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
How efficient is our daily production activity? Where do we have waits or bottlenecks in our process and how can we fix them?			
What is the most energy efficient SOP for starting up and turning off the equipment?			
Do we have too many clean-outs and overspills? If so, what steps should we take to reduce them?			
What amount of product makes it worth starting up the plant when it is already shut down?			

Example recording chart

Who	Action taken/when	Impact

Remember

Just reducing the run time of an average sized exhaust fan by 10% can save you £2,500 a year! How much could you save with full optimisation?

HOW-TO GUIDE

Is your site running as efficiently as it can?

HOW-TO GUIDE

What this guide is about

This guide is designed to complement the toolbox talk on running your site at optimum efficiency. It focuses on:

- Why it makes sense to optimise your site
- Practical steps to make your site more efficient
- Tools to help you plan and record

The purpose of the guide is to help you make a business case for running your site more effectively with fewer clean-outs and overspills, less unnecessary equipment use, and an energy efficient and cost effective procedure for deciding whether or not to start up your plant once it is shut down. The guide will help you create a specific site 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 run your site at optimum efficiency

- Whenever some parts of our plant are running in place, waiting for other parts of the process or waiting for a decision, energy is being wasted.
- Clean-outs and overspills can add up to 20% to the total energy cost of a site – remember, every tonne of stone which passes through the dryer has used approximately 9 litres of oil, which is wasted if the stone returns to the stockpile.
- Motors typically account for the largest element of electricity use – do not leave them running unnecessarily and ensure everyone knows how long a piece of equipment should be left running before turning it off.
- The energy cost of starting up the plant can be more than the value of a small run of product, especially if clean-outs are required.

Did you know?

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Practical steps to make your site more efficient

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.

Step 1: Minimise unnecessary running of equipment.

- List all equipment, when it needs to be on and for how long – look out for typical energy wasters such as:
  - Exhaust fans left on all day
  - Burners running for half an hour to warm up the filters
  - Mixer running all day.
- Create a Standard Operating Procedure (SOP) for start up and shut down operations for equipment like dryer drums and exhaust fans. The SOP should outline when each piece of equipment should start and when it should be turned off. In order to create the SOP, you may need to take temperature measurements to establish how long it takes for the drum to cool down or how long it takes for the filter bags to heat up.
- Decide how much time should elapse from the last mix before the plant is shut down, so there is no uncertainty or waiting around for the next order.

Step 2: Reduce clean-outs and overspills.

- Keep a record of the tonnage of clean-outs and overspills every day – this can easily add up to 10% of the total daily production and is almost all wasted energy.
- Calculate the daily cost of clean-outs, measuring the average fuel use per tonne.
- Investigate whether overspills are caused by the supplied aggregate containing too much aggregate of other sizes.
- Check that bin level indicators work accurately (and that they are regularly calibrated) so you can set the feed rates correctly.
- Ensure good communication with your customers so you can plan the production programme without having to change aggregate types repeatedly, avoiding extra clean-outs.

Step 3: Consider economic running

- Find out the cost of running the plant for a small load and whether it is more cost effective (or possible) to supply an alternative product, or supply from a neighbouring site.
- Calculate the overall cost of running a load, including the clean-outs at the start and finish, to determine whether it is cost effective to manufacture the product; then use this information to agree a bottom-line minimum quantity that makes it worthwhile to produce.