ECO-EFFICIENCY IN INDUSTRY AND SCIENCE

The European Union's Eco-Management and Audit Scheme (EMAS)

Michael S. Wenk

Springer

THE EUROPEAN UNION'S ECO-MANAGEMENT AND AUDIT SCHEME (EMAS)

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Dedication

To my wife, Cynde, the love of my life, and to our two children Andy and Lauren, who have made me proud beyond our dreams.

To my parents, Georgia and Robert Wenk, for giving me the education, the confidence and the ability to create my first book. Without their guidance and support through the years, this would not have been possible.

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INTRODUCTION

"I went to the woods because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived."

—Henry David Thoreau

While the history of the global environmental movement has been well documented and addressed in almost countless texts, it is instructive to examine several key events in the movement, in order to more fully understand the impetus for and impact of the European Eco-Management and Audit Scheme (EMAS), which is the subject of this text.

"The landmark book *Silent Spring* played a vitally important role in stimulating the contemporary environmental movement".[1] *Silent Spring* sold over 500,000 copies in its hard cover printing, spent over half a year on the *New York Times* bestseller list, and was published in two dozen other countries. Author Ramachandra Guha notes how the "impact of Silent Spring was by no means restricted to the United States . . . translated into twelve languages, Silent Spring had a striking impact on the resurgence of environmentalism throughout Europe".[2] The book gained prominence in the Netherlands, United Kingdom, Germany and Sweden, among other countries.

> Environmentalists had for some time been concerned with the protection of endangered species or beautiful habitats; it was *Silent Spring* which helped them move further, to an appreciation that in 'in nature nothing exists alone' . . . that nature was, in sum, 'an intricate web of life whose interwoven strands lead from microbes to man'.[3]

Secondly, Earth Day, a nation-wide effort in the United States on 22 April 1970, gave a forum for ". . . an estimated 20 million participants [to affirm] their commitment to a clean environment . . . ", and to advocate changes in the manner in which the U.S. government related to environmental issues.[4] Earth Day 1970 gave birth to some now well-known items such as the United States Environmental Protection Agency, the Resource Conservation and Recovery Act (RCRA), which governed the "cradle to grave" management of hazardous waste, the Toxic Substances Control Act (TSCA), which regulated the introduction of previously unknown chemicals into the United States without significant data, and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), which covered the remediation of contaminated sites in which the responsible parties were either insolvent or could not be found.

Tangential to the ideas expressed in *Silent Spring* and by Earth Day 1970, was another major influence on the global environmental movement. Formally established in Germany in March 1979, but having roots to at least a year earlier, the Green Party

first came into prominence when it was elected to the German Parliament—the first new party to do so since the 1920s.[5] By the mid-1990s, the Green Party had representatives in most provincial parliaments and held office in several provinces.

> The German Greens offered a beacon for environmentalists in other European countries, who tried to form political parties of their own. It has been a hard act to follow, and although in Belgium, Italy and Sweden green parties have since entered Parliament, they have not had quite the same impact. In the history of modern environmentalism, the German Greens stand out for their political victories and for the moral challenge they offer to the governing beliefs of industrial civilization.[6]

The birth of the Green Party in German can be traced to a "turning inward" after the horrors of World War II, resulting in a desire to escape the violent past of Nazism and to move collectively toward a more positive and cooperative society. The 1970s saw a series of demonstrations and strikes against polluting industries, as well as civil disobedience to promote greener and safer technologies. "When the established political parties continued to keep their distance, environmentalists thought of directly representing themselves".[7]

A final impetus for environmental considerations was noted by Andrew Hoffman (1997), who observed that "Fundamentally, corporate environmentalism evolved from an ancillary aspect of corporate operations driven by industry considerations to a central aspect of corporate strategy driven by a core business constituency. The heresy of the 1960s became the dogma of the 1990s".[8] Although Hoffman focuses primarily on corporations in the United States, when one takes into account the rampant globalization which has and which continues to pervade society, one can easily extrapolate his conclusions to the European Union.

Hoffman argues that, rather than solely being tied to industry's desire to reign in operating costs (by reducing regulatory exposure), corporations tend to mirror the public's concern relating to environmental issues. In other words, when environmental concern is at a zenith (such as in the early 1970s or later 1980s/early 1990s), firms tend to focus much more on environmental protection, if for no other reason than to promote themselves as good corporate citizens.[9] In addition, he postulates that if these costs or regulations were the sole impetus for environmental protection actions within corporations, it would not explain the fact that corporations have made changes and decisions outside of this area in relative unison.[10] Firms have created positions such as Vice-Presidents of Environmental Affairs, have produced and disseminated annual environmental reports, established industry-wide environmental protection associations, and have developed company-specific environmental policies.[11]

As an outgrowth of this movement toward a more environmentally conscious society, various nations and professional organizations have developed their own environmental auditing schemes in this regard. The manifest goal of these systems has been to provide a means for organizations to both track and assess the efficacy of their environmental management systems, against an independent and validated program. The European Union's Eco-Management and Audit Scheme, or EMAS, a voluntary plan that enables organizations within the European Union to seek third-party certification for their

Environmental Management Systems, is the subject of this text. While in existence for almost 10 years, the EMAS program has been the subject of considerable discussion and consternation, both within the European Union and elsewhere. Some of the provisions of the Scheme were and are revolutionary, others are considered simply mirror images of aspects contained elsewhere. This text will attempt to define the history of the EMAS program, to evaluate the changes which occurred after its inception, and to examine the future role of the Scheme. Along the way, we will provide examples of how a "real-life" organization, Akzo Nobel (the author's parent firm) has chosen to employ the Scheme at three of its chemical manufacturing plants within the European Union, to allow the reader to observe different means of achieving the goals and results which the Scheme requires. We will conclude with a list of resources for Small and Medium-sized Enterprises, or SMEs, who are perhaps unsure of where to begin undertaking the EMAS program.

Please join me on this exciting journey.

Atlanta, Georgia, U.S.A.
August, 2004

NOTES

1. Guha, R. (2000). *Environmentalism: A Global History*. New York, Longman.
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CHAPTER 1

INTERRELATIONSHIPS BETWEEN BS 7750 AND THE EMAS PROGRAM

"Changing paradigms is only done effectively by providing experiences to people".
—Doug Englebart

In the year 2004, it is virtually certain that the majority of firms, in the developed world at least, have some sort of Environmental Management System (EMS) in place. Note that an EMS is different from the subject of this text, the Eco-Management and Audit Scheme (EMAS). Some may use these acronyms interchangeably, but they are in fact two distinct entities with individual goals, requirements and considerations.

> An EMS is a way to run environmental activities strategically and efficiently. It is not just about being able to show an auditable paper trail to certifying auditors or regulatory inspectors. Yes, it includes components such as software and hardware systems to keep track of essential information, but much of the performance-driven EMS is ethereal. It includes such elements as a company culture that supports EMS professionals working in harmony with operations and focusing on what really matters to the business.[1]

While specifically applicable only to the Member States of the EU, EMAS had its roots in various European environmental auditing programs. Programs such as BS 7750, Ireland (I.S. 310), France (X30-200), and Spain (UNE 77-801(2)) can be considered the direct precursors to the EMAS program, although some more so than others.

BS, or British Standard, 7750 is often considered to be the mother of the EMAS system, at least in terms of its general impetus. BS 7750 arose from a 1990 request to the British Standards Institute (BSI) for the development of third-party environmental verification through an auditing system. At the time, BSI surveyed the marketplace and came to realize that there was at least a rudimentary acceptance of such a concept, but that most firms were tacitly insistent that it be compatible with the British quality standard of the day, BS 5750. BSI was also instrumental in the development of BS 5750, which ultimately evolved into the international standard ISO 9000. This insistence was due to the rationale that BS 5750 had relatively recently been developed and implemented, and companies were reluctant to take on another expense for what was perceived as another wholly different quality management standard.[2]

Due to the fact that BS 7750 has been superseded by both EMAS and ISO 14001, it is necessary only to give a cursory review of the Standard, simply to help establish the "timeline" of development which gave rise to EMAS.

Dubbed the "Environmental Management Standard", when compared to ISO 9001, BS, or "British Standard", 7750 was published in April of 1992 under the official title "BS 7750 Environmental Management Systems". "All those companies currently affected by environmental legislation and regulations . . . [BS 7750] will help such companies control their operations, maintain them within the regulations and demonstrate conformance with those regulations".[3] That is, the manifest goal of the Standard was to provide a solid framework in which companies might take steps, which they define themselves, to evaluate their current operations, from an environmental standpoint.

BS 7750 came to life on 16 April 1992, and had the distinction of being the first formal environmental management system implemented on any level—locally, nationally or globally. "It was designed to enable any organization to establish an effective management system, as a foundation for both sound environmental performance and participation in environmental auditing schemes".[4] The Environment and Pollution Standards Policy Committee (EPSPC) and Technical Committee EPC/50 (TC 50) were the main committees involved in the drafting of the standard; EPSPC as the primary body and TC 50 as the delegated agency. The accreditation authority, or Competent Body, to use EMAS language, was the Department of Industry, not (perhaps strangely) the Department of Environment.

Relative to EMAS, it should be noted that a press release issued to announce the launch of BS 7750 was already looking ahead toward being compatible with the Scheme: "With a view to European developments, the new standard [BS 7750] is currently compatible with the European Community's proposed regulation on environmental auditing [EMAS]."[5]

After a 2 year implementation program, BS 7750 was reviewed based on feedback from over 230 participating companies and over 500 individuals, and was revised and reissued in January 1994.[6]

BS 7750 lays out specific requirements for the implementation and "upkeep" of a corporate environmental management system. "In practice, this means that a company will document the evidence that it is aware of regulations, and build a management system which can ensure compliance with those regulations, and finally produce evidence of that system for inspection".[7]

There are four notable differences between BS 7750 and EMAS. However, in order to fully appreciate them, one must realize that BS 7750 is an environmental *management* system, while EMAS is an environmental *protection* system.[8] The difference between the two is critical to realize: an environmental management system is one in which the effects on the environment are controlled, or *managed*. They do not necessarily imply or require improvement or proactiveness. An environmental *protection* system, on the other hand, allows for (or mandates) that the environment be protected from (further) harm. Simply managing the effects of the firm is not enough; degradation must be prevented.

