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IMPLEMENTATION OF ENVIRONMENTAL MANAGEMENT SYSTEMS IN THE SLOVAK REPUBLIC

The human environment is always influenced by enterprise activity, which is mostly negative. The introduction of an Environmental Management System (EMS) can be an important step towards fulfilling the principles of sustainable development on a practical level. However, there are few ways of EMS implementation. Authors of the paper present and analyze possible approaches of EMS implementation in Slovak enterprises. According to this analysis possible development trends in the environmental management can be indicated.

Key words: Environmental management systems, ISO standard, pro-environmentally oriented voluntary tools, enterprise.

1. Introduction

Historically, companies have been confronted with various regulations regarding their emissions. These problems have always been closely related to living and working conditions at and around production facilities.

Prior to the 20th century, there was a long history of local regulations. Many cities prohibited dumping of waste in streets, canals or rivers. For example in the Netherlands, the first national law in this respect was the Factory law of 1975, which contained provisions regarding nuisances such as noise and odour [8]. However, simple answers were no longer satisfactory once it was no longer just waste that was criticized but also excessive resource consumption and the need of system approach became inevitable. Environmental management gradually emerged into a sophisticated environmental management system (EMS).

2. History of environmental management systems

EMS is a method designed to systematically improve the environmental performance of an organization. [4] It addresses the immediate and long term impacts of products, services and processes on the environment and is embedded in the organization's overall management structure. Results are achieved through the allocation of resources, assignment of responsibility and ongoing evaluation of practices, procedures and processes.

In the 1980s, more and more organizations systematically paid attention to environmental matters with the aim of reducing pollution and minimizing energy and raw material consumption. Guidance [7] was published to help companies setting up their own EMS. Environmental management systems were further devel-

oped in the early 1990s when ISO published its ISO 14001 standards leading to certification for an EMS.

In December 1996 the Technical Normalization Committee (TNC no. 72) entitled "Environmental management" was established by the Slovak Institute for Technical Normalization. In 1997 the first five standards of ISO 14000 were processed [6].

After final approval by the Office for Standards, Metrology and Testing, which took place in early 1998, these standards were included to the STN system. EN ISO 14001 which specifies requirements for environmental management is the basic technical standard for the implementation and certification of an EMS. Another document which allows voluntary participation by industrial companies is Council regulation EEC No. 1836/93 of 29 June 1993 "Eco-management and Audit Scheme" (EMAS). This regulation encourages organizations to voluntarily evaluate the environmental impact of their activities from the processing of raw materials to waste management.

In April 2001 a new review by the European Parliament and Council was released (761/2001/EEC), allowing voluntary participation in the program for environmental management and audit scheme (EMAS II).

The revised regulation was implemented to Slovak legislation by Law No. 468/2002 Z. z. "Environmental Management and Audit", as amended by Law No. 491/2005.

Historical development of the environmental management systems can be seen in Fig. 1.

For the most important changes brought by this review can be considered:

- the broadening of the EMAS scope all sectors and economic activities, including local authorities

