

AN ASSESSMENT OF THE MOTIVATIONS FOR AND RESULTS OF ENVIRONMENTAL MANAGEMENT SYSTEM IMPLEMENTATION AND CERTIFICATION IN THE ELECTRICITY AND GAS SECTOR IN GERMANY: SIX CASE STUDIES.

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ABSTRACT

Environmental management systems (EMS) are becoming increasingly integral parts of company operations around the world. Likewise, EMS certifications are becoming much more commonplace. German companies are some of the world's most active in terms of Eco-Management and Audit Scheme (EMAS) and ISO 14001 certification. In Germany alone, EMAS certifications have increased by approximately 500 per year over the last five years, and now stand at over 2,000. ISO 14001 certifications have increased at similar rates. However, few studies have focused on the reasons for this growth in Germany. Most studies that have been conducted are large, quantitative studies that concentrate on the results of EMS implementation rather than on motivations for implementation. Even fewer studies assess companies which have not pursued EMS implementation or certification at all.

The purpose of this exploratory study was to present in-depth case studies of eastern and western German companies in one industrial sector, the energy sector, that focus on the motivations for and results of EMS implementation and certification. Companies and facilities with EMAS certification were compared to those with ISO 14001 certification. An assessment was made as to why EMS certification did/did not meet ex ante expectations. One company with no EMS whatsoever was included in order to gain insight into the barriers to EMS implementation and certification in that firm. The energy sector was chosen because of its huge environmental impacts, especially in the former German Democratic Republic, which had some of the worst air pollution in the world.

Two important factors affecting EMS implementation and certification were:

- **Timing:** The energy sector in Germany is in a significant state of change. Deregulation in the electric utility industry occurred in April 1998 and gas deregulation is expected to occur in 2001. Each certified electric utility in this study achieved certification before deregulation, when they had more predictable earnings through protected markets. Although the natural gas sector is not yet deregulated, one gas company in the study deliberately chose to certify before deregulation because it had the time and resources to do so, and it thought that certification after deregulation would be more difficult to achieve or would be in principal too late. The two companies in the study without certified EMS must decide on certification in the midst of a price war which has resulted from

deregulation. Thus, the cases show that proactive environmental change can be difficult to push through in a time when both management and customers are most concerned with price and when the empirical evidence does not show that good environmental management is a way to win customers.

- **The role of management.** The environmental manager played the key role in promoting EMS certification. The environmental manager, with the help of her staff, typically presented top management with the suggestion for certification, and was then given the mandate from top management to begin the certification process. Importantly, top management did not only endorse certification, but also often took a strong stand that sent a clear message to all employees to participate in the process. The one company in this study in which management did not play an active role in promoting EMS implementation or certification was the one company that had no structured environmental management at all. Thus, all six case studies confirm the importance of the role of the environmental manager and top management in EMS implementation and certification.

Expectations for improvements related to EMS implementation and certification were met or exceeded on the following points:

- **Regulatory compliance and organizational security.** *Motivation:* Prior to EMS implementation, several companies, had no way of knowing if they were violating laws or regulations because they had never taken the time to check. As a result, these companies feared that they could be in danger of a regulatory violation or an environmental accident. *Result:* The decision to implement an EMS forced companies to take the time to comb through Germany's complex and extensive environmental laws and regulations in order to determine their stance of compliance. Second, the knowledge gained by going through the process of coming to terms with applicable laws and regulations enabled environmental managers to more easily adapt to the relatively frequent changes that occur to environmental laws and regulations. The third-party verification related to EMS certification gave companies an enhanced sense of regulatory compliance and reduced liability.
- **Improved documentation and operational efficiency.** *Motivation:* Although most companies had an EMS in place prior to deciding on EMS certification, these EMS were inadequate in that they were not comprehensive, detailed, or even in some cases written. Clearly delineated tasks, processes, and delegated responsibilities would amount to a greater sense of control over the EMS. *Result:* It was through the EMS certification process that companies addressed the weak spots in their EMS and developed detailed written procedures on environmental management. EMS certification alone did not guarantee exemplary documentation, however. EMAS-certified facilities had far better EMS documentation than ISO 14001-certified facilities.
- **Employee Awareness.** *Motivation:* Most companies hoped that an EMS would increase employee awareness of environmental issues, although this was not a decisive motivation in deciding on EMS implementation or certification in any case. *Result:* All certified

companies reported substantial improvement in employee awareness of environmental issues, and attributed such improvement to both EMS implementation and certification. During EMS implementation, many employees were consulted and educated on environmental issues, thereby making the EMS more accessible to all employees. Even if the EMS did not affect someone directly, it typically affected everyone indirectly by virtue of its more general goals such as continual environmental improvement, increased recycling and waste reduction. Each certified company introduced more consistent training and audits that served to remind employees to keep the environment in mind. EMS certification was important in that it gave more weight to company emphasis on environmental management--because of the inclusion of a third-party auditor, employees were more likely to take the EMS seriously.

The following expectations were not fulfilled as a result of EMS certification:

- **Customer Recognition.** Despite the fact that so many companies and facilities in Germany have either EMAS or ISO 14001 certification, very few companies require certification of their suppliers. Similarly, customers have shown no preference for companies with ISO 14001 or EMAS certification. The majority of requests for environmental statements are from universities and government agencies, not customers.
- **Regulatory Relief.** Each of the certified companies had expectations for some form of regulatory relief prior to undertaking the certification process. No across-the-board relief has resulted from certification, because no European or federal relief initiatives have been generated. When regulatory relief is suggested by regulators but not delivered, regulators run the risk of eroding business community faith in such certifications. Such a loss of faith could lead businesses to shun the certification process altogether.

Policy Recommendations:

- The companies with certified EMS tend to be exemplary companies and should be rewarded with reasonable levels of regulatory relief. The most feasible type of relief is probably substitution. For example, when ISO 14001 or EMAS requires something of a company such as an audit or the formulation of an environmental policy, it is redundant for governments to ask the same. Additionally, coordination of relief should be done so that it is not much more favorable to obtain certification in one part of the country than in another.
- The European Union is considering launching a consumer awareness campaign so that EMAS will have more resonance with the public at large. The lack of strong correlation between EMAS certification and improved environmental performance shows that it would be unwise to launch such a campaign. In terms of the environment, a more wise information campaign would promote green electricity, which is suffering from the same lack of awareness as EMAS.

- It is possible that ISO 14001 certification will become more common than EMAS certification in Germany. Companies and facilities with ISO 14001 tend to be less transparent than those with EMAS certification since EMAS requires the publication of an environmental statement describing company and facility impacts, whereas ISO 14001 does not. Therefore, a law is needed in Germany similar to the Toxic Release Inventory in the United States which would require the publication of certain company pollution data. Otherwise customers or researchers will continue to have difficulty obtaining such data. Furthermore, companies will remain unaware of how their environmental performance compares to others in their industry.

Key words: Environmental management system, EMS, Eco-Management and Audit Scheme, ISO 14001, motivation, Germany, electricity, gas.