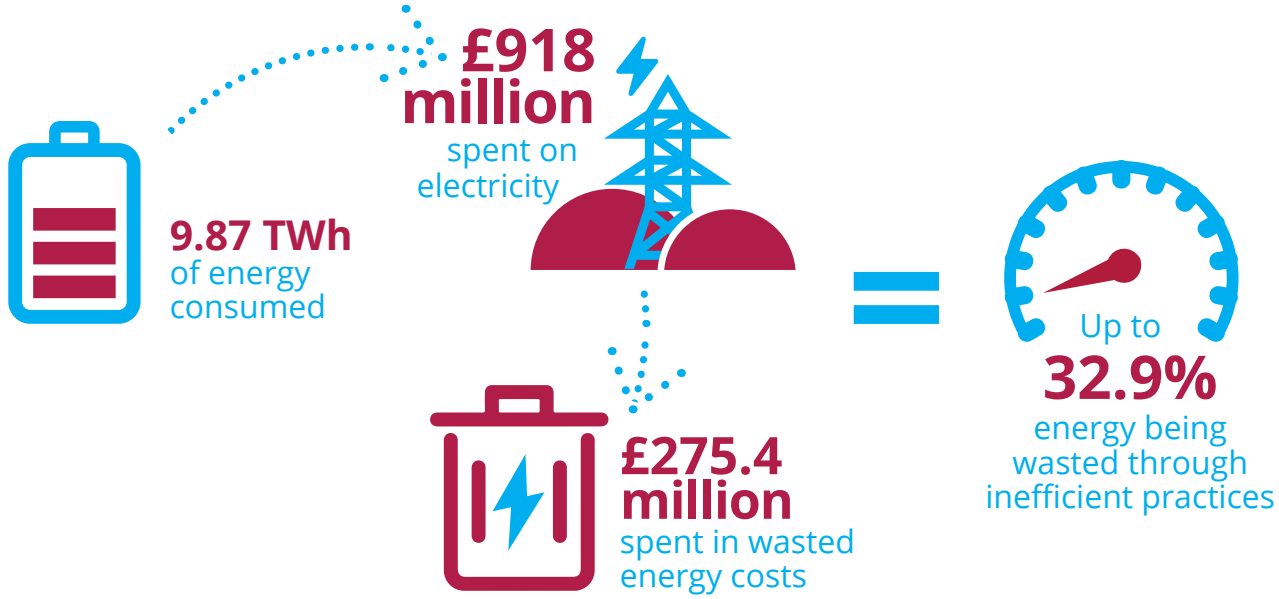
Generating compressed air can be very energy intensive; representing as much as 30 per cent of a site's total electricity bill.

What if you could reduce that figure, through a series of energy saving measures? Imagine the combined carbon savings that industry could achieve by taking a few simple, low cost steps to help cut the energy consumption from compressed air.

