

How to carry out a basic energy audit



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The principle aim of an energy audit is to identify where energy is used across an organisation, how equipment is being controlled and whether there are opportunities for savings to be made.

In most organisations, energy is one of the controllable costs and an area which has significant environmental impacts, particularly through the generation of carbon dioxide and other greenhouse gases.

Keys steps to carrying out an energy audit

- First review your energy bills, delivery invoices and any sub-metering data. Looking at these will help you to identify what your principle costs are and whether there is any out of hours use, etc.
- Walk around the site and make sure you get an understanding of all the key processes and energy using equipment. Speak to all the relevant people within the team who have a knowledge of how processes are carried out and whether there is any opportunity for savings or improvements to be made.
- Ask yourself and colleagues: Is the equipment necessary? Are controls working correctly/ideally located? Is the equipment grossly oversized? Are there energy efficient alternatives?

How much energy does my equipment use?

Energy usage (kWh) = power rating of the equipment (kW) x time used (hr). (For example, a 150-Watt light operating for two hours will consume 300 Wh, or 0.3kWh.)

Some equipment may use more than one fuel, for example a gas boiler consumes both gas and electricity for the pumps, fans and control systems. It is fine to disregard relatively trivial energy consuming equipment.

Consider the following areas:

- Lighting - are there opportunities for this to be improved or upgraded to low energy equivalents?
- Heating – are there opportunities to reduce energy use by improving heat delivery, upgrading equipment to more efficient alternatives or improving controls?
- Building fabric – are there draughty doors and windows which are wasting heat? Are roof, wall or floor insulation installed and if not, would this be practical?
- Manufacturing or process equipment – is there elderly equipment which needs to be upgraded to more efficient models or inefficient processes which could be streamlined to achieve energy savings?

Act upon the audit findings

- Management must be committed to the whole process, including clearly demonstrating this through resource allocation, and empowering people with a willingness to implement change.
- Consider obtaining more detailed energy data via installing dedicated sub-metering.
- Evaluate the potential savings and capital costs.
- Implement improvements and assess outcomes.
- Aim for continuous improvement.

Further information is available on the following websites:

www.carbontrust.com

www.gazprom-energy.co.uk

