Energy Efficiency

We are all guilty of complacency with regard to our energy consumption and complain about margins when input costs go up.

Energy costs are soaring and are a going to continue to increase. Energy is a significant element of overheads, so now is the time to take a long hard look at what you are using and what you are wasting. Action might actually save you more than you realise?

Some areas of energy efficiency that might be considered:

Electricity:

Are you on the right tariff for your current requirements?

Do you pay a maximum demand charge?

A maximum demand charge is sometimes made against on both availability and actual demand with the latter being against the highest demand in any ¼ sometimes ½ hour period during the charge period.

If you do, is it set higher than you actually use?

If you do, is it set higher than you need?
Can you reduce the maximum demand by phasing in the start up of larger motors which have a higher demand in the start up phase than when they are fully run up.

WARNING.
Members should be cautious when agreeing the availability, if you exceed the agreed level the supplier may well impose punitive charges and penalties. It is possible to have either an audible or visual alarm fitted that is triggered when the upper limit of the available maximum demand is in danger of being exceeded. This would allow you to take corrective action.

If you are on a three phase supply is your supply balanced? This can easily be checked by a qualified electrician.

Power factor correction should also be investigated, once again take advice from a qualified electrician.

Shut down any motors, in particular the larger ones such as extraction fans, when they are not in use such as at lunch (dinner) time.

Machines should be switched off when not in use, not only is it illegal to leave them unattended (with a few exceptions), but they are consuming power.

Another overlooked high cost resource is compressed air; frequently the compressor is left running even when not required. Check for leaks in the compressed air ring main and for open ended blow down pipes. Not only are the later illegal, but they cost a fortune to run. Any wasted air is costing you money.

Modern electric motors are far efficient than their older counterparts. I am aware that there are a large number of old machines in use still with their original motors, not only does the power output fall with age, the windings on some of these motors are highly inefficient and in some cases over size to actual requirements. Modern machines, with a few exceptions, are supplied with motors which have a HP rating to suit the maximum cut (depth or/and length), very often this capacity is not required or used therefore more power is being consumed than necessary. Once again consult an electrician.

Lighting is often left on in areas where no one is working either because it is not possible to isolate the area, but also through laziness. By keeping light reflectors clean the illumination will be improved thus making it possible to consider lower wattage bulbs or tubes. With regard to fluorescent tubes, some types deteriorate and lose output with age, be mindful of this. In some premises light bulbs are used in many areas, consideration should be given to replacing any of the old type tungsten bulbs with the more modern low energy bulbs; they are expensive, but they last longer and use less power. The most common places for light bulbs to be in use are in the toilet facilities and in store rooms, frequently people switch the light on upon entering and forget to switch it off on leaving, the light can be left on for days at a time! Not only is this an ideal place for low energy bulbs, but there is a case for timer switches.

Off – Peak electric supply should be installed for any processes which run overnight, such as charging fork lift trucks.

Gas:

Many companies use gas for heating and in a few cases for processing. As with electricity members are advised to shop around for the best deal on supply. Larger users of gas should be mindful of the fact that whilst they may not be aware of it they could be on what the suppliers call an interrupted supply; that is to say if there is a problem with availability they could have their supply cut off. All members who use gas should revue their contracts to find out if this clause applies to their supply, there is very little that they can do about it, but at least they will have the opportunity to formulate contingency plans.

Gas heaters should be well maintained with particular attention to the burner(s) any loss of efficiency will increase the amount of gas used.

Consideration should be given to the temperature set on the thermostatic controls large savings can be made by turning the thermostat down 2 degrees. Consideration should also be given to protecting the thermostat(s). I speak from first hand experience, one employee at a factory I managed persistently turned the thermostat up to 25 C, we had to protect the setting by encasing it in a locked steel mesh box.

Heat loss through lack of insulation is always an area worth investigation, but in my experience the biggest loss of heat is as a result of dust/chipping extraction which has an external collection point; the air is being sucked out as fast as it is being produced. Internal filtration systems are far more efficient since they re-cycle the warm air into the workplace

Oil.

All of the points listed above relating to Gas apply equally to Oil. However, those members who use oil should consider buying their oil in bulk during the summer when prices for heating oil are usually much lower.