



HVAC Energy Saving Upgrades

Save energy, save money

Energy saving experts

Specialists in HVAC and building management



With more than 40 years' experience, Airedale is highly skilled in providing flexible and efficient cooling solutions and building management systems to a broad range of sectors including retail, leisure, health, education, banking, telecommunications, industrial, data centres and government.

Airedale offers an extensive range of control systems that deliver intelligent optimisation for existing plant equipment and monitoring of building services, as well as a variety of system and component upgrades specifically designed to improve building efficiency.

As the UK's leading designer and manufacturer of an extensive range of chillers, precision air conditioning products and IT cooling systems; Airedale understands the importance of business critical cooling and also recognises the significance of developing products which are even more energy efficient. Through a wide range of products and using the latest technology; Airedale delivers bespoke solutions which provide increased efficiency, system reliability and reduced operating costs.

DID YOU KNOW?

1kW
power saved every



= £876.00*
PER YEAR
Equivalent to 4 tonnes of CO₂

*£0.10/kWh

Save energy, save money

There's a simple business case for being more energy efficient. In short, reducing energy consumption, reduces energy spend. Therefore, saving power provides a good financial opportunity for most businesses and can be one of the simplest ways to improve your business' profitability.

54%

of the energy used to produce electricity is lost by the time it arrives at a UK business or home where further losses occur (Less Waste More Growth, 2015).

The Carbon Trust estimates that UK businesses needlessly waste up to £1.6bn every year on energy that could have been saved through upgrades to heating, lighting and energy saving policies.

15%

Most businesses could reduce their energy consumption by up to 15% by implementing energy saving solutions.

With energy incentives and government legislation coming into force, businesses are being made to do more to reduce their energy consumption. The Energy Saving Opportunity Scheme (ESOS) is one such regulation that has had a major impact on UK businesses.

DID YOU KNOW?

For many businesses, a 20% reduction in energy costs represents the same bottom line benefit as a 5% increase in sales.

(The Carbon Trust)

What is ESOS?

Is your business affected?

The Department of Energy and Climate Change (DECC) has recently implemented the UK Energy Saving Opportunity Scheme (ESOS) in response to the EU directive. This came into effect in December 2015 and is designed to lead to greater energy efficiency, cost savings and carbon reduction in the business sector.

All large UK businesses (250+ employees or with a turnover of £42m+ and an annual balance sheet of £36.5m) are affected by ESOS regulations, which propose that organisations must undertake an energy audit every four years. The government has predicted that 7,300 UK businesses are affected by ESOS, which covers more than 200,000 buildings, 10,000 industrial plants and accounts for 35% of total UK energy consumption (edie.net).

Save up to
£1.9bn

Long term, the Carbon Trust estimates that businesses could save up to £1.9bn from 2015 to 2030 through the implementation of ESOS.



How to become ESOS compliant?

Businesses are being urged to go beyond compliancy and to take advantage of the real opportunities and savings that are possible with ESOS.

ISO 50001

Gaining ISO 50001 accreditation (Energy Management System) ensures that you are fully ESOS compliant.

ISO 14001

An ISO 14001 (Environmental Management System) certification does not guarantee compliancy; however, evaluating energy usage as an environmental impact provides a good foundation for organisations to become compliant.

GREEN DEAL

If a business is part of the Green Deal scheme it will have met the requirements of the ESOS scheme. The Green Deal scheme is a government initiative designed to help businesses to employ more green technologies in their properties.

BS EN 16247-1

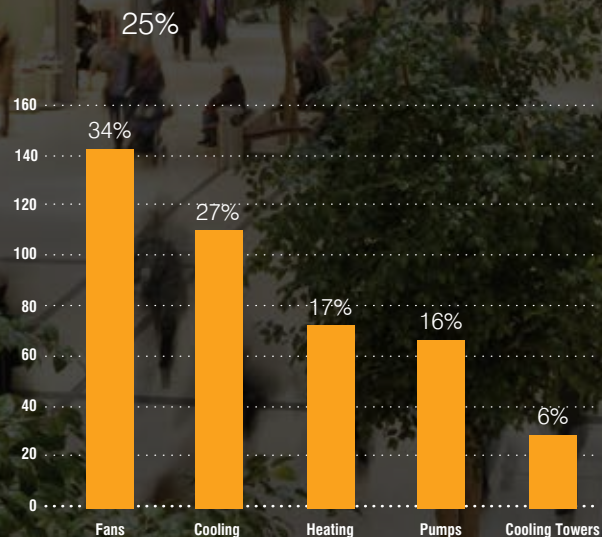
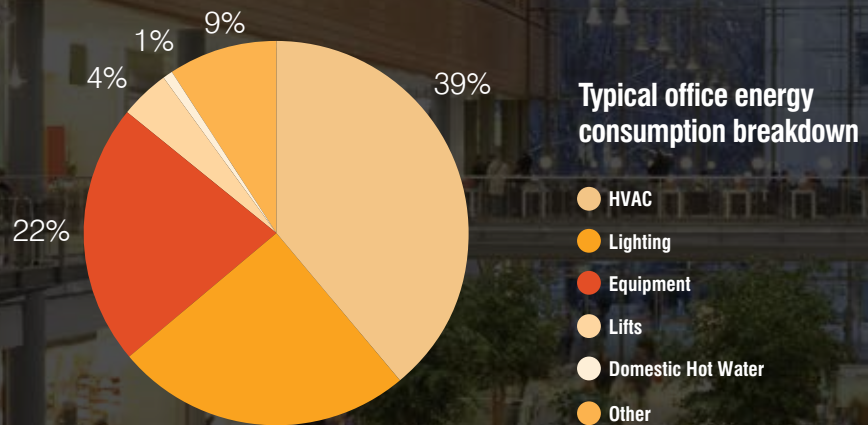
Using BS EN 16247-1 (Energy audits) will ensure that energy audits undertaken are of a good standard to produce results with progressive actions that can be implemented at a company's own individual pace, helping them to achieve ESOS compliancy.

