

PROJECT PARTNERS

EMSPI

Energy Management Standardization
in Printing Industry



Co-funded by the Intelligent Energy Europe
Programme of the European Union

ENVIROS

Czech Republic, is a leading consulting company providing assistance mainly in the field of energy, environmental and business consultancy.



FACTOR CO2

Spain, is well recognized for its knowledge on developing and applying climate change policies, mitigation and energy efficiency assessments.



Factor
Ideas for change

INNOWISE

Germany, is a research & consultancy company with special expertise in innovation management, knowledge & technology transfer.

iNNOwISE
research • consulting

GRAKOM

(Graphic Association Denmark), Denmark, is the principal organisation for Danish graphic companies composed by graphic production companies producing printed and electronic products.



DIENSTENCENTRUM

The Netherlands, supports around 400 media enterprises per year (mainly SME's) in their management of their business. Dienstencentrum is also coordinator of the EMSPI project.



RESULTS OF ENERGY MANAGEMENT IMPLEMENTATION

The work within the EMSPI project has led to the successful implementation of energy management systems (EnMS) in 100 printing companies in five countries (Denmark, Germany, Netherlands, Czech Republic and Spain).

The results for achieved energy savings achieved are good, leading to savings of approximately 40,000 GJ during the duration of the project. As regards the potential CO2 reduction the result so far are also very promising: this seems to be heading for more than 5,000 tons of CO2.

When we take into account the possible energy savings identified and included in the action plans of the companies, we will reach even higher savings. Assuming that part of the energy saving measures identified in each of the companies can be implemented, we will reach the following results for the period 2013- 2017:

- Energy consumption reduction of 127,000 GJ (14% reduction in 2017 compared to 2013)
- Reduction of 13,300 ton of CO2 (14% reduction of emissions).
- Energy cost savings of 2,140,000 € (12% reduction of costs)

The printing companies interested in implementing the Energy Management System were able to choose one of the following options

- Basic: Designed as a first step in EnMS. For organizations that cannot develop all the requirements of the ISO 50001 standard
- Full: Leading to a complete implementation of the EnMS, assuming all the requirements of the ISO 50001 standard. For highly committed organizations.

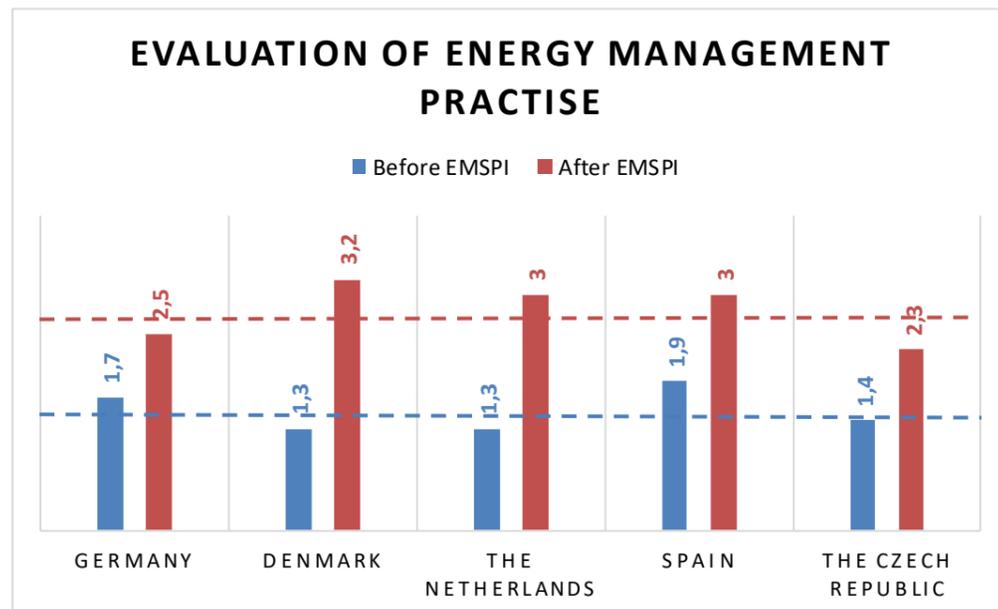
The basic version was open to companies of up to 20 employees only (categorized as small). In the end, only 16 out of the 100 companies adopted the basic version. Among the other 84 companies, a significant number were small companies.

THE ENERGY MANAGEMENT PERFORMANCE

The printing industry in all five countries was evaluated at the beginning of the project as part of the energy diagnosis document. By the end of the project a similar rating was performed based on the 100 printing companies participating in the project. The rating was performed by assessing the performance of printing companies in eight categories on a scale from 1 to 4, where 4 represents best practise.

For more information about this project and deliverables, visit the website:
www.emspi.eu. You can also find and download the reports at the website.

The diagram below shows the situation, before and after the EMSPI project. The average score for all companies increased from 1.5 before the project to 2.8 after the project.



The overall conclusion of the rating is that the companies participating in the EMSPI project do perform well in relation to the parameters where they have simple procedures or tools to support them in the work with EnMS. The EnMS system manuals that were developed through EMSPI contributed to this high score. When it comes to parameters that require an internal prioritization or adaption to the company specific conditions there is in general potentials for improvements. This is particularly true in relation to working with goals and action plans focusing on the daily production but also in relation to maintenance, monitoring and supplier management.