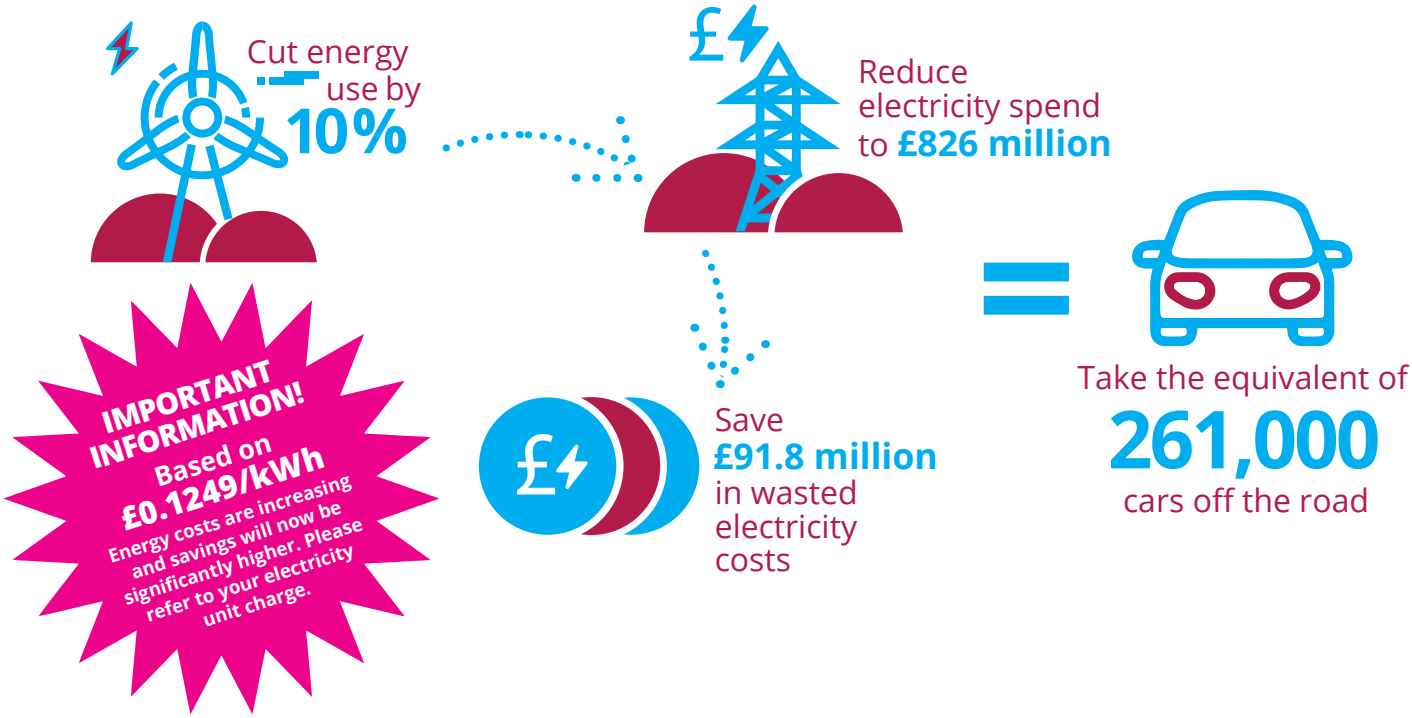
So we are taking a stance. Come and join our **10% Taskforce** and make a stand against wasted energy. It's our call to arms for UK businesses to take simple steps to cut their compressed air energy usage figure by **10 per cent**.

Working together we could save over **£91.8 million** in wasted electricity costs – and more importantly, make significant strides to improve climate change by taking the equivalent of **261 thousand cars off the road**.

The Facts*



The 10% Taskforce*



Saving today for a greener future

According to a report entitled 'Compressed Air Systems in the European Union'[1], when looking at the most important energy savings techniques available to compressed air users, 'the energy savings amount to **32.9 per cent**, achievable over a 15 year period'. These are significant, potential savings, but how do these translate to the average compressed air user here in the UK?

To find out, we conducted a study based on the known installed base of compressors in the UK to ascertain their combined industrial energy usage, which is calculated at **9.87 TWh**[2]. Based on the current UK average non-domestic electrical unit cost of **£0.093/kWh**[3], this equates to a huge, **£918 million** being spent by UK companies to generate the compressed air their businesses rely on. And it's not all about the money either.

That 9.87 TWh of electricity is equivalent to the carbon emissions from over **2.6 million cars**. And, as we already know, around **30 per cent** of this energy is being wasted through inefficient practices – a whopping **£275.4 million**.

At a UK-wide level, the figures are substantial, if not a little alarming; but even at an individual site level, they represent a considerable overhead – not to mention carbon footprint – that, if reduced would make a significant contribution to bottom line profitability and environmental performance. But no business is perfect and reducing all of this wastage is a tall order.

So BCAS had created the **10% Taskforce** – a call to arms for UK businesses to take simple steps to cut this compressed air energy usage figure by **10 per cent**.

The 10% taskforce!

Join our campaign to cut compressed air energy wastage and take the equivalent of 261 thousand cars off the road, saving UK business over £91.8 million. Share your compressed air energy saving tips with your industry colleagues on our social channels. We'll showcase the best ones so everyone can share in the savings.

@BCAS in linkedin.com/company/british-compressed-air-society

www.bcas.org.uk/10taskforce

Simple steps to easy savings

The good news when it comes to saving energy from compressed air consumption is that there are lots of simple steps you can take now, without significant investment. These small, incremental steps soon add up to big savings[4].