Foremost, EMAS requires the implementing firm to conduct an "environmental review" of the aspects and processes of the firm as an entity, before establishing the management system. BS 7750 requires a similar review to take place, but does not view

such a review as part of the overall process. Indeed, in BSI's view, "[the environmental review] is not an assessable element of an establishment system". Accordingly the adequacy or inadequacy of the preparatory review should not have a bearing upon whether or not certification will follow.[9] This is a marked difference from EMAS, in that the Scheme requires a baseline of sorts to be established before the management system may be developed or implemented. This section of BS 7750, on face, appears to state that this type of "pre-audit" is not necessary to be conducted. However, the section interestingly goes on to state that, in effect, whether the "pre-audit" was conducted should have no bearing on whether registration is achieved. In other words, according to BSI, a firm could decline to conduct an environmental review under BS 7750, prior to its registration audit, and this declination, should in theory have no link to whether the firm is registered. In other words, "you don't have to bother to do your homework, just pass the exam"! Curious logic indeed.

Secondly, although both EMAS and BS 7750 contain a requirement for creating and making publicly available an environmental policy, BS 7750 simply states that such a policy must "include a commitment to continual improvement of environmental performance . . . ".[10] Under EMAS, the firms are required to make sure that the environmental impact of all activities is reduced as far as is possible. In other words, and to preview an example used later in the text, a firm could reduce the level of a pollutant discharged in their wastewater by a mere 1 ppm. While this may not have any measurable (beneficial) environmental impact, the firm is technically improving. As long as it continues to do this over some time period, this aspect of EMAS is met.

A third difference between BS 7750 and EMAS can be seen with regard to the review of the program. Under BS 7750, management "is required to review the environmental management system at appropriate intervals and take into account the results of audits when conducting the reviews, [but] there does not appear to be any obligation . . . to review the environmental policy, objectives or targets".[11] EMAS, however, requires management to regularly review the policy, objectives and programs and "in light of the latest environmental audit, set new objectives and introduce new measures aimed at improving environmental performance".[12]

The final prime difference between BS 7750 and EMAS is the amount and degree of publicity required by EMAS. BS 7750 does require the environmental policy to be made publicly available, but leaves it to the discretion of the firm as to how, or even if, any other information will be released to the public. "[EMAS] on the other hand, places great importance on making available information about environmental performance available to the public. Indeed, this is one of the stated objectives of the scheme". EMAS sets out specific requirements for how the environmental performance information must be publicized.

Thus, although BS 7750 was essentially the environmental management standard which gave birth—in a tangential way—to EMAS, there are some significant differences between the two Schemes. The important point to take into account at this juncture is that EMAS is not simply BS 7750 with a different name. The two programs, although interrelated on several levels, and sharing various commonalities, are in reality two wholly different systems.

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CHAPTER 2

IMPETUS FOR CREATION OF EMAS. LEGISLATIVE AND DEVELOPMENTAL HISTORY OF THE PROGRAM

"We cannot solve the problems that we have created with the same thinking that created them".

—Albert Einstein

> Since the beginning of the nineties, the number of eco-taxes, tradeable permits and voluntary approaches has been increasing in industrialized countries. This development means that the features of emerging environmental state [*sic*] are continuously in transition. The regulatory reform has been especially drastic inside the European Union.[1]

While many aspects of environmental "reform" exist, in order to fully understand the thought processes behind the creation of the EMAS program, it is necessary to examine the development of environmental policy in the EU from the Treaty of Rome ("the Treaty") onward. The convergence of a variety of factors has given rise to both the need for an EMAS system and to the technical points within it.

From the outset of the environmental "movement", which many scientists and other professionals consider to have been born in 1962 with the publication of Rachel Carson's seminal text *Silent Spring*, "[e]nvironmental quality has traditionally been perceived as a common or public good which cannot readily be provided via the market, and thus the state has been assumed to be the principal actor in environmental protection".[2] "Since 1973, the Community institutions have been increasingly active in implementing environmental policy. Between 1973 and mid-1983, over seventy [environmental] legislative texts were adopted . . . ".[3] According to Rehbinder and Stewart (1988), "the historical development of an institutionalized environmental policy [in the EU] can be separated into two distinct phases".[4] First, environmental policy evolved as a sidebar as part of the efforts to harmonize environmental laws among the Member States, in order to remove barriers to trade. The second phase involved the "development and implementation of a true common environmental policy".[5] This second phase was launched in 1971 when various institutions began to work toward an EC-wide commitment to environmental protection.

However, from the outset, Member States continued to argue over whether, if at all, the Treaty provided any basis for the EU to take such sovereign action with regard to the environment. Some States professed the view that the Treaty only allowed the Commission to take unilateral action when economic objectives were involved. Others, including legal scholars, adopted the position that *all* environmental issues relating to agriculture

or transportation are *expressly* addressed in various sections of the Treaty, thereby giving the Commission the authority required to mandate an EU-wide policy. Those groups who accept this later view, in spite of its perceived shortcomings, point to Articles 100 and 235 of the Treaty as providing the basis for this broadly interpreted power.

Article 100 of the Treaty reads:

> The Council shall, acting unanimously on a proposal from the Commission and after consulting the European Parliament and the Economic and Social Committee, issue directives for the approximation of such laws, regulations or administrative provisions of the Member States as directly affect the establishment or functioning of the common market.[6]

Similarly, Article 235 states:

> If action by the Community should prove necessary to attain, in the course of the operation of the common market, one of the objectives of the Community and this Treaty has not provided the necessary powers, the Council shall, acting unanimously on a proposal from the Commission and after consulting the European Parliament, take the appropriate measures.[7]

The concept of a European environmental "scheme", and in fact European environmental protection, has its roots in a variety of areas, However, as we have seen, none of the European treaties *expressly* permitted any aspect of the European Community to act in the field of environmental protection.[8] Any interpretations to the contrary are just that—matters of interpretation. Johnson and Corcelle (1989) identified this aspect skillfully when they determined:

> . . . Community Environment Policy differs fundamentally from other Community policies, such as agricultural, commercial or transport policies, in that no mention of it is made in the . . . Treaty of Rome. This omission is explained by the fact that in the years during which the Treaty of Rome was being drawn up the idea of environmental policy or of "environmental protection" . . . simply did not exist.[9]

In fact, the explicit goal of the Treaty was to create a universal economic community by creating a common European market. Johnson and Corcelle go on to note that only two articles in the Treaty, Articles 2 and 36, even *tangentially* address the issue of environmental policy or protection.[10] Article 2 outlines simply "to promote throughout the Community a harmonious and balanced development of economic activities, sustainable and non-inflationary growth respecting the environment".[11] This Article has been construed by proponents to imply that the several Member States are responsible for environmental protection. Article 36 is similarly vague, in that it states "The provisions of Arts. 30 to 34 shall not preclude prohibitions or restrictions on imports, exports or goods in transit justified on grounds of public morality, public policy or public security; the protection of health and life of humans, animals or plants . . . ".[12] In legal circles, such grandiose but ultimately "toothless" legal language is referred to as being a "paper tiger". That is, the language is very assertive, but in practicality there is no real substance or enforceability behind it.[13]

The Treaty

> . . . clearly reflect[s] the period in which [it] was written, before concerns about pollution and depletion of resources had come to prominence. Thus Article 2 . . . includes among the tasks of the Community . . . 'an accelerated rising of the standard of living' of the member states, with no concern for the quality of that expansion, or the conservation of resources, or the needs of future generations.[14]

Those looking for a basis in the Treaty for environmental management or protection have focused upon two alternate sections, as we have seen. Both of these Articles were originally intended to provide the EC with powers to ensure the goals of Articles 2 and 36, among others, were met. However, as environmental protection and policy has developed over time, it has been promoted as a goal of the EC as a whole, thereby moving it into the arena of a common EU policy.[15]

The Paris Summit of October 1972 was a watershed moment in the creation of a national EU environmental policy. At the Summit, the heads of the six European Communities (EC), Belgium, France, Germany, Italy, Luxembourg and The Netherlands, as well as the new members (UK, Demark and Ireland) agreed to work toward transforming the EC into a European Union, promoting a variety of common policies.[16] Specifically, the six leaders determined that the economic expansion of the EU should involve environmental protection, as manifested in "quality of life" issues.[17] In addition, it was decided that there was a need to bring the EEC closer to the citizens. By this, the leaders were remarking that there needed to be a means for EU citizens to have an impact on environmental protection themselves, rather than simply waiting for the Authorities to take action where necessary. The idea was presented in this context, but fully came into being several decades in the future. As such, "the Heads of State and Government proposed that the institutions of the Community establish an Environmental Action Programme in the course of 1973 . . . ", which was forwarded to the Council on 17 April 1973, and formally approved on 22 November of that same year.[18] This decision led to the creation of the "First Environmental Action Programme of the European Community".

THE SIX ENVIRONMENTAL ACTION PROGRAMMES

> The Environmental Action Programmes are medium-term programmes and strategic policy documents. They reflect the fundamental elements of environmental thinking and problem perceptions, as well as strategic policy orientation at their time. New action programmes often reflected a change in the general political climate during that period. *But they are not binding programs for action—even if they contain lists of planned activities* [emphasis the author's].[19]

While much has been written about the specific objectives and criteria of the six Environment Action Programmes, in order to understand the impetus for the creation of EMAS, we need only give a cursory overview of them, to lay planks in the bridge from the Treaty of Rome to EMAS.