MEASURES IDENTIFIED

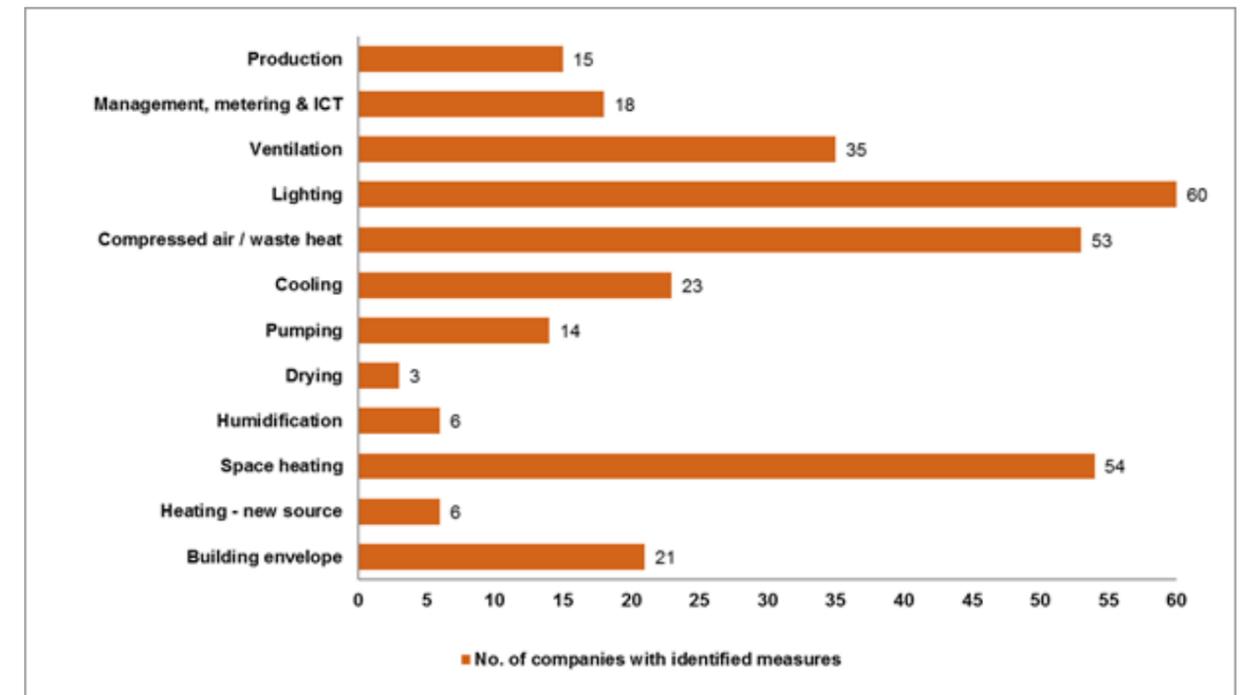
In all the participating companies an energy review was carried out with the aim of identifying the potential for energy savings. The figure below shows typical energy saving measures and to what frequency with which typical energy saving measures were identified among the 100 companies involved. As shown in the following graph, typical energy saving measures proposed throughout all five countries were in relation to lighting, space heating, compressed air and ventilation.

Lighting measures were most often identified by energy experts from the partner organisations. Savings in lighting is extremely relevant for printing companies due to the technological development in this area during the last few years. Most companies have older light installations which they can often only control by switching the light on and off manually. New light installations use approximately 40 - 60% less electric energy compare to the old installations, depending on operation time. Furthermore, lighting control in relation to daylight or activity can reduce the energy consumption even more.

Compressed air is the most demanding technology in terms of electric energy consumption. Used compressors are often old, inefficient, have a high specific demand and the waste heat from compressors is not used. Most existing compressors can be adapted to or be supplemented with standard heat recovery equipment. New compressed air systems represent an excellent source for heat recovery and could improve overall system efficiency. Waste heat can be used for direct space heating or hot water heating. Currently only few companies have utilised all these possibilities.

Ventilation: Some companies have an old ventilation system installed which is not using heat recovery and the fan motors are not equipped with inverters (frequency control). Moreover, the old ventilation systems have limited options for regulation. Sometimes the system was designed for previously installed technology what has a different needs for ventilation (e.g. due to higher use of chemicals in production in the past). The current ventilation requirements are lower which means the system is oversized.

Space heating: Many of the heating systems are old, inefficient, thermostatic valves are not installed on radiators and sources of heat (boilers) are close to the end of the lifetime. An efficient system renovation is needed in a number of companies, both for offices and for the production plant.



CONCLUSIONS

To conclude, not all companies were convinced in the beginning that any energy efficiency potential could be identified or that there would be a need for the implementation of energy management. However, after gathering relevant energy data, a walk through the companies by energy experts, some measures could always be identified. So after this first visit, companies became far more open to energy management and its implementation.

From the evaluation of the implementation process, it appears most of the companies were satisfied with the EMSPI-developed material. It appears a large amount of participants is satisfied or very satisfied with the support throughout the implementation project. The participating companies also stated clearly they actually expect to achieve energy reduction and will recommend the EMSPI material to fellow companies. We can therefore conclude that the EMSPI project is on its way to be successful. That success has been achieved by the good contribution of the participating companies.

More information about the final results of the project can be found at: www.emspi.eu