Introduction

Most businesses could use less energy and make significant savings by a few simple actions. This chapter will help you get started by focusing on general housekeeping tips that will apply to almost every business. In later chapters we will focus in on energy saving tips for particular utility systems that are used in most manufacturing processes.

In the Office

- Save energy by switching off computers, monitors, printers, photocopiers and other equipment at night and weekends.
- Lighting can account for 50% of the money spent in an office on electricity. Encourage staff to turn off lights when they leave a room and when they go home at the end of the day.
- People often prefer to work in natural light. Make sure windows and skylights are cleaned at least once a year.
- Replace tungsten bulbs with compact fluorescent lamps – as well as saving energy they have a longer life.
- Slim-line (26mm) fluorescent tubes use less electricity and are cheaper than the older 38mm tubes.
- Try to put equipment such as photocopiers in a naturally ventilated area – this will avoid air conditioning having to work hard to compensate for the heat from the machine.
- Use timers and zone controllers for heating, air conditioning and lighting to reduce consumption in unoccupied areas.
- Stickers and posters should be posted on staff notice boards to draw attention to energy efficiency initiatives and programmes.
- The maximum recommended heating level is between 20-23°. For each extra 1°, costs rise by 8%. Ensure the heating set-point is set to an appropriate temperature.
- Opening windows or doors if the heating is on wastes money. Turn down the heating instead.
- Set thermostats and radiator valves correctly and check they are in a sensible location – not somewhere too draughty or unusually hot or cold.
- Blocking radiators with furniture reduces their output and takes longer to warm up the room.
- Draught-proof windows and doors.
- Un-insulated pipework wastes heat and therefore energy.
- Examine whether the heating system can be shut down during the summer months.
- Portable electric heaters are expensive to run, so should only be used as a last resort – add a timer to switch them off automatically if they must be used.
- Heating costs can increase by 30% or more if the boiler is poorly maintained. Remember to regularly check your system for leaks too.
- Maintain the hot water supply temperature in the range of 50-60° for general washing purposes. Excessive water temperature will result in waste of energy. Supply temperature can be adjusted to the high side of the range 50-60° in winter, and vice versa in summer.
- Use spray nozzles in wash hand basins to reduce hot water use.

In the Factory

- Reduce the heating in areas, such as store rooms, which need less heat. If your heating is timed, make sure it corresponds to when the building is occupied.
- Don't heat an empty building when you are on holiday or when the factory is shut down – reduce the thermostat temperature to frost protection mode.
- Avail of free heating where possible by utilising waste heat recovery from equipment to pre-heat other material.
- Avail of free cooling where possible with outside air in winter to reduce costs and increase efficiency.
- Minimise the opening of cold store and freezer doors.
- Consider point of use heaters if water is currently heated by a space heating boiler.
- A fluorescent tube uses over 500 times more energy in 15 minutes than it takes to restart it – switch it off if it's not needed.
- Clean light fittings once a year.
- Do not light unused or locked areas.
- Fit time clocks with photocells to cut costs, or fit movement sensors for security lighting.
- Turn off or turn down equipment when not in use.
- Reduce idling time of plant and utilities during period of non-production.
- Use better control of set points and comfort margins in process and utility plant to reduce costs.
- Consider moving processes to night-time where possible to avail of cheaper night-rate electricity.
- Old equipment is generally less efficient than new equipment. Consider replacing equipment where major repairs are required.
- Raise operator awareness of the need for energy saving in the factory.
- Install electricity meters for monitoring the energy used by major loads.
- Carry out preventive maintenance work regularly (in accordance with the manufacturer's recommended instructions) in order to improve operating efficiency and reduce equipment failure rate.
- Conduct energy audits annually, to indicate the energy use profiles and highlight significant changes in energy consumption in key areas.