

Fact-sheet - How to start saving energy?



What is the objective?

The term “Energy” covers all types of energy sources: electricity, fuel used for on-site transport, energy for supply to equipment and boilers (e.g. coal, coke, wood, fuel-oil, propane, LPG); and other forms of energy (e.g. steam and compressed air)¹.

Why should a production site save energy?

- **Save money** using less energy and, in particular, anticipate the increase in the energy costs;
- **Reduce the depletion of non-renewable energy sources** the production site depends on;
- **Reduce the product carbon footprint**² (indicator that can be requested by the customer);
- **Increase the productivity per energy input** (improve the efficiency of the management of the production).



How to achieve this objective?

- **Step 1:** From the easier approach to the most pro-active approach, the factory can:

Educate employees	<ul style="list-style-type: none"> • Raise awareness about how the efficient use of energy can have positive impacts and encourage employees to identify problems and find innovative solutions to reduce energy use on-site.
Energy use assessment	<ul style="list-style-type: none"> • Determine the baseline energy use and identify where the most energy use is coming from. A factory might have low electricity consumption but a high fuel consumption to generate steam for example, so the focus should be on how to optimize the generation of steam to reduce the fuel consumption. • In most of the production sites, the high energy consumption is coming from the use of energy to run motors/machines, air compressors, air-conditioning/ventilation equipment, refrigeration, etc.
Inspection & regular maintenance	<ul style="list-style-type: none"> • Write a procedure for regular inspection of machines, pipeline and areas where steam/compressed-air leaks can occur and appoint a manager to be in charge of this "Leak detection prevention programme": he or she will be in charge of the inspection, the maintenance and the report writing. <ul style="list-style-type: none"> ➤ <u>Example</u>: insulate equipment operating at high temperatures and significantly reduce steam consumption. ➤ <u>Example</u>: regular maintenance keeps motors running efficiently and identifies problems before a breakdown.
Minimize energy use for lighting	<ul style="list-style-type: none"> • Consider to use more energy-efficient lighting systems. • Take advantage of natural light by placing work areas near windows. • Install occupancy sensors, so lights go off automatically in unoccupied rooms. <ul style="list-style-type: none"> ➤ <u>Example</u>: replace incandescent lighting with compact fluorescent lighting or LED lighting.
Improve efficiency and recover energy	<ul style="list-style-type: none"> • Identify all the opportunities to recover heat from hot water, hot air and condensate. • Improve the heavy machines (boiler and generator) maintenance and efficiency <ul style="list-style-type: none"> ➤ <u>Example</u>: the efficiency of the coal-fired boiler can be improved by prescreening coal, annual boiler burner calibration, insulating the boiler casing and doors, and installing automated oxygen trim controls on the combustion feed inlets³.

¹ Source: GSCP_ENVIRONMENTAL IMPLEMENTATION GUIDELINES - OCTOBER 2010

² Carbon footprint: according to the UK Carbon Trust, a 'carbon footprint' is "the total set of greenhouse gases (GHG) emissions caused by an organization, event or product.

³ Useful links with examples of good practices to save energy: [NRDC](#) & [GSCP](#).

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- **Step 2:** monitor and analyze the energy consumption data to **measure the energy savings achieved** after implementing the good practices as per the recommendations provided above (refer to the fact-sheet “Energy consumption monitoring”).



Common non-compliances

No inspection to identify steam/compressed-air leaks

No regular inspection of the steam and air-compressed lines to detect and fix leaks:



No proper insulation of the steam lines and poor maintenance

Steam lines not in good conditions so there is a risk of steam leaks in this ironing section:



No optimization of day light and lighting system

Picture on the left: The factory has installed tube lights all along the windows whereas the day light would be sufficient for the light intensity required in this production section. Picture on the right: lights never switched off in a storage area.