Energy saving measure	% Applicability (1)	% Gains (2)	Potential Contribution (3)
System installation or renewal			
Improvement of drives (high efficiency motors, HEM)	25%	2%	0.5%
Improvement of drives (adjustable speed drives, ASD)	25%	15%	3.8%
Upgrading of compressor	30%	7%	2.1%
Use of sophisticated control systems	20%	12%	2.4%
Recovering waste heat for use in other functions	20%	20%	4.0%
Improved cooling, drying and filtering	10%	5%	0.5%
Overall system design, including multi-pressure systems	50%	9%	4.5%
Reducing frictional pressure losses	50%	3%	1.5%
Optimising certain end use devices	5%	40%	2.0%
System operation and maintenance			
Reducing air leaks	80%	20%	16%
More frequent filter replacement	40%	2%	0.8%
Total			**32.9%**

(1) % of CAS where this measure is applicable and cost effective **(2)** % reduction in annual energy consumption **(3)** Potential contribution = Applicability *Reduction

[1] Compressed Air Systems in the European Union: Energy, Emissions, Savings Potential and Policy Actions.

[2] Data obtained from BCAS's statistical data provided by its membership base. Information includes screw and vane compressor data, plus a pole of BCAS members on the size of the oil free, piston, turbo and blower markets.

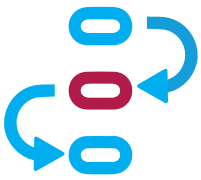
[3] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/853753/QEP_Q3_2019.pdf

[4] Compressed Air Systems in the European Union. Energy, Emissions, Savings Potential and Policy Actions. Peter Radgen and Edgar Blaustein (Editors: Note that the potential for savings is less than the sum of the savings for individual measures. The total possible savings must be calculated as a product of efficiency gains. It should be considered that the efficiency gain of each measure acts on the residual compressed air system energy consumption.

bcas TASKFORCE

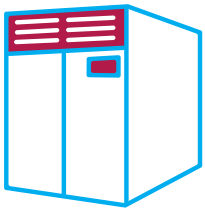
Your essential guide to compressed air energy savings

Change behaviours



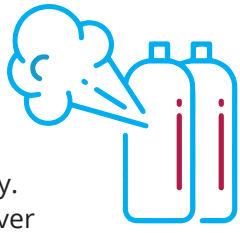
Many actions will require elements of maintenance or equipment/system upgrade, but the human element should not be overlooked.
You can make substantial efficiency improvements by implementing new processes and encouraging staff to use compressed air more efficiently and safely.

Specify correctly



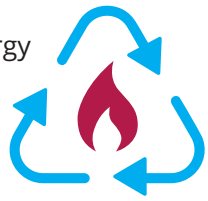
If you are considering upgrading your existing compressed air system, always speak to an expert. Our BCAS members can advise on the best equipment and system for your needs. This could include incorporating fixed and variable-speed drives or a combination of both as well as efficient downstream equipment.
Where suitable, sophisticated control systems can help proactively manage the supply of air.

Fix leaks



Reducing air leaks is the single most important energy saving measure you can make.
An ongoing leak test and repair programme will save you money. Just one 3mm hole could cost over £600 a year in wasted energy. A leak survey can help you to size the issue – and to tackle the largest leaks first.

Recover heat

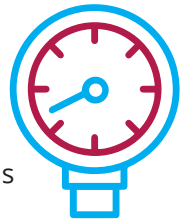


As much as 95 per cent of the energy consumed by a compressor is converted to heat and, unless captured, will be wasted to the atmosphere. Many manufacturers offer heat recovery systems, which can often be retrofitted. This allows you to recycle this excess heat; re-directing the hot oil to an oil-to-water heat exchanger.

Design a system

A compressed air system is just that; a system, and every element of it impacts on its energy consumption. When discussing efficiency and the potential savings that could be realised, it is important to take a full, system approach, – from generation to air treatment to distribution and finally, the point of use. Why not have a compressed air system assessment in line with ISO 11011:2013.

Control better



Reducing pressure at the point of use, switching off compressors when there is no demand for air and installing energy management systems can all help you identify wastage and take action.

Manage air downstream

Treating air to remove dirt, water and oil is necessary but can use a lot of energy. Your process is likely to only need a proportion of the compressed air to be treated to a very high purity. In these cases, excellent savings are achievable be treating all the generated air to the minimum acceptable level and improving the purity (quality) to the desired level at the usage point.

Improve maintenance

Low cost, regular maintenance will help retain low leak rates and reliability of equipment. You should also consider a policy that specifies that energy efficient options are purchased when replacing all equipment – whether it is a basic drain valve, the use of genuine spare parts through to the actual compressor unit itself.

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