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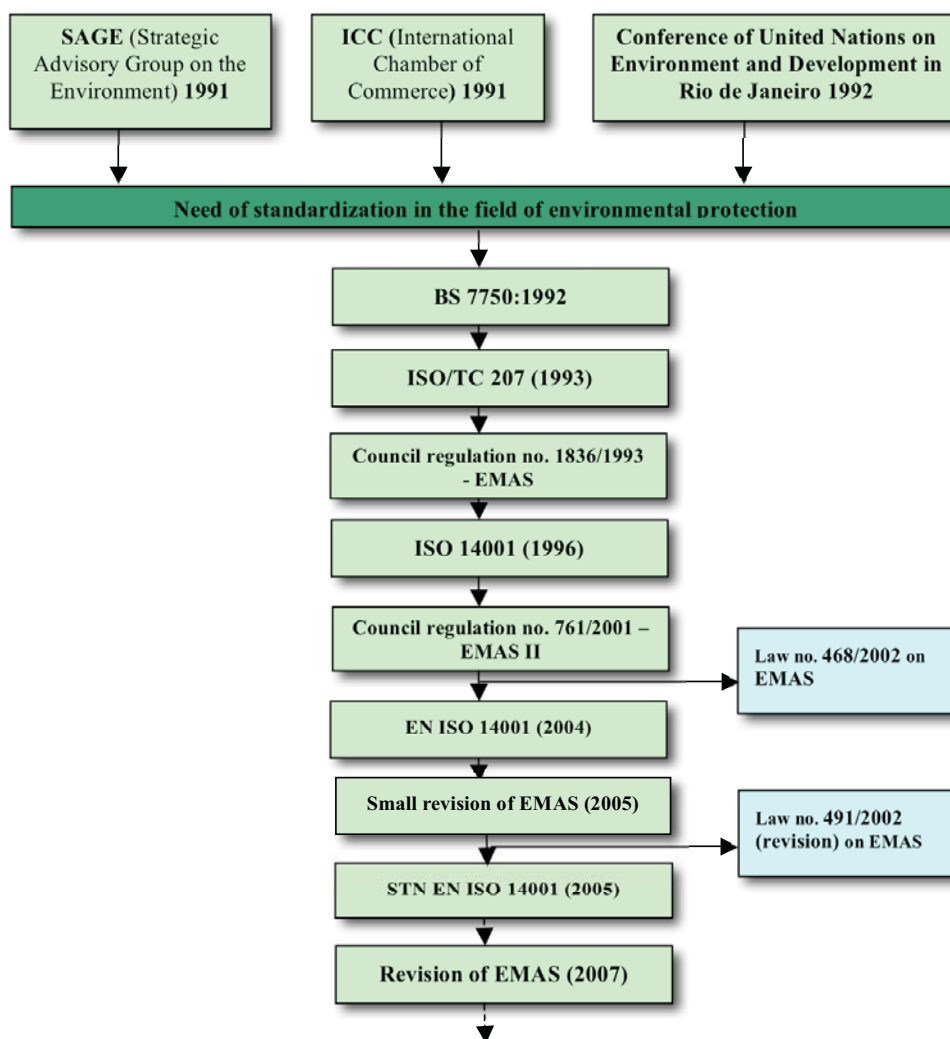


Fig. 1 Development of environmental management standards and regulations

- integration of standards such as ISO 14001, which facilitates the transition from ISO 14001 to EMAS and avoids duplication
- adoption of the EMAS logo, which allows registered organizations to promote their participation in the scheme more effectively
- employee participation in the implementation of EMAS strengthening the role of the environmental statement to improve the transparency of communication of environmental performance [1] between registered organizations and stakeholders and the public,
- more attention devoted to indirect environmental impacts such as capital investment, administrative decisions, planning, procurement [11].

2. State of Art in EMS Certification in Slovakia

The ISO 14001 Standard is the certification standard for EMS implementation and certification. As it is not an obligatory standard, it was designed in a way that can be applied to any size and

type of organization and type of organization taking into consideration various geographical, cultural and social conditions. Efficiency of the implemented system is verified by certification auditing. Certification auditing results are used by certification organizations in the process of issuing official certificates.

The significance and relevance of the voluntarily adopted standards by traditional polluters is increasing rapidly in the SR. This is shown by growing numbers of established and certified environmental management systems according to ISO 14001. Up to January 2009, 669 enterprises in the Slovak Republic received ISO 14001 certificate.

Number of organizations with certified EMS according to ISO 14001 is illustrated in Fig. 2.

A number of sources identify organizations in the SR with a certified EMS according to international standard ISO 14001. The current list of organizations is published annually in the Envi-

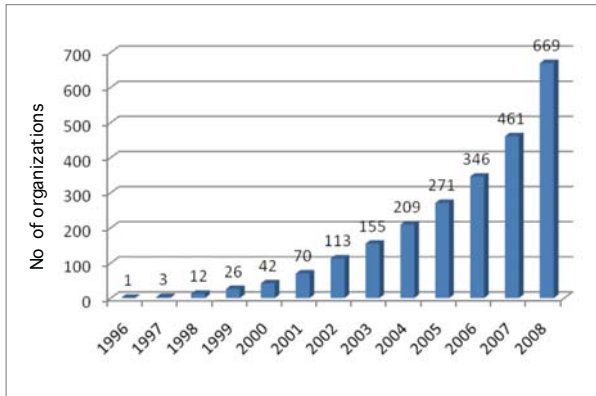


Fig. 2 Number of certified EMS according to ISO standard 14001 in the SR [10]

ronmental report of the Slovak Republic issued by the Ministry of Environment and the Slovak environmental agency (SAZP).