HVAC equipment

Optimise your cooling system

As energy costs continue to rise, operating costs for energy hungry buildings also increase. For many businesses, reducing these costs is a priority and with energy saving policies such as ESOS becoming compulsory, energy reduction has become increasingly important. However, companies frequently overlook energy saving techniques which can make a significant difference to their energy consumption.

Building HVAC systems in particular often account for up to 40% of a commercial building's energy usage. From 2020, the energy consumed by air conditioning systems in commercial buildings is set to double from current levels. However, simple improvements to the efficiency of existing HVAC systems can offer considerable energy and CO₂ savings, reduce costs and improve the working environment.



Typical HVAC equipment energy consumption breakdown

y axis: MJ/m²

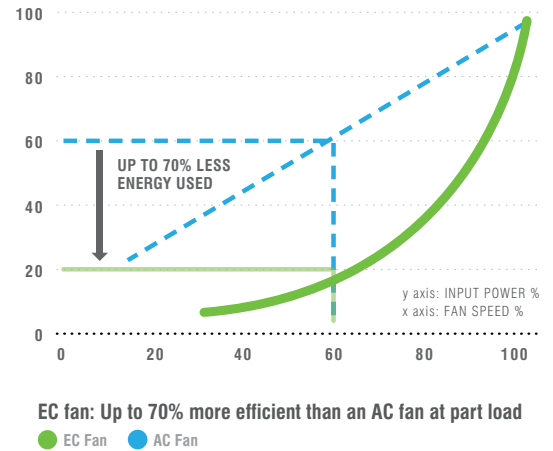
HVAC upgrades

Taking efficiency even further

EC fans

Replacing AC fans with EC fans allows optimisation of cooling systems for ultimate energy efficiency, potentially reducing energy usage by up to 70%.

EC fans offer enhanced control and provide the same output for less input. They are fully compatible with most systems and units, meaning straight forward, cost-effective upgrades can be carried out with minimal disruption.



In a typical office, air conditioning can account for approximately 40% of annual electricity consumption.

Benefits of EC Fans

- Up to 70% potential energy saving
- Continuous, integrated variable speed control matched to load requirement
- Direct drive motors for maintenance free operation
- 50% more efficient than previous generation fans
- Reduction in noise levels

Why upgrade with Airedale:

- Aim to achieve a payback period of <2 years
- Free initial survey
- Full installation service
- Service plans available



Delivered savings

Customer	Units	Fans	Power Saved (kWh)	Energy Saved (p/a)	Cost Savings (p/a)	CO2 reduction (tonnes p/a)	Carbon reduction (tonnes p/a)
BAE Warton	68	125	2,231,002	73.10%	£345,204.00	416.26	113.53
Marsh Data	17	33	1,671,345	60%	£98,287.20	83.57	22.79
Victoria & Albert Museum	4	4	47,304	60%	£7,358.00	61.58	16.79
Virgin Media Bromley	2	2	31,536	62%	£3,152.80	16.49	1.2

Other upgrades available

Other simple energy efficient upgrades and retrofit services for HVAC systems currently available include:



Electronic Expansion Valves

The use of Electronic Expansion Valves (EEVs) in cooling units and condensers reduces the need for high head pressure, which can result in an energy efficiency ratio (EER) increase of 30%. EEVs provide stable, fast and precise control of superheat and can be used in all types of unit.



Inverters

Installing inverters to motors allows precise control of motor speeds, which can be ramped up or down to match load requirements. This ensures that the only energy used is that which is needed.



Controls and BMS replacements

Upgrade to the latest software platforms to improve system optimisation. The latest hardware and unit strategy can be installed on existing equipment to ensure system reliability, enhanced performance and increased control.



Variable speed drives

Installing variable speed drives allows control of fan and pump speeds which can help to reduce energy consumption and costs by enabling the output speed of the motors to match load requirements.



Refrigerant

With some refrigerants being phased out due to their environmental impact, a refrigerant upgrade will ensure that you are fully compliant with any new legislation implemented. Refrigerant upgrades help to increase system efficiency which will also save you money.

A 10% loss in refrigerant charge = 20% increase in operational costs



Compressors

Maintaining or better still, upgrading compressors can save vast amounts of energy. Compressors can be precisely specified for individual applications and offer variable speed, which can be matched to load requirements, meaning the only energy used is that which is needed.

Faulty/leaking compressors result in wasted energy. A 3mm leak can cost more than £700 p.a



Pumps

Upgrading and selecting the correct pump for an application and avoiding oversizing can lead to considerable energy savings. Again, pumps can be matched to demand, therefore using only energy required.



Sub metering

Sub-metering and collecting energy data enables system inefficiencies to be highlighted, investigated and eliminated. Understanding energy usage by system components means, performance targets can be set and monitored regularly.

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