Tools to help you plan and record
(and remember to celebrate success)

The steps above will help you decide what actions to take. You also need to decide who will be responsible for getting the job done. Here is a simple way to plan this.

Example action plan

Investigation	Action needed	Desired outcome	Who's responsible/ deadline
What is our baseload and how can we reduce it?			
What is our energy consumption during production and how can we reduce it?			
What are our energy reduction targets?			
Are our efforts to reduce energy working?			

Example recording chart

Who	Action taken/when	Impact

Remember
Set your energy reduction targets wisely and you can reduce your site's energy consumption by 20% or £100,000 a year!

HOW-TO GUIDE

Set clear energy saving objectives

HOW-TO GUIDE

What this guide is about

This guide is designed to complement the energy management toolbox talk. It focuses on:

- Why it makes sense to have energy saving targets
- Practical steps to create an energy reduction action plan
- Tools to help you plan and record

The purpose of the guide is to help you performance manage energy reduction through knowing how much energy you use, setting targets for reduction, and publicising success and learning from what does not work. The guide will help you to create a site specific energy reduction action plan. Keep the guide as a reminder for yourself, hand it out to the person on your site who may take charge of this action plan, or simply write on it to keep a record of all actions taken.

Why it makes sense to set energy saving targets

- Determining where, when and how energy is used on your site helps you to know where to improve control; targets help you measure progress.
- Controlling energy use costs little, but can save up to 20% of your energy costs.
- Working with your site personnel to create an energy reduction action plan helps ensure that the targets are believable and owned by more people than just the site manager! Involving others in planning and generating ideas also enhances awareness and energy saving behaviours – like looking out for machines that can be switched off and finding new ways to save energy on site.

Practical steps to create an energy reduction action plan

Every site's action planning will differ. Please consider the steps below as a suggested route and adapt the actions under each step to your site's specific needs.

Before you start... A good preliminary step is to create a team of 'energy champions' to help you do the planning. Their involvement will make your plan better – more people on the site will be involved, more energy saving ideas will come to the surface, the plan is more likely to be feasible, well-communicated and followed up on.

Step 1: Work out where and how much energy your site uses.

Establish and record your baseload data for the site – your baseload is the energy used in times of no production. You can measure this through a half hour metering system (HHM), which shows the energy used every half hour, giving you information about machines or lights or anything that is left on when the plant is shut down.

- Establish your specific energy consumption – this is how much energy is used to produce one unit of product (or the energy consumed during production).
  - Measure energy use during a number of production runs.
  - Compare and keep a record of when and why it rises and falls – just as a longer car journey requires more fuel than a short one, a larger production throughput will need more energy than a small one.
  - Establish how much energy is needed per unit of product (kWh/tonne) by monitoring both energy consumption and production throughput.

- Know how much energy is used by electrical equipment.
  - List all electrical equipment on site.
  - Monitor how much energy each one uses over a set period of time.
  - Record which equipment uses the most energy, whether similar pieces of equipment use different amounts of energy, and if so, why. Compare actual energy used with the manufacturers' benchmarks to ensure equipment is functioning properly.

Step 2: Set clear targets to reduce energy consumption.

- Aim to reduce your baseload.
  - Compare the energy used during long shut down periods like Christmas and New Year with energy used during normal shut down on weekends.
  - Explore what causes the difference between the two.
  - Based on what you learn, identify actions to reduce your baseload and set a target reduction number in kWh/tonne. Targets will vary by site. Example actions you might take are: ensure heating and lighting is off out of production periods, make sure bitumen tank heating timers are functioning correctly, ensure dust control units are switched off when not operating.
- Aim to reduce energy consumed during production.
  - Think about the whole process and identify what needs to run during production and what does not.
  - Based on what you learn, identify actions to minimise equipment running during production runs and set a target reduction number in kWh/tonne to reduce the site's specific energy consumption.

Step 3: Use regression analysis to measure your reduction performance.

- Plot a simple X-Y scatter plot with energy and production data over the same period of time.
- Notice that there is a trend on the data set. Try to draw a line over that trend. This will show you your average consumption for each unit of production throughput, as well as your average baseload – see top diagram on the right.
- Establish a baseline period consisting of a representative data set and compare any future production throughput and its relevant energy use with it. This will show your energy performance compared with your average performance over your baseline.
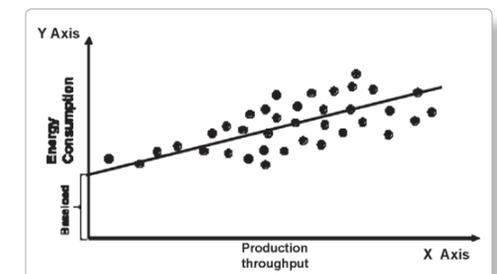
Step 4: Publicise your performance.

- Publicise energy performance data for the site and ensure everyone at the site understands the energy consumed at the site. The performance reporting should show how this relates to the targets set for the site.
- Performance reporting should show daily or weekly data for the recent period to help people understand that the way they operate affects energy performance. Your report should also have a longer term trend showing the overall performance, and the savings achieved through improved energy performance.
- Energy performance should be closely linked to energy awareness! Use your team and your performance to raise your colleagues' energy awareness and interest in improving the site's energy performance.