Fig. 3 shows EMS certifications in particular regions of the SR. The greatest number of companies with certified EMS is in Bratislava and the Kosice region. This situation is understandable because a disproportionately larger number of enterprises are in these industrialized areas where there is greater competition for customers and thus the likelihood that organizations will adopt EMS to gain competitive advantages.

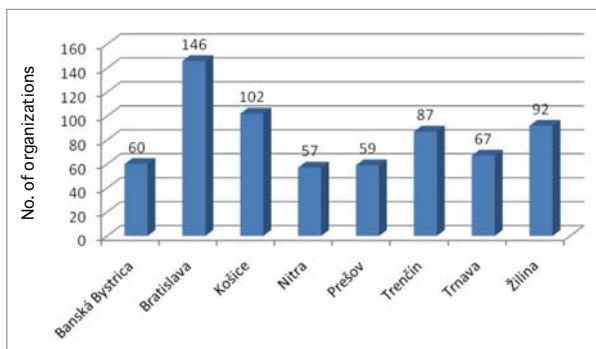


Fig. 3 EMS certifications according to ISO standard 14001 in particular regions of the SR [10]

Fig. 4 shows that the greatest share of all companies with certified EMS in Slovakia consists of large enterprises. Those are naturally the biggest financial, personnel and equipment options for the implementation of EMS [9].

3. EMAS Registration in Slovakia

EMAS is currently the most reliable and effective management tool on the market for organizations that want to improve their environmental performance. The scheme has been available for participation by companies since 1995 and was originally restricted

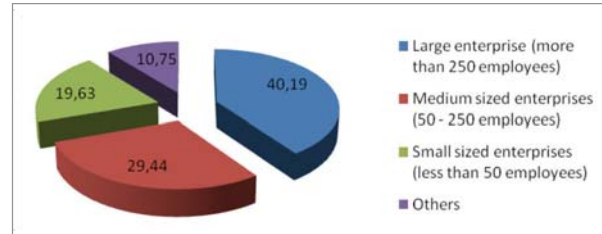


Fig. 4 Percentage of EMS certified organizations by size

to companies in industrial sectors. Since 2001 EMAS has been open to all economic sectors including public and private services.

In July 2008 the European Commission proposed to revise EMAS to increase the participation of companies and reduce the administrative burden and costs, particularly for small and medium sized enterprises (SMEs).

On November 25, 2009, the Council and the European Parliament adopted the revised EMAS Regulation. Publication in the Official Journal and entry into force of the Regulation is expected to happen at the end of 2009.

Revision in 2001 established ISO 14001 as a basis for EMAS implementation. Though EMAS goes beyond EN ISO 14001 in a number of ways, requiring the undertaking of an initial environmental review, the active involvement of employees in the implementation of EMAS, and the publication of relevant information to the public and other interested parties.

Notable differences include:

- Preliminary review: EMAS requires a verified initial environmental review - ISO does not.
- Public availability: EMAS requires that the policy, programme, environmental management system and details of the organisations performance are made publicly available as part of the environmental statement. ISO requires only that the policy be publicly available.
- Audits: EN ISO 14001 requires audits, although the frequency is not specified nor is the audit methodology set out in as much detail as in EMAS.
- Contractors and suppliers: EMAS is slightly more explicit in its control over contractors and suppliers, requiring that procurement issues are addressed and that the organisation endeavours to ensure that contractors and suppliers comply with the organisation's environmental policy. EN ISO14001 requires that relevant procedures are communicated to contractors and suppliers. In effect there should be no difference.
- Commitments and requirements: EN ISO14001 does not stipulate the extent to which performance must be improved. EMAS specifies that organisations must attempt to "reduce environmental impacts to levels not exceeding these corresponding to economically viable application of best available technology".

Up to November 2008 only 6 Slovak enterprises were registered in the EMAS scheme. The lack of interest in participation in the scheme is mostly due to the administrative complexity of the process. Also ISO 14001 has stronger position worldwide.

4. Solution for Small and Medium Sized Enterprises

Environmental management systems established according to ISO 14001 or EMAS are the best known, widely used voluntary tools, which provide a systematic approach to improving the environmental performance of an organization. But as showed above, these tools are mostly used in large enterprises – especially because of their financial, personal and administrative complexity.