The "First Environmental Action Programme of the European Community" ("The First"), was an outgrowth of both the first (1972) United Nations conference on the environment in Stockholm and also a meeting of the EU Environment Ministers in Bonn, Germany on 31 October 1972. Formally adopted on 22 November 1973, "The First" set out a non-binding set of environmental policy objectives upon which the burgeoning EU should focus.[20] Encompassing the period 1973–1976 the First was, appropriately, the first time the European Commission began to look at constructing specific regulations to improve air and water quality, to regulate waste disposal, and in general to protect the environment.[21] It defined the principles and objectives of Community Environmental Policy, and delineated the actions for each environmental media.

In sum, the First focused on the need to comprehensively assess what impacts to the environment the various other Community policies already in force had, in an attempt to mitigate or avoid environmental harm. "It proposed a gradual approach, to define environmental quality objectives .... [A]t the end of this process the definition of product and environmental quality norms was suggested. The approach was based [primarily] on protection of a single environmental media".[22] One of the primary shortcomings of such a secular methodology is that the natural environment is viewed as a series of discrete "boxes" labeled by type of media: air, water, soil, etc. It also assumes that the boxes are not interdependent or interrelated. However, environmental scientists and engineers certainly realize that an impact to one media, such as a spill of solvent to the soil, will *necessarily* have a conjugal impact on other media, such as water (if it leaches though to the groundwater, for example), or the air (if it volatilizes beforehand, as another example). Thus, this approach was not perhaps the best one.

"The First" sets out three specific "categories of action" for the Programme: the reduction and prevention of pollution and nuisances, action to improve the environment and the "setting of life", and community and/or common action by the States relating to the environment.[23] "The First" also delineated a series of projects for the States to undertake, in order to set a comparative baseline for the evaluation of (future) data.[24]

In addition, the First contained an idealistic list of 11 principles that were designed to harmonize environmental care. The principles ranged from considering the environment and environmental protection in technical planning and decision-making to ensuring that activities undertaken in one Member State do not degrade the environment of another State, and even to promulgating the idea of a coordinated environmental policy throughout all the States.[25]

The "Second Action Programme" ("The Second"), adopted on 17 May 1977 and covering the period 1977–1981, restated the objectives and commitments of "The First", while focusing more on land management and protection.[26] Specifically, the "The Second" contained chapters on "non-damaging use and rational management of land", "urban and rural areas, and coastal and mountain regions" and "protection and management of natural resources". Further, "The Second" set out, for the first time in EU legislation, the concept of environmental impact assessments.[27]

The "Third Action Programme" ("The Third"), adopted 17 February 1983, encompassing the years 1982 through 1986, functioned as a hybrid of "the First" and "the

Second", in that it set out the objective of integrating environmental protection into other areas of the EU.[28,29] Furthermore, it "emphasized the potential risks and benefits of environmental policies to the internal market".[30] Finally, it formally established a prioritized list of actions to be taken, and delineated for the first time the concept of a preventive approach to environmental policy.[31]

In the sense of the internal market, "the Third" was wholly unique. With this Programme, the environmental movement shifted from the previous "command and control" type of regulation—in which the government would set standards and enforce penalties for non-compliance—to a more cooperative approach. As will be seen later, around this time governmental agencies—throughout the world—began to realize that a "command and control" approach to compliance was perhaps not in their (the agencies') best interest. For a variety of reasons, such as hiring freezes, budget tightening, etc., such agencies were consistently short of the resources needed to investigate/audit and potentially admonish industry for compliance failures. As a result, inspections and inspection frequencies were reduced, and so forth. Realizing this, the agencies began to adopt a more cooperative approach with respect to industry. By allowing for reduced penalties for such aspects as self-disclosure of environmental violations by industry, the manifest goal of environmental protection was accomplished, and both sides were able to claim a modicum of "victory" in the process. This is critical to understand, especially when it is juxtaposed against EMAS, for which this idea is paramount.

Similarly, a more holistic approach began to take shape during this period. Emissions limits for stationary and mobile sources were defined, and "deep ecology" principles such as waste avoidance, efficient resource use and integrated environmental technologies were incorporated. As will be discussed in detail later, German influence brought about many of the changes of "the Third", largely to avoid competitive inadequacies among the Member States.

The "Fourth Action Programme" ("the Fourth"), enacted on 19 October 1987, covering the years 1987–1992, was perhaps the most definitive to date, declaring "it has now become clear that there can be no lasting economic and social progress if environmental problems are not taken into consideration . . . ".[32] As will be discussed below, "1987 is often seen as the turning point in the environmental policy of the EC, since environmental protection received its own chapter in the Treaty [The Treaty of the European Union]".[33] "For the first time, environmental protection was not perceived as an *additive*, but as an *integrated activity* within the whole production process".[34]

"The Fourth" attempted to ensure synchronization between internal market objectives and protection of the environment. As introduced in "the Third", the goal was to help eliminate any competitive advantage that a Member State might receive by failing to comply, or to comply at the same level as others, with environmental regulations. Thus, the integrity of the internal market was protected, because no State could "refuse" to implement at least a minimum level of environmental protection. Therefore, for example, goods produced in France which (hypothetically) had a lesser level of environmental protection/standards could not be produced more cheaply because of this (hypothetical) advantage of compliance avoidance.

In addition, "the Fourth" formally introduced the concept of monetary elements that could be used in a traditional "carrot and stick" approach to compliance. Taxes, subsidies and tradable emissions permits, among other items, came into existence. Thus, firms who reduced their discharges to air, for example, could potentially reap an economic benefit in the form of reduced taxes or government subsidies for the operation, and potentially secure the ability to trade the emissions offsets with other firms for financial gain.

Another important event which occurred during the period "the Fourth" was in place was the increased global interest in environmentalism, and the increased presence of Green Parties in Europe. Companies began to realize that it was in their best interest, not just economically, but from a public perception point of view as well, to adopt pollution control and waste minimization strategies. A well-known example of this corporate acknowledgment, which is further fleshed out in the Fifth Environmental Action Programme, was the development of the "Nordic Swan" ecolabel. "Nordic Swan assesses the product's environmental impact during its entire life cycle, from raw material to waste".[35] The criteria are established by the Nordic Ecolabeling Board, and firms which meet its criteria can display the Swan Logo on their products for up to 3 years. According to the program's web site:

- The Swan label is well known. 67% of people in the Nordic countries understand the Swan. So the label is an [*sic*] cost-efficient way of communicating that you are a company which takes responsibility for the environment through environmentally-friendly products.
- It will earn you goodwill for free. 77% of Swedes consider that the Swan makes a brand extremely reliable.

Thus, in this example, corporations had a means, or "desire", to have environmentally-compliant of less environmentally harmful products, because doing so could conceivably earn them public recognition for their efforts. Interestingly, the recognition came in the form of an independent third-party logo, which could be construed by the public as an endorsement or even a "certification" of the firm or product by the third-party. This may not often be the case, but that was the public perception.

A final event of significance during this period was the meeting of the European Council in Rhodes, Greece on 02–03 December 1988. Their issuance of the "Declaration on the Environment" required that "it is essential to increase efforts to protect the environment directly and also to ensure that such protection becomes an integral component of other policies".[36]

The "Fifth Environmental Action Programme" ("the Fifth"), adopted on 01 February 1993 and encompassing the years 1993–2000, differed from the trend established by at least the two previous Programmes. "As its title 'Towards Sustainability' implies, the programme set longer term objectives and focused on a more global approach".[37] "The Fifth" is the Programme which most directly gave rise to EMAS, calling for "more cooperation between the public administrations and the affected parties, such as industry sectors".[38] "The Fifth" clearly continues the change from a relatively regimented set of regulations set out by a central national government to one in which the individual States can adapt the regulations to fit their own local circumstances.[39]

Central to "the Fifth", as to "the Fourth", was an emphasis on market-based incentives for compliance. However, "the Fifth" "tweaked" this idea slightly, and encouraged the development of *voluntary* programs that would promote the firm to the customer. The manufacturing industry was one of five areas "the Fifth" identified in which environmental protection was to be given increased prominence. "The Fifth" also expanded the idea of such programs as the Nordic Swan, in that it took "into account the crucial role of non-governmental protagonists and local/regional authorities to represent the general interest of the environment. This may contribute to innovative concepts, raise public awareness, and enforce the implementation of EU directives".[40] Finally, "the Fifth" outlined objectives for the reduction of pollutants, as well as proposed means to achieve these reductions. Once again, this aspect is *crucial* in understanding the development of EMAS, in that EMAS has the ability to mandate control technologies (such as Best Available Technology, or "BAT") to be used to come into compliance with environmental regulations and standards.

"The Fifth" was also the first Environmental Action Programme to reflect "the growing realization in industry and in the business world that not only is industry a significant part of the environmental problem but it must also be part of the solution".[41] However, the elements of "the Fifth" met with considerable resistance from the various Member States. The costs of such programs, such as BAT and an energy and carbon dioxide tax, did not sit well with the affected industries. In addition, it must be remembered that "the Fifth" came into being at a time in which Europe was undergoing a major social and political transformation as a result of the disintegration of the Communist regimes in various countries. For example, "The discussion on the modernisation of environmental policies in Germany came to a standstill, whereas the economic problems of reunification, especially high unemployment, became a primary concern".[42]

The final Programme to date, the "Sixth Action Programme" ("the Sixth"), adopted on 10 September 2002 for the period 2001–2010, identified four environmental areas to be tackled for improvements: Climate Change, Nature and Biodiversity, Environment and Health and Quality of Life, and Natural Resources and Waste.[43] "The Sixth" stresses the importance of involving citizens and business in innovative ways.

The "Executive Summary" of "the Sixth" declared that progress had been made since the implementation of the First almost 30 years previously. However, it did acknowledge that the environment would continue to degrade unless:

- More progress was made in the implementation of environmental legislation in Member States;
- Integration of environment [*sic*] into the economic and social policies driving the pressures on the environment was improved and deepened;
- Stakeholders and citizens took more ownership of efforts to protect the environment;
- New impetus to measures aimed at addressing a number of serious and persistent environmental problems as well as a number of emerging concerns.[44]

The third bullet point especially, as well as the others, is perceived to be a direct affront to the issues raised by the Member States with regard to "the Fifth". It somewhat

subtly makes it clear that unless the States reconsider their postures on accelerating environmental improvements, there will be a dearth of progress over the coming decade.

