CROSS.INNO.CUT

SAVING ENERGY IN PRINTING INDUSTRY

8th Newsletter

If you operate a small to medium sized printing business or copy house, from printed packaging manufacturers to producers of daily newspapers and other print media, then this article could help you to:

- ✓ save energy and money
- ✓ increase efficiency and profitability
- ✓ improve your environmental performance!

It provides practical and cost effective energy saving options that general managers, operational managers and facility managers can apply to save energy. Some actions offer immediate savings and other associated benefits while others involve an upfront cost that can be recovered within a few months or years.

The case of a packaging producer participation in CrossInnoCut

The company has already examined most of the mentioned cost cutting technologies and either adopted or rejected them based on a well structured assessment procedure. Nevertheless they undertook the Renewable Energy Action Plan process of CrossInnoCut project as the latest technological developments reveal cost cutting opportunities for them.

The total yearly energy cost for the company is 2,07 Million Euros broken down to 1,046 million Euros for Electricity and 1,024 million Euros for natural Gas. The company wants to consider the utilization of wood (120 tones/year) and solvent (100 tones/year) residues for cutting down its energy costs.

Benefits of saving energy

Improving energy efficiency can benefit your business and the environment by:

- reducing energy costs through actions such as purchasing more efficient equipment
- reducing the environmental impact of your business through minimizing energy-related greenhouse gas emissions
- extending equipment life, reducing operating costs and avoiding downtime through increased energy efficiency and improved maintenance regimes
- improving your business' reputation and providing a safer and more comfortable workspace.

Federation of Industries of Northern Greece

Aristotle University of Thessaloniki URENIO Research Unit

South-West University "Neofit Rilski"

Industries Association of Eastern Macedonia

Federation of Industries of Rhodopi

Industrial Association of Petritch

Union of Industry and Manufacture of Xanthi

Industrial Association Karjali

Federation of Industries of Evros

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Things to consider

Implementing energy saving actions may require forward planning and some changes to the way your business operates. For example:

- Proposed changes to machinery settings, lighting systems and other actions may need to be discussed with managers, workplace safety representatives, unions, insurers and suppliers to ensure that they will not negatively impact on security, working conditions or product quality (i.e. light and humidity levels).
- Employee training, awareness and management involvement is likely to be required to support the introduction of new equipment or processes and to provide practical skills that help to reduce energy.
- Ongoing monitoring of energy use is important to identify problems early and to measure (and reward!) improvements. Key performance measures, such as energy consumed per dollar of sales, can be used to gauge the cost of energy inputs and savings achieved across the whole business or for individual jobs or processes.

The Action Plan procedure examined two possible solutions a) the installation of a wood cracking boiler and b) the installation of a gasification system. Even though the investment needed for solution (b) is considerably higher and the technology involved more complex the action plan findings indicated a significant higher energy cost reduction. The company is currently in the procedure of finalizing the investment plan for the adaptation of a gasification system, which will utilize production residues for producing thermal energy.

The costs, savings and payback periods for the energy saving options provided overleaf are a rough guide only. They include estimates of up front costs such as capital, labor and installation, but do not include ongoing costs unless these are fundamental to the option itself (e.g. improved maintenance regimes).

The suitability and benefits of each option depends on the nature and size of the company and the scale of application. You should also check that they comply with local environment, safety and other requirements. Even if you have considered similar actions in the past, they may be

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more cost effective now as the cost of many technologies has gone down while the cost of energy has increased.

OPTION	COST	ENERGY SAVING	PAYBACK PERIOD
Review the need to operate emissions treatment devices (e.g. mist eliminators, electrostatic precipitators and afterburners) as air quality regulations can often be met without these or with intermittent operation during print runs.	0	**	Immediate
Review temperature settings of hot water systems (e.g. a 5°C reduction can save 3-5% in energy costs. For most purposes, 60°C is sufficient).	0	*	Immediate
Reduce air compressor operating pressure by 10% to reduce losses.	0	*	Immediate
Turn off air compressors and lights when not required. Add simple codes to light and power switches so that employees know which switches to turn off when not in use and which need to be left on.	0	*	Immediate
Manage and reduce press run time by minimizing set up time and idling during unproductive periods. Maintain logs of up- and down-time.	0	*	Immediate
Limit use of the vapor extraction system by connecting it to press operation. Reduce the need for vapor extraction by avoiding or minimizing solvent use (and thereby improving the work environment and reducing greenhouse gas emissions).	€€	*	1-2 years
Use gas where possible for drying and space heating purposes.	€€	*	2-3 years
Install motion-sensors in key areas to turn off lights when not required.	€€€	**	2-3 years
Maximize natural lighting. Skylights with light shafts can reach difficult areas. Clean skylights and lights to optimize efficiency.	€€€	**	3-5 years
Install timers on motors and drying equipment.	€	*	1-2 years
Fit variable speed drives (VSD) to extraction fan motors to facilitate operator control (potential for 20-40% of fan energy saving).	€	*	2 years
Install energy efficient globes and reduce line voltages. This is best done during a refurbishment.	€€	*	1-3 years
Improve building insulation, insulate hot water boilers, and enclose and ventilate heat-generating equipment. In colder months, use hot air from presses to supplement heating. Consider double-glazing of windows.	€€€	**	3-5 years

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