But it is necessary also for small and medium sized enterprises (SMEs) to consider their impact on the environment. We are convinced of this due to the following reasons:

- New small and medium sized enterprises (SMEs) in Europe and Slovakia are the most common type of companies (with micro companies it is 99.8 %).
- SMEs provide more than 80 million jobs, out of total number of 122 million in the EU. In Slovakia SMEs has 70,8% share in overall employment.
 - SMEs are usually characterized by:
 - production of only one kind of product or service,
 - they are under great economic pressure,
 - they are limited to their local market,
 - established on family tradition,
 - low level of management,
 - limited possibilities of advertisement,
 - little possibilities of extended training and education
 - difficulties in information access.
- As a result of the heterogeneous focus of their activities, SMEs have different environmental problems and therefore require different types of solutions.

SMEs are active in very different actions, but they have some common features, for instance:

- they are a source of innovation,
- provide more jobs than large enterprises,
- they comprise a very heterogeneous group in terms of size and activity,
- they have considerable influence on environment. [3]

SMEs are also eminent polluters of environment; something they may not realize. In solving their environmental problems they have to get through a lot of difficulties related to lack of finances and know how [2], [5].

But there are a variety of voluntary pro-environmentally oriented tools for environmental performance improvement applied in different countries and branches which are less administratively, financially and personally demanding. The aim of their application is to improve the environmental performance of organizations, and to bring some other advantages in the form of risk elimination via reduction of accidents and breakdowns, environmental aware-

ness improvement and increased economic effectiveness and cost saving in material and energy sources, etc.

These voluntary pro-environmentally oriented tools are more suitable for SMEs but they can also serve as a first step in EMS implementation according to ISO 14001 or EMAS or they can improve existing EMS.

The mostly used pro-environmentally oriented tools are:

- Environmental performance evaluation (EPE),
- Cleaner production (CP),
- Environmental benchmarking (EB),
- Environmental reporting (ER),
- Corporate social responsibility (CSR),
- Ecodesign (ED),
- Life-cycle assessment (LCA),
- Eco-labeling (EL),
- Environmental accounting (EA),
- Responsible care (RC) etc.

Through our research in collaboration with the Association of Industrial Ecology in Slovakia (ASPEK) we discovered that the most commonly used pro-environmentally oriented tools were: responsible care (10), environmental reporting (9), evaluation of environmental performance (8), corporate social responsibility (8) and cleaner production (7). Companies most frequently consider the introduction of environmental performance (6), environmental accounting (4), environmental reporting (4) and corporate social responsibility (4). Least preferred were ecodesign, environmental labeling, life cycle and extended producer responsibility, which may be due to specific focus of the tool, but also due to lack of awareness of other tools.

The above mentioned information is graphically illustrated in Fig. 5.

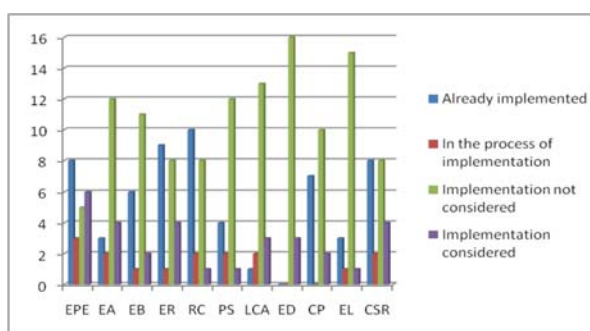


Fig. 5 Pro-environmentally oriented tools most commonly used by Slovak enterprises

5. Conclusion

It is difficult to give one specific answer to companies asking “what type of environmental management to choose” due to the factors mentioned above.

Our experience with certification audits of environmental management systems, however, revealed an interesting phenomenon. We found that companies were attempting to switch to European and world standards and certificate at any price, but often without the necessary environmental awareness of all enterprise workers.

The main feature of environmental management systems according to ISO 14001 as well as EMAS and pro-environmentally oriented voluntary tools is the management of environmental aspects, impacts and risks and the systems of continuous improvement of environmental performance.

Let us therefore build environmental performance in enterprises from the ground up – environmental awareness to environ-

mental performance through the application of the system suitable for us (EMS, EMAS, pro environmentally oriented voluntary tools) and we will be able to manage – personally, economically and organizationally, the continuous improvement of environmental performance.

We are in the European Union so the focus should first be put on the EMAS. This, however, is problematic, as outlined, in Slovakia, where despite efforts on the legislation and methodology only 6 organizations/sites are registered.

It appears that the implementation of ISO prevails and Slovak enterprises will just focus in this direction, which in itself is no problem now and can serve as a basis for meeting the requests of EMAS in the future.

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