Perhaps most tellingly, given the events and attitudes surrounding the Fifth Programme, the Summary provides an unusually strong statement of policy under the heading of "A strategic approach to meeting our environmental objectives". For the first time in the 30 years' worth of directives and Programmes, there is an *explicit* statement regarding legal enforcement: "*Implementation of existing environmental legislation* needs to be improved. *Vigorous legal action through the European Court of Justice should be combined with support for best practices and a policy of public information to 'name, fame and shame'*" [italicized emphasis the original].[45] Recall from earlier in this chapter the statement that the Programmes "*. . . are not binding programs for action—even if they contain lists of planned activities*" [emphasis the author's].[46] With this statement, the Commission of the European Communities was taking a revolutionary, and perhaps a legally tenuous step: they were attempting to lay the groundwork for potential lawsuits based on prospective non-compliance with a voluntary action program.

One theory behind this proposed action is that the Sixth both entered into and covered a time period in which 10 new countries joined the EU, thereby roughly doubling its size in one action. The Programme states "The implementation of the Sixth Programme will be undertaken in the context of an enlarged European Union . . . [t]he implementation of the Community's environmental legislation [*note: no distinction is made between voluntary or compulsory*] will of course be the main task for the Candidate Countries". [emphasis the author's].[47] In addition, "Internationally, it will be essential that environmental concerns are fully and properly integrated into all aspects of the Community's external relations".[48] In other words, as occurred with U.S. Vice-President Al Gore's "High Production Volume Chemicals Program", "choose to ignore voluntary requirements at your own peril".

Those familiar with the United States Environmental Protection Agency's (EPA) "Data Collection and Development on High Production Volume (HPV) Chemicals", or more simply, the "HPV program", will realize the fundamental irony of these "voluntary" requirements. Put forth in 2000, the HPV program identified approximately 2,800 chemicals which were identified as being manufactured or imported in quantities of 1 million pounds or more (according to the 1990 Inventory Update Rule, or IUR). Of these 2,800 chemicals or compounds, "only 7% have a full set of publicly available internationally recognized basic health and environmental fate/effects screening test data . . . Of the over 2,800 HPV chemicals based on 1990 data, 43% have no publicly available basic hazard data".[49] In other words, the EPA knew it was sorely lacking in data, and was attempting to "coerce" industry into providing it.

> In order to obtain such information, EPA has established a data collection and development program for existing HPV chemicals. Through the HPV Initiative, which includes the *voluntary* [emphasis the author's] HPV Challenge Program, certain international efforts, and *potential rulemaking under the Toxic Substances Control Act (TSCA)*, [emphasis the author's] basic screening level hazard data necessary to provide critical information about the environmental fate and potential hazards associated with HPV chemicals will

> be collected or, where necessary, developed . . . Data needs which remain unmet in the voluntary HPV Challenge Program, may be addressed through the international efforts or rulemaking.[50]

Implicitly, EPA was telling industry that, although the HPV program was strictly voluntary, they could choose not to participate, but then chemicals which were left "unsponsored" could then be subject to formal (legal) rulemaking, which would require firms to conduct the testing themselves, without opportunity to form joint agreements or consortia which they could do before any such rulemaking. Perhaps as a result, virtually every one of the 2,800 chemicals have been sponsored in some form, and rulemaking has been largely limited.

THE SINGLE EUROPEAN ACT, THE TREATY ON EUROPEAN UNION, AND THE RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT

With the background and "requirements" of the six Environmental Programmes defined, we now turn to two major European treaties, and one global declaration, which also have had a significant role in the impetus for the EMAS scheme. Treaties are considered "primary legislation", and are agreed to and ratified by the collective Member States. Therefore, they hold the force of law. "The European Union does not enjoy the prerogatives of a state; it may act only where it has been expressly so authorized by the [EC] Treaty".[51]

While operating in approximately the same vein as the other Action Programmes, both the Single European Act ("SEA") and the Treaty on European Union gave significant life to the environmental movement, and are consequently legally binding. The "Rio Declaration" gave global "permission" for the establishment of various environmental schemes.

The Single European Act was signed by the Ministers of the Member States on 17 February 1986 and entered into force on 01 July 1987.[52] Drafted quickly and with little discussion, and amending the Treaty of Rome, it was the first *Act* that set out the idea of an EU-wide environmental standard, although the concept had existed in various forms since the early 1970s.[53] The SEA " . . . made the EC the 'only environmental policy-making institution in the world with the power to impose *binding* obligations on sovereign nation states' " [emphasis the original].[54] The stated aim of the SEA was to " . . . [speak] ever increasingly with one voice and to act with consistency and solidarity in order more effectively to protect its common interests . . . ".[55]

The SEA " . . . [brought] together in one text both the provisions modifying the treaties establishing the European Communities and those on European political co-operation regarding foreign policy".[56] Perhaps most importantly, it provided the "*legal base* for environmental policy and introduced the important principle that the environment was to be a component of the EC's other policies" [emphasis the author's].[57] Furthermore, it *required* that harmonization proposals implemented in the EU in order to establish and maintain the common market to be based on a high level of environmental

protection.[58] The express goal of the SEA was to attempt to implement changes via community directives, rather than by regulations.[59]

> This inclusion of the environment in the new treaty represents first and foremost an official recognition by the governments of the Member States of the Community's responsibility in the area of the environment, thus regularizing a situation which has actually been in existence for a number of years. This official recognition has made it possible *explicitly to incorporate* in the new treaty certain fundamental principles that are basic to any environmental protection policy [emphasis the author's].[60]

The SEA reiterated many of the heretofore-"traditional" aspects of burgeoning European environmental law, such as the "polluter pays" principle, but it also introduced new concepts to the Union, such as the protection of natural resources and the idea of source remediation of environmental damage.[61] These ideas were ones which had their roots, albeit implicitly, in many of the United States Environmental Protection Agency's (EPA) statutes, such as the National Environmental Policy Act of 1969 (NEPA), and the Comprehensive Compensation, Response and Liability Act of 1980 (CERCLA).

For those unfamiliar with U.S. environmental law, NEPA, the first significant environmental statute in the United States, required "federal agencies to integrate environmental values into the decision making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions".[62] Federal agencies were required to prepare an Environmental Impact Statement, or "EIS", in order to determine if their proposed action(s) would have an adverse impact upon the environment, and if so, to carefully consider alternatives to those actions.[63]

CERCLA codified the "polluter pays" idea in the United States, requiring identified polluters of a given site to take financial responsibility for the cleanup. CERCLA's nickname, "Superfund", comes from the creation of the "Hazardous Substance Superfund", a series of taxes on chemical and petroleum-producing companies put in place in 1980 to pay for cleanup costs if (1) the original polluters of a site cannot be found, or (2) there are not enough funds available to complete the project.

Article 130R of the SEA, part of what is colloquially known as the "environment chapter", lays out the framework for the integration of environmental action programs within the Community. "They [Articles 130R, S and T] provided for the first time a clear legal basis for the EC's environment policy, and established the principle that environmental protection should be a component of all other Community policies".[64]

Specifically, the Act mandates three distinct objectives with respect to the environment and environmental policy:

1. To preserve, protect and improve the quality of the environment;
2. To contribute toward protecting human health;
3. To ensure a prudent and rational utilization of national resources.

Article 130S details how decisions are made within the Council, but it essentially reiterates protocols already in place. Article 130T, however, hearkens back again to an existing principle in U.S. environmental law, which allows the individual States or local

governments to promulgate regulations on a given topic which may be stronger than the federal standard, but which may not be any weaker. As an example, until July 2002, the Bay Area Air Quality Management District (BAAQMD) in Northern California, the air pollution control agency for the region surrounding the San Francisco Bay, regulated methyl acetate as a "volatile organic compound" or VOC. VOCs are defined by the EPA as "any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions [and which are not specifically exempted in the Section]".[65] Although the EPA de-listed methyl acetate as a VOC on 09 April 1998, the BAAQMD continued to regulate the compound as a VOC at the local level.[66] Thus, the local authority was more stringent in their regulation than the federal authority in this case; commonplace under U.S. environmental law, and which was brought into existence in the EU under Article 130T.

28 November 1989 saw the EEC Environment Ministers creating the "European Environment Agency", or EEA, whose primary responsibility will be the collection and management of environmental data throughout the EU. This management has direct links to the EU "freedom of information" act of 1988.[67]

The "Treaty on European Union", colloquially known as the "Maastricht Treaty", was signed at Maastricht, The Netherlands, on 07 February 1992. The Maastricht Treaty amends the Treaty of Rome, which established the European Economic Community in 1957. The manifest goal of the Maastricht Treaty was to eliminate a large number of economic and political barriers within the EU, to adopt a single currency (later to become the Euro), and to establish common policies on foreign affairs, defense and immigration. Perhaps most significantly, the Maastricht Treaty includes specific references to environmental policy and sustainable development, and "made environmental policy one of the major concerns of the EU".[68]

The Rio Declaration on Environment and Development ("Rio Declaration") is a formal set of 27 principles adopted by a meeting of nations in Rio de Janeiro, Brazil, from 3 to 14 June 1992. Delegations from 178 countries, heads of state of more than 100 countries, and representatives of more than 1,000 non-governmental organizations, or NGOs, attended the meetings.

The Rio Declaration began with a largely idyllic set of statements, intended to focus on a meshing between the natural environment and man's/industrialized society. The Rio Declaration opened with an utopist mission statement of sorts:

> With the goal of establishing a new and equitable global partnership through the creation of new levels of cooperation among States, key sectors of societies and people, [w]orking towards international agreements which respect the interests of all and protect the integrity of the global environmental and developmental system, [and] [r]ecognizing the integral and interdependent nature of the Earth, our home . . . [the 27 Rio principles were issued].[69]

Integral to the development and birth of EMAS are at least eight of the 27 Principles. While the development process for the Scheme can be clearly traced from at least 1957 forward, as we have seen, it was almost as if the Rio Declaration had a child in the

EU, and that child was EMAS. Principle 10 directly, and Principles 16 and 17 more indirectly, express the manifest goals of EMAS. For example:

> Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, *including information on hazardous materials and activities in their communities*, and the opportunity to participate in decision-making processes. *States shall facilitate and encourage public awareness and participation by making information widely available*. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided [emphasis the author's].[70]

If the two italicized portions of Principle 10 do not sum up the EMAS scheme, then nothing will.

