Do Environmental Management Systems lead to new, cleaner Technologies?

Recently, a team of Slovenian researchers investigated the link between the Environmental Management System ISO 14001 and the introduction of new cleaner technologies in the Slovene metal and chemical industries. Their results show that the ISO 14001 standard is a very good way to move towards cleaner technologies.

In Europe, industrial production processes are one of the major contributors to pollutant emissions (such as greenhouse gases, acidifying substances, wastewater emissions and waste). Therefore, the reduction of industrial emissions is an important challenge for the European Union and for industry managers. In Europe, these emissions are regulated through the Integrated Pollution Prevention and Control (IPPC) Directive (Directive 96/91/EC), which compels some industries to obtain an emissions permit. However, not all operators are covered by this directive. Environmental Management Systems (EMS) such as the environmental management standard ISO 14001 can be used by the operators to implement the directive or to reduce their emissions by themselves.

A Slovenian team of researchers has recently explored the role of EMS in the introduction of new, cleaner technologies in some industrial sectors in Slovenia. They focussed on the metal and chemical/paper/plastic industries, which are the sectors with the highest percentage of certified ISO 14001 enterprises. In fact, more than 45% of the certified ISO 14001 firms are from these sectors. 60% of the firms provided information on the action undertaken to reduce their emissions. They also responded on the environmental factors improved and the degree of improvement and on the development mode of the new technology (R&D, investment in licensed technology). Finally, they stated their conviction that certification plays a major role in technology upgrade.

The main results of the investigation are the following:

- To improve their environmental performances, 60% of firms in the metal industry used both the introduction of new technology and the modification of older technologies. More than 50% of firms in the chemical and related industries chose to only modify the existing technology.
- 90% of the interviewed firms used technological changes to reduce their emissions.
- To improve technology, more than two thirds of the firms in the chemical industry used in-house R&D and 3/5 of those in the metal industry bought licensed technology.
- More than 70% of firms in the metal industry and about 50% in the chemical industry considered the ISO 14001 as a very useful tool for the introduction of cleaner technology. However, less than 10% of these firms thought that ISO 14001 is a necessary condition to promote and adopt new technology.

These results suggest that, to improve their environmental performances, industries prefer to adapt existing technologies than to switch to more recent and more environmentally-friendly technologies. However, some firms in the metal sector chose a compromise and mixed the adaptation of existing technologies and the introduction of new technologies.

The authors emphasise that the ISO 14001 standard is mostly considered as very useful by both the chemical and metal industries in their attempts to introduce new, cleaner technology and seems to create better conditions for the implementation of the IPPC directive by the relevant firms.

As the IPPC Directive had to be fully implemented since 31st October 2007, the understanding of the interactions between the EMS and the directive could enhance the implementation of a future environmental Directive for industries.

1For more information on the Directive, see http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31996L0061:EN:HTML.


Contact: radonic.gregor@uni-mb.si

Theme(s): Sustainable consumption and production, environmental technologies.

Opinions expressed in this News Alert do not necessarily reflect those of the European Commission.

To cite this article/service: “Science for Environment policy”: European Commission DG Environment News Alert Service, edited by BIO Intelligence Service.