Principles 16 and 17 apply to the creation of EMAS as well, but in a slightly less direct manner. Principle 16 states:

> National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.[71]

The "Economic instruments" of Principle 16 can be very easily linked to the EMAS scheme. By requiring firms pursuing registration to conduct environmental audits, publish environmental statements and commit to continual improvement, these "economic instruments" are put into place. Realistically, most firms cannot accomplish those three objectives without some type of cost expenditure. These aspects also serve to promote the "internalization" of the environmental costs. Similar language exists in Principle 17: "Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority".[72] Again, the ideas set out in EMAS require environmental audits and continual improvement, among various other aspects. Parts of these processes involve identifying the activities likely to cause environmental impacts, and determine ways in which to mitigate any negative impacts. Further, the "competent national authority" becomes involved in two ways, both by having the environmental policy submitted to them before registration, and also by having a trained third-party auditor, representing, in essence, the competent authority, conduct the verification.

THE BIRTH OF EMAS

Now that the foundation had been clearly laid for environmental policy and protection through EU legislation, the stage was set for a specific environmental management regulation.

European Council Regulation Number 1836/93 ("1836/93"), adopted 29 June 1993, set out the requirements for EMAS. 1836/93 enumerated three specific "objectives and principles" to be accomplished: "to prevent, reduce and as far as possible eliminate pollution . . . to ensure sound management of resources and to use clean or cleaner technology".[73] To be sure, EMAS was not designed to simply be another "flash in the pan" environmental auditing standard. Article 12, "Information", expressly lays out the *specific* actions Member States are required to take with regard to the promotion of EMAS. Specifically:[74]

[Each Member State shall take appropriate measures to ensure that:]

(a) Organisations are informed of the content of the Regulation;
(b) The *public* is informed of the objectives and principal components of EMAS [emphasis the author's].

While not necessarily *expressly* related to the requirements of Annex I-B(3) ("External Communication and Relations") and Annex III 3.6 ("Public Availability"), this section does bear a striking resemblance to the obligation of public communication which is incumbent on the organizations who are registered to EMAS. It is almost as if the Commission decided to use itself, via the respective Member States, to serve as an example in the area of communication. At least in theory, the representative bodies with the States were taking on the "do as I do" role.

The Annex continues:

"Member States shall, where appropriate, in cooperation with, amongst others, industrial associations, consumer organisations, environmental organisations, trade unions and local institutions, in particular use professional publications, local journals, promotion campaigns or any other functional means to promote general awareness of EMAS".[75]

> EMAS is an attempt to move away from the end-of-the-pipe philosophy with respect to pollution reduction and prevention and encourages the design of production processes which take account of the environment right from the beginning. Production processes are screened and optimized for the environment.[76]

It is important to note that at its inception, EMAS was defined to involve *voluntary* participation and was limited in scope to only industrial firms.[77] Furthermore, such firms needed to be in one of the following sectors of the marketplace: mining and quarrying of energy producing materials, manufacture of food products, beverages and tobacco, manufacture of textiles, leather, wood, pulp and paper, manufacture of coke, refined petroleum products and nuclear fuel, manufacture of chemicals and chemical products, manufacture of rubber and plastic products, manufacture of non-metallic mineral products, manufacture of basic metals, machinery and electrical equipment, manufacture of medical and optical instruments, manufacture of transport equipment, production of electricity, gas, steam, and hot water, recycling industry.[78]

The impetuses for the voluntary participation aspect can be seen in two main areas: the discourses surrounding the Fifth Programme, and the influence of lobbying groups in the EU in the early 1990s. With respect to the Fifth Programme, as discussed above, it was noted that "It [1836/93] seeks to help those in the manufacturing industry through promoting environmental management and informing the public about the performance of companies".[79] However, this statement can be somewhat misleading, in that EMAS also encompasses power generation, quarrying, mining and waste disposal sites.[80] Thus, the manifest purpose of the Fifth Programme was to assist industry in what essentially amounted to an overarching public relations campaign. Granted, the environmental management of the companies would at least theoretically improve as they strove to become more "green", but perhaps the most visible face the EU world saw as a result of this Programme was the environmental statement promulgated by the firms.

Secondly, by the time EMAS was actually published in the Official Journal of the European Communities, industry lobbyists had successfully convinced the Commission that *requiring* EMAS would place European firms at a competitive disadvantage to non-European firms.[81] Bear in mind that, as of 1993, the current EU-25 was "only" an EU-15. Thus, the 10 accession countries which joined on 01 May 2004, as well as other European but non-EU countries, would have a marked advantage over the EU-15. They would not be "hamstrung", from a production point of view, by the requirements of 1836/93 (such as continual improvement, compliance with regulations, etc.), so at least theoretically their goods could be produced more cheaply. "In addition, the requirement for annual auditing was changed to a requirement that 'the audit will be executed, or the audit cycle will be completed, as appropriate, at intervals no longer than 3 years'".[82]

The concept of voluntary agreements and programs such as EMAS became more popular in the 1990s. Governments began increasingly to realize that they did not have all of the information or tools necessary in order to establish effective, but "reasonable", environmental regulations. By working with firms, environmental goals such as pollution reduction are often achieved voluntarily. Government "wins" because they do not need to promulgate regulations, which can be time-consuming and contentious, and industry "wins" because they potentially are not (further) regulated. However, as Brouhle (2000) points out, voluntary agreements are subject to the "free-rider problem" in which some firms in an industry may participate in the voluntary reductions, but others do not. These other firms still enjoy the reduced regulatory benefits even though they did not actually participate.[83] In addition, companies electing to pursue EMAS commit themselves at the top management level. However, since the regulation also requires rank-and-file employees to assist in achieving and maintaining the registration, there is a "bottom up" commitment as well. Therefore, a wide cross-section of a firm is involved, as opposed to only specific sections.

The overarching goal of the Scheme was to improve the environmental performance of industrial firms, and to provide information on this improvement to the public. Specifically, the Scheme's directives were:

1. [To] establish[ment] and implement[ation] [of] environmental policies, programmes and management systems by companies, in relation to their sites;

2. The systematic, objective and periodic evaluation of the performance of such elements; [and]
3. The provision of information of environmental importance to the public.[84]

At this point, it is important to note that EMAS is *site-specific*, not *company-specific*. This enables firms employing EMAS to have flexibility, if desired, in implementing the Scheme only at larger sites (perhaps to make it more cost effective) or at ones where public scrutiny is high. "The intention is that external pressure from consumers will be brought to bear to change the pattern of corporate behaviour and improve environmental performance".[85]

In addition, there is no "baseline" of environmental performance which a company must attain in order to be part of the program. Continuous improvement from audit period to audit period (described later) is vital. However, continuous improvement is *all* that is required. In other words, a company which is out of compliance with its wastewater permit would not *necessarily* have to become compliant before beginning work on EMAS. However, in order to ultimately be registered to the Scheme, it must address this issue. The company itself sets the amount and time period for improvement.

Furthermore, third-party organizations are used to monitor implementation and compliance. These third-party auditors are State-recognized environmental experts.[86] In addition to having a minimum of 4 years of environmental experience, the auditors must complete an exam which includes questions on the requirements of the Scheme, legal and technical aspects of environmental management systems, and other topics.[87] "In environmental management systems, legal requirements play an overwhelming role, so the experts are usually better qualified and trained to carry out legal compliance audits than auditors of certification bodies".[88]

Finally, and perhaps most significantly to the corporate officers of firms involved in or considering EMAS, the company must prepare and release an environmental policy statement to the public, and "provide an independently verified public statement once each initial eco-audit is completed".[89] "In effect, therefore, the EMA[S] regulation requires a cultural change from one of secrecy to one of transparency and openness".[90] In other words, firms employing EMAS could no longer simply claim to be meeting environmental requirements: they had to prove they were doing so to an independent third-party, and then were obligated to publish a statement in that regard. This was virgin ground indeed.

While issues specific to the German implementation of EMAS will be addressed in detail in a later chapter, it is instructive at this point to examine briefly the basic reasons why EMAS has been so successfully embraced in Germany, because " . . . reasons were put forward [in a survey described below] why German companies were willing to participate in EMAS. However, these reasons do not differ greatly from those in other member states . . . ".[91]

Ironically, however, even though Germany currently enjoys a status as the Member State with the most registrations to the Scheme, the State initially strongly opposed the EMAS system.[92] The German authorities believed EMAS did not factor in the varying emissions standards which are required to be achieved in the States, and also

that it did not respond well to the traditional technology-oriented German approach to environmental remediation.[93]

At the time, German industry suggested two potential alternatives to EMAS. First was the idea of a national *Betriebsbeauftragtenwesen* organization. A *Betriebsbeauftragtenwesen* is essentially a company manager, in Germany, responsible for environmental compliance. When particular discharge or emissions levels are exceeded, such as in air or water, companies must appoint a *Betriebsbeauftragtenwesen* in order to facilitate compliance.[94] A second alternative was to raise all Member States to the German standard of environmental protection: an idea eschewed at the time at least in part because Germany is known to have the most stringent environmental standards in the EU. Germany felt that it would devalue the EMAS program if a company complying with the very high German environmental standards received the same EMAS accreditation as did a State which had significantly lower standards.[95]

In addition, according to Heinelt and Malek (2001), there appears to have been a fundamental misunderstanding of the regulatory relief options provided by implementation of EMAS, which may have skewed participation in the system, at least initially. From the outset, the German government implicitly attempted to further the adoption of EMAS by alluding to the fact that German EMAS-registered companies might qualify for deregulation.[96]

> German industry, sensing a new spirit of cooperation from some levels of government, has made its calls for deregulation more concrete, mainly by developing a range of voluntary self-improvement initiatives it hopes will replace strict regulations. In addition, companies are betting that widespread participation in the [EU] [EMAS] could help build trust between industry, regulators and the public—which in turn could be the basis for widespread deregulation.[97]

In addition, "[in Germany] the expectation of a lesser degree of inspection and control or even deregulation following EMAS registration . . . plays a far more important part in determining the popularity of the scheme in Germany".[98] However,

> [a]lthough the issue of deregulation was discussed in the past, it is no longer taken seriously in the academic debate as participation in EMAS aims at enhancing compliance with legal requirements. *A reduction in these requirements for EMAS sites would therefore be somewhat paradoxical* [emphasis the author's].[99]

Germany's tacit position on this issue stemmed at least partly from the main advantage that EMAS had over the ISO 14001 system, in the eyes of the authorities: EMAS had the force of law, since it was put forth by the EU government.[100] Since EMAS arose from a Regulation, it was directly applicable and binding in all EU Member States without the need for any national implementing legislation. However, legislation *is* required at the individual member state level in order to establish an accreditation body to audit the EMAS effectiveness, which has caused some contradictions and potential conflicts of interest, in that the various countries could appoint or create accreditation bodies on their own schedule, which might result in some States being "subject to" EMAS earlier than others, thereby rekindling the competitive disadvantage idea discussed earlier.[101]

As a rough parallel, ISO 14001 was also a "voluntary" standard, but the government could not sanction corporations electing not to pursue registration.

As will be examined later in the text, several countries have in fact made allowances for EMAS registered firms to receive a variety of regulatory relief.[102] Austria, Denmark, Italy, Finland and parts of Belgium offer reduced (environmental) permitting requirements, several German sites, Portugal, Austria and Finland offer reduced inspection schedules, and Sweden, Austria, Demark, several German sites, France, Italy, The Netherlands and Spain all allow EMAS statements (once verified) to be submitted in place of routine monitoring data. In fact, Article 11 of 761/2001 expressly discusses and provides for promotion of the participation of organizations in the Scheme. Specifically:

> In order to encourage organisations' participation in EMAS the Commission and other institutions of the Community as well as other public authorities at national level [*sic*] should consider, without prejudice to Community law, how registration under EMAS may be taken into account when setting criteria for their procurement policies.[103]

From the inception of EMAS in 1995, there was considerable concern in the industrial community over how the heretofore localized national environmental management systems such as the British Standard (BS) 7750, Ireland's I.S. 310, France's X30-200 and Spain's UNE 77-801(2) would integrate, if at all, into EMAS. As discussed in Chapter 1, Great Britain implemented BS 7750 on 16 March 1992, when it replaced BS 5750, to which over 22,000 UK companies were registered.[104] Great Britain intended to use BS 7750 in order to implement the Directive, at least partly because it [BS 7750] "was designed to be compatible with the environmental management systems elements of the EMA[S] regulation, which was being discussed at the same time [BS 7750 was being developed]".[105] However, there were still significant differences. Perhaps most significantly, BS 7750 was company-specific, and not site-specific. Therefore, a firm with 100 sites in the UK either needed to implement BS 7750 at all 100 sites, or not at all. Within EMAS, individual sites can be registered, but the entire firm's operations need not be. "EMAS tends to bring the focus onto environmental performance improvements of a site whereas ISO 14001 concentrates on the EMS as a system".[106] In addition, the auditing cycle is specified in EMAS, but only suggested in BS 7750. A final difference, in the case of EMAS versus BS 7750 is that BS 7750 is open to any sector of the country: EMAS (at that time) was restricted only to industry.[107]

The European Commission (EC) settled this question when it declared that the systems of Great Britain, Ireland and Spain met parts of the burgeoning EMAS; however, it went on to note that these standards would be replaced later in the year by EMAS as an entity.[108] And as noted earlier, since EMAS was nationalized across the entire EU, that meant that there was little "sense" in continuing with BS 7750 or any other country-specific environmental auditing program, as it would be effectively supplanted by EMAS. At this point is also instructive to note again that EU member states, per Article 130T of the SEA, "may be allowed to maintain standards which are more stringent than those approved at [*sic*] EU level".[109] This is parallel to the

individual state's abilities in the United States. States may set standards or regulations that are stricter than the National (usually the EPA—from an environmental point of view), but they can be no weaker. "It is generally considered that enforcement is more effective in the Northern European countries than in Southern Europe".[110] Thus, member states were reluctant to take on additional environmental restrictions, when it was realized that not all firms and/or states that did so would be treated equally, as above.

The main caveat to EMAS when the regulation was adopted on 29 June 1993 was that the program must be *operational* among those firms which chose to implement it by 13 April 1995. That gave companies a mere 22 months to determine if it was efficacious to pursue registration, to conduct all eight elements (described in Chapter 4), implement it, and to have the program recognized by the Competent Body (see Appendix A). "The development . . . of EMAS . . . was motivated by the idea that the pressure of competition would encourage a large number of companies to participate, even if their previous voluntary environmental care was rather small".[111] The EC believed that customers would prefer firms with EMAS registration to those that were not registered, and therefore the marketplace would drive the system forward. Furthermore, "the EMAS program was sold to firms by arguing they may expect an increase in the market share of their products from participating in the program".[112]

However, even as late as 2000, studies existed showing that a large number of firms were unaware that the EMAS system existed.[113] This lack of information is partially the result of the limited ability that firms have in advertising their participation in the program. 1836/93 states that "the statement of participation may not be used to advertise products, or on the products themselves, or on their packaging".[114] "Firms can only advertise their participation in the program through press releases and general (non-product specific) advertisements. This means that in order to benefit from consumer goodwill through participating in the program, individuals must recall which companies and sites belong to EMAS when they are shopping. This is probably asking too much of consumers".[115]

IMPLEMENTATION: QUESTIONS AND CONCERNS

From the outset, many States saw EMAS as an unnecessary duplication of ISO 14001, except that EMAS had the force of law. The primary difference, however, was that if a majority of companies did not elect to pursue EMAS, as noted above, the EC could theoretically require compliance with the Scheme. Compounding that issue, firms maintained that ISO 14001 was, "considered the gold standard in environmental management", and therefore should take precedence, or at least a choice should be given.[116] Corporate managers and others were understandably concerned that they would potentially become registered to EMAS, and it would have little value (from a public relations/"good neighbor" standpoint) outside of the EU. The scheme is intended to encourage companies to take individual responsibility for environmental

protection, and thereby stimulate and support a self-governing capacity in society. Companies which have become involved have expected something in return for their engagement . . . In particular they are looking for advantageous terms from banks and insurance companies as well as from the state.[117]

A 1997–1998 study of German industry (674 sites) by Heinelt and Malek revealed the following information which, although specific to Germany, is representative of the larger EMAS sentiments EU-wide:

> The most frequently mentioned reasons for participation in EMAS were to improve environmental protection strategies and to enhance the image of the company. Other reasons included organizational improvement and legal safeguards. These were followed by cost considerations, staff morale, anticipated competitive advantage and customer or official expectations.[118]

Heinelt and Malek discovered that 77.8%, or just over 524 of the 674 firms, stated that participation in EMAS had been worthwhile, while a mere 2.5%, or only 17 firms, would not reregister to the Scheme.[119]

This study draws upon the sentiments of firms from several years earlier, in which several "key drivers" for implementing EMAS were identified by the companies themselves. These were divided into "internal" and "external" drivers:[120]

Internal Drivers

1. Top management of the firm was attracted to the potential for cost savings, improving relations with regulatory authorities and for projecting the company as environmentally responsible;
2. A goal of having a single "approach" to the environment;
3. To sustain and improve environmental performance, to improve the recording of environmental incidents, improve recordkeeping (relating to permit limitations) and an overall cost reduction strategy (see below);
4. An apparent success with the implementation of ISO 9000; firms believed that a similar level of success could be reached with EMAS;
5. For UK firms, as discussed elsewhere, EMAS was perceived as a logical step from BS 7750.

External drivers

1. Overall credibility;
2. Customer-specific requirements, and a need to meet those requirements;
3. A desire to enter the European Market [although EMAS is not mandatory to do so];
4. A unique opportunity to avoid "command and control" regulations, and establish a more cooperative and less burdensome relationship with regulators.

> The real motives for participation are improved public image and pressure from the customers. Also internal advantages have been proven to be worth the effort of participating. Large companies often require EMAS participation from their small and medium enterprise suppliers (TEKES). German car manufacturers, for example, welcome EMAS

participation by their suppliers, although they do not go as far as Volvo, which made it a condition that their suppliers be registered with EMAS by mid 1997 . . . [121]

COSTS

Another crucial aspect to the acceptance and implementation of EMAS was the cost of doing so. While the manifest goal of the Scheme, in addition to establishing a common environmental protection policy, was that "strict measures can be adopted without running up against the problem of imposing disproportionate costs on the industry of any one Member State", this was not always the case.[122] "Strict interpretation of the polluter pays principle, for example, would require all environmental costs to be internalized in the price of products and services . . . ".[123]

As of 1998, "companies that have not attempted any form of eco-audit must spend between Ecu50,000 [European Currency Unit, the precursor to the Euro] and Ecu100,000 per site before certification is received".[124]

With the groundwork of the environmental legislation in the European Union now firmly established, we may turn our attention to the specific requirements of EMAS, examining the requirements of the various elements and evaluating them from a critical perspective.

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CHAPTER 3

CREATION AND EVALUATION OF THE EMAS PROGRAM

"You cannot affirm the power plant and condemn the smokestack, or affirm the smoke and condemn the cough".

—Wendell Berry, The Gift of the Good Land, 1981

Those individuals involved in the EMAS program since its inception in 1995 will note that there have been two versions of the Scheme: "EMAS", known by its legislative designation of EEC 1836/93, and the current (having superseded 1863/93) "EMAS II", known legislatively as EC 761/2001. Those unfamiliar with the original EMAS program might well wonder why the Scheme was revised within only approximately 5 years. Before moving forward into the current Scheme, it is useful to examine the impetus for change. This will present a more holistic view of the benefits (and shortcomings) of both systems.

> Beginning in the mid 1990s, ISO 14001 and EMAS . . . became very much in vogue as the tool for demonstrating environmental responsibility in the global marketplace. Consultants jumped on ISO and EMAS as the next opportunity in a mature market no longer driven by regulatory dynamics.[1]

"Formally" beginning in 1997, but in concept actually commencing much earlier, European industry began to assert that the requirements of EMAS, while valid and viable, were in fact very similar to ISO 14001, and therefore amounted to an unnecessary duplication of effort by firms seeking both certifications. Granted, based on this position, the actual "work" of the standards only had to be undertaken once, but the cost of obtaining and maintaining two registrations, if desired, began to become burdensome even to large corporations with significant resources.

As a result, on 16 April 1997, the European Commission declared that the requirements of ISO 14001 met *some* of the requirements of the EMAS program.[2] ISO 14001 was accepted as fulfilling *only* the environmental management system provisions of EMAS.

> This recognition include[d] a clear statement of the requirements ISO 14001-certified companies have to fulfill to become EMAS registered, including registration, the publication of a validated environmental statement, compliance with other environmental regulations and the specific environmental aspects to be addressed in the environmental review and audits.[3]

As a result, the cost of obtaining the "opposing" registration by companies that already held either EMAS or 14001 was considerably lowered. "As a result, almost all EMAS-registered companies in these countries [EU, except for Germany] are also ISO 14001 certified".[4]

However, it is crucial to realize that ISO 14001 and EMAS are *not* identical. Therefore, a firm cannot register to ISO 14001 and assume that *de facto* they will be registered to EMAS. For example, on a very fundamental level, EMAS requires the publication of an environmental statement, as we have seen. There is no corresponding requirement under ISO 14001.

Table 1 highlights some of the parallels between the ISO 14001 and EMAS requirements:[5]

Table 1. Parallels between ISO 14001 and EMAS

System Element	ISO 14001	EMAS
Environmental Management System	4.1	Annex I Part B
Preparatory environmental review	Annex A3.1—guidance only	Article 3 Paragraph B, Annex I Part C
Environmental Policy	4.2	Annex I Parts A and D
Environmental Aspects/Effects	4.3.1 / 4.3.2	Annex I Part B3, Part D2/3
Objectives and Targets	4.3.3	Annex I Part A4
Environmental Management	4.3.4	Annex I Part A5
Organization and Personnel	4.4.1 / 4.4.2 / 4.4.3	Annex I Part B2, Part D11
Manual and Documentation	4.4.4 / 4.4.5	Annex I Part B5
Operational Control and Emergency Preparedness	4.4.6 / 4.4.7	Annex I Part B4, Part D6/7/8
Monitoring and Corrective Action	4.5.1 / 4.5.2	Annex I Part B4
Records	4.5.3	Annex I Part B5
EMS Audits	4.5.4	Annex I Part B6, Annex BII
Management Reviews	4.6	Annex I Part B1
Environmental Statement	Not applicable	Article 5

In addition, in 1995 a U.S. consulting firm, Benchmark, was commissioned by the European Environmental Bureau to assess the environmental merits of ISO 14001. Benchmark made the observations that:[6]

- [a] company certified according to ISO 14001 cannot demonstrate that it has good environmental, health and safety performance because environmental performance as conceived by this standard relates only to the measurable performances of the environmental management systems. *ISO 14001 is a specification standard for verifying only conformity with an organization's own environmental policy, not of environmental performance in general* [emphasis the author's].
- . . . the only provision for transparency is that companies "shall *consider* processes for external communication" [emphasis the author's].

- ISO 14001 does not require transnational corporations to meet the environmental standards of their home country everywhere in the world [although this may or may not reflect stringent requirements, depending upon the home country]. Rather, companies only have to apply local/national standards—a very disappointing result for an international standard.

There can be observed six main differences between EMAS and ISO 14001:[7]

1. Where ISO 14001 remains vague in its terminology, EMAS is clear;
2. Unlike ISO 14001, EMAS' audit checks for improvement of environmental performance rather than environmental system performance;
3. The EMAS system is based on the results of the initial review [it mandates compliance with environmental standards and regulations, which ISO 14001 does not];
4. ISO 14001 speaks about "environmental aspects" and not about "environmental effects" or "impacts" as EMAS does;
5. ISO 14001 envisages a "commitment to legal compliance". A "provision to legal compliance" (EMAS) is stronger, i.e. a firm will need to indicate [*sic*] time scale, as well as human and financial resources. "Provision to legal compliance" is more than what many sites currently achieve. This requirement will make them act responsibly and gives them enough flexibility to plan for their compliance;
6. ISO has laid down no requirement concerning audit frequency and the relevance of past activities.

Recognizing industry's concerns regarding the two standards, the European Standards Body (ESB) was given a mandate in 1998 to discover how, if at all, the two systems would relate. Among the most challenging aspects of the project was to convince the EC that EMAS should exist in its own right, and not simply become a part of ISO 14001.[8]

The ESB ultimately published guidelines directed toward firms who wished to move from ISO 14001 to EMAS. However, at the same time, the European Chemical Industry Council (CEFIC), announced that it would continue to focus on ISO 14001, stating that "ISO is a certificate to the outside world".[9]

In mid-1998, the European Commission on the Environment "voted unanimously to allow companies certified under the ISO 14000 environmental management system to qualify for the [EMAS]".[10] Once the motion was approved by the European Committee for Standardization (CEN), CEN would be responsible for detailing in guidance documents what companies with ISO 14001 certification would need to do to become EMAS registered.[11]

The European Commission (EC) began preparing a draft of a revised EMAS standard in mid-1998. The EC's Environmental Directorate, DGXI, was focused on broadening the scope of the program from industry-only to all businesses.[12] By early 1999, the European Parliament approved amendments to the EMAS program that would force registered firms to improve their environmental performance.[13]

On 13 February 1999, the new EMAS regulation was approved by the Council of Ministers in Brussels. It was followed the next day with approval by the European Parliament meeting in Strasbourg. Twenty-seven amendments were incorporated into the new regulation. In addition, "The European Commission will report on the functioning to Parliament and the Council at least every three years. Checking compliance with relevant environmental legislation should also be part of the audit process".

Dubbed "EMAS II", EC Regulation Number 761/2001 was at least implicitly designed to meet the requirements of Directive 2001/42/EC, which required, among other aspects, " . . . ensuring that, in accordance with this Directive, an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment".[14]

On 24 April 2001, the European Parliament published the regulation, "allowing voluntary participation by organizations in a Community eco-management and audit scheme (EMAS)". EC 761/2001 was designed to address many of the criticisms received with respect to the EMAS system, and to make it more palatable to the EU, especially in the face of the significantly more (globally) accepted ISO 14000. EC 761/2001 also replaced the earlier EDC 1836/93.

EC 761/2001 noted that "[t]he experience gathered from the implementation of Regulation (EEC) No 1836/93 should be used to enhance the ability of the Community eco-management and audit scheme (EMAS) to bring about an improvement in the overall environmental performance of organizations".[15] Furthermore, it directed that "EMAS should be made available to all organizations having environmental impacts, providing a means for them to manage these impacts and to improve their overall environmental performance".[16] Finally, it specifically addressed the concerns of the Danes, and also the findings in the "Biondi Study" , which will be explored in detail in the chapter on small and medium sized enterprises (SMEs), when it noted "It is important that small and medium-sized enterprises participate in EMAS and that their participation should be promoted by facilitating access to information, to existing support funds and to public institutions and by establishing or promoting technical assistance measures".[17]

EC 761/2001 also addressed the synergy between ISO 14000 and EMAS by stating " . . . organizations which have a certified environmental management system [i.e. ISO 14000] . . . do not need to conduct a formal environmental review when moving on to EMAS implementation . . . "[18] This was the EC's attempt to satisfy the detractors who believed that ISO 14000 was a better choice, from a business standpoint, since it was globally recognized. EC 761/2001 went even further, declaring that "Organizations implementing . . . international standards . . . and certified . . . as complying with those standards shall be considered as meeting the corresponding requirements of this Regulation . . . "[19] Finally, Annex I of EC 761/2001 specifically cited ISO 14000, relative to EMAS, when it stated "The environmental Management system shall be implemented according to the requirements given below (section 4 of EN ISO 14001:1996)".[20]

Again, however, the mandate for environmental regulatory compliance remained paramount: "If a competent body is informed by the competent enforcement authority

of a breach by the organization of relevant regulatory requirements regarding environmental protection, it shall refuse registration of that organization or suspend it from the register as appropriate".[21]

Some of the major differences between EMAS and EMAS II are as follows:

1. "EMAS [II] nevertheless continues to differ from ISO 14001 in its depth and requirements as regards [*sic*] legal compliance, communication and environmental performance".[22]
2. EMAS II is applicable to the entire organization, but the environmental statement published will need to inform the public as to what part(s) of the organization are registered to the new standard, so there is not an impression that more that that aspect(s) is registered.
3. EMAS II defines more clearly and precisely what are considered "indirect" and "direct" aspects. "Indirect aspects are those which the organization does not have full management control of or which occur at a distance".[23] Examples of such include product-related issues, capital investments, loans and insurance services.
4. EMAS II provides for a visible and recognizable EMAS logo
5. Involve employees (more) in EMAS program
6. Strengthen the role of the environmental statement to enhance communication between the organization and the public
7. Quality control of environmental verifiers
   EMAS verifiers must be reviewed, at a maximum of 24 month intervals, to ensure that they are current in accreditation requirements
8. Support to SMEs is specifically provided for by the regulation

Now that a firm foundation has been laid in order to understand the impetus for the creation of the EMAS program, as well as its revision, we can begin to delve more deeply into its fundamental requirements. In addition, examples of several sites within Akzo Nobel Incorporated, the author's parent firm, will be employed, in order to illustrate how various entities have chosen to comply with the requirements of the Scheme.

Article I of 761/2001 lays out very clearly the objectives of the EMAS scheme. It is instructive to examine these objectives before moving into the "hows" of the implementation, in order to provide a firmer understanding. These objectives are as follows:[24]

1. *A Community eco-management and audit scheme allowing voluntary participation by organizations, hereinafter referred to as 'EMAS', is hereby established for the evaluation and improvement of the environmental performance of the organizations and the provision of relevant information to the public and other interested parties.*

This aspect is fairly self-evident in its language. Items of note are that the Scheme still retains its three "key" criteria, as originally set out in 1863/93: its voluntary nature, the requirement of improvement of environmental performance, and the mandate to make public "relevant [environmental] information" to the public.

2. *The objective of EMAS shall be to promote continual improvements in the environmental performance of organizations by:*
   a) the establishment and implementation of environmental management systems by organizations as described in Annex I;[25]

Again here we begin to see the rudiments of the continual improvement program for which EMAS has become famous (or infamous, depending upon one's point of view). The manifest goal of the program is to provide a vehicle to ensure that a firm continues to improve in its environmental performance—read: compliance—on an audit to audit or year to year basis. As discussed in subsequent chapters, the question arises as to what is considered "continual improvement"? Is a 1 ppm reduction in the phosphate content of a site's wastewater discharge considered "improvement"? Granted, on face, yes. However, what if the site's permit limitation is 10 ppm, and they have consistently averaged 20–30 ppm? Is a 1 ppm reduction them "improvement"? It is a reduction in the amount which the permit is exceeded by, but is the reduction itself significant enough to have any real impact? These are questions a verifier may well determine by him or herself.

Annex I defines the "Environmental Management System Requirements", which spell out the criteria for establishing and maintaining an EMS.[26] Simply put:

The organization shall establish and maintain (a) programme(s) for achieving its objectives and targets. It [the programme] shall include:

(a) Designation of responsibility for achieving its objectives and targets at each relevant function and level of the organization;

One may logically ask, then, how may this structure and responsibility determined and/or provided? Annex I (I-A.4.1) provides significant information:

- *Roles, responsibility and authority shall be defined, documented and communicated in order to facilitate effective environmental management;*[27]

As will be examined elsewhere in this text, the question arises as to what is considered "effective" environmental management. Is it the absence of notices of violation from the authorities? Is it the lack of exceedances of discharge limitations and/or permit limits? Or is it something else altogether? I-A-4.1 allows the organization the flexibility to make these determinations themselves, but the wise firm will consult with the verifier before making a final decision on the aspects, to ensure that there will not be an issue when it comes time for the verification audit.

- *Management shall provide resources essential to the implementation and control of the environmental management system. Resources include human resources and specialized skills, technology and financial resources.*[28]

This aspect, similar in many aspects to those in various other schemes and standards, such as ISO 9001 and ISO 14001, for example, essentially "locks in" management to providing the necessary resources to ensure the birth and development of the EMAS program. Under this provision, management of the firm cannot simply excuse the lack

of funding, technology or other aspects relative to EMAS by stating that they are simply not available. Rather, there must be an express commitment, manifested in this element, to the program. However, the degree of resources to be applied remains at the discretion of the firm (management). For example, a firm might decide—in the abstract—that the only effective way for them to implement the EMAS program is to employ a former verifier formerly engaged by a third-party verification firm, or a former member of the Competent Body of the Member State. While this may seem somewhat unusual, countries such as the United States make it somewhat commonplace. It is not at all abnormal for law firms, government lobbying bodies, etc. to employ individuals formerly engaged in the very agencies with which the firms have business relationships. Returning to the example of the firm, management could make the business determination that to hire such a person is prohibitively expensive, unnecessary, etc. However, they would be willing to have the internal "champion" of the program attend courses in environmental auditing. Thus, through this negotiation, the aim of the Scheme (relative to this element) is achieved and maintained, but the firm retains its ability to set the "ground rules" for its implementation.

- *The organization's top management shall appoint (a) specific management representative(s) who, irrespective of other responsibilities shall have defined roles, responsibilities and authority for:*
  - *Ensuring that environmental management system requirements are established, implemented and maintained in accordance with this International Standard;*
  - *Reporting on the performance of the environmental management system to top management for review and as a basis for improvement of the environmental management system.*[29]

Again, this aspect and information is common to the various ISO standards as well. In sum, they ensure that the firm designates at least one person who can serve as the "contact point" for, or "champion" of, the EMAS program. In other words, a responsible party to whom questions, concerns and other items can be directly addressed. In addition, individual/individuals must communicate the information regarding how the EMS is performing to the firm's "top" management. In the case of a SME, for example, that "top management" may simply be the owner of the firm. In the case of a multinational or global firm, such as Akzo Nobel, "top management" may be represented by the Board of Directors or other such entity. Bear in mind that the Scheme does not require that the management representative necessarily communicate the information directly or first-hand to the top management; rather, only that he or she "report". In the current organizational climate, this can be accomplished by a memo, an e-mail message, a formal presentation, or other similar means.

The details of such a "Management Review" are spelled out in Annex I-A.6 of 761/2001:[30]

The organization's top management shall, at intervals that it determines, review the environmental management system, to ensure its continuing suitability, adequacy and effectiveness. The management review process shall ensure that the necessary

information is collected to allow management to carry out this evaluation. This review shall be documented.

The management review shall address the possible need for changes to policy, objectives and other elements of the environmental management system, in light of the environmental management system audit results, changing circumstances and the commitment to continual improvement.

Returning to I-A.3.4, the other criteria for establishing and maintaining a programme for achieving the objectives and targets is:

(b) The means and timeframe by which they are to be achieved.

If a project relates to new developments and new or modified activities, products or services, programme(s) shall be amended where relevant to ensure that environmental management applies to such projects.[31]

In other words, the organization is responsible for determining how it will achieve the objectives and targets set out under Article 3, 2(a), and for assigning responsibility for that achievement at each function and level of the organization. Simply stating that the firm will comply with the objectives and targets is not enough; rather, there must be a *documented* assignment of tasks, with the accountability which results from such assignment, and a defined timeframe to accomplish the items within. Furthermore, new activities, if one defines them as those which have been implemented after the environmental management programme has been established, must also be subject to the same requirements and scrutiny as those which were in place prior to the implementation.

Returning to Article I of 761/2001 and its discussion of the objectives designed to promote continual improvement, we see the second item:

b) the systematic, objective and periodic evaluation of the performance of such systems as described in Annex I;[32]

Again drawing upon the requirements of Annex I, the implementing firm must determine, along with the verifier, how the site will be audited, procedurally, and at what frequency. With respect to this later point, 761/2001 interestingly does not mandate the frequency of external audits of the Scheme, defined as those in which parties from outside the firm audit the program. Annex II of 761/2001 does mandate that "the audit or audit cycle shall be completed, as appropriate, at intervals no longer than 3 years".[33] However, this is defined as an *internal* audit frequency only.

c) the provision of information on environmental performance and an open dialogue with the public and other interested parties;[34]

As outlined above, this is both one of the aspects of 761/2001 which remained intact from 1863/93, and also the only significant difference between the requirements of ISO 14001 and EMAS. Under the requirements of EMAS,

> The information generated . . . which forms the environmental statement for an organization and the updated information specified in point 3.4 shall be available to the public and other interested parties. The environmental statement shall be made accessible to the public. To this end, organizations are encouraged to use all methods available (electronic publication, libraries, etc.). The organization shall be able to demonstrate to the environmental verifier that anybody interested in the organization's environmental performance can easily and freely be given access to the information required . . . [35]

> *d) the active involvement of employees in the organization and appropriate initial and advanced training that makes active participation in the tasks referred to under (a) possible. Where they so request, any employee representatives shall also be involved.*[36]

Apart from the requirements to produce an annual environmental report that is understandable by and available to the general public, and the direction toward legal compliance, EMAS essentially does not require any additional management actions to control a company's environmental impact beyond the requirements of ISO 14001. What EMAS does add is to make the company's commitment to environmental management high profile and public: this is a powerful incentive to maintain a good environmental performance.

The central "theme" of the EMAS program is the development of an environmental management system (EMS). Ulrich Steger (2000) provides a solid definition of an EMS as "a transparent, systematic process known corporate-wide, with the purpose of prescribing and implementing environmental goals, policies, and responsibilities, as well as regular auditing of its elements".[37]

MacLean (2004) sets out several items to be considered when evaluating whether an EMS is "effective" for a particular business application.

> The starting point for evaluating an EMS is to define a framework that can be used to assess current activities. It is not important that the company has actually built its system around the particular framework chosen. What is essential is that the evaluation framework needs to be robust and contain all of the critical elements that drive performance.[38]

When it comes to the various elements and requirements of the EMAS program, the individual manager or department may well be overwhelmed by the amount of information required and uncertain as to a starting point for the process. Perhaps this is an appropriate time to examine the documentation requirements outlined in I-A.4.4 of Annex I (761/2001). The specific requirements are as follows:[39]

> *The organization shall establish and maintain information, in paper or electronic form, to*
>
> *(a) describe the core elements of the management system and their interaction;*

In effect to, as most organizations have chosen to do, create a "manual": which delineates the core elements of the system and describes how they will interact.

> *(b) provide direction to related documentation*

The documentation concept is presented here, but it is further fleshed out in the ensuing section of Appendix A. It directs the organization to provide information on how its documentation should be managed. For example, are certain documents deemed to be, or needed to be, controlled? If so, how is that managed? Who has the authority, or responsibility, to initiate such changes?

To that end, item I-A-4.5., Document Control, should be examined at this time as well. As an aside, the reader might wish to compare this language to that of the similar element in ISO 9001 and ISO 14001 as well. The parallels are interesting, and for good reason:

> *The organization shall establish and maintain procedures for controlling all documents required by this International Standard to ensure that*:[40]
>
> *a. they can be located;*
> *b. they are periodically reviewed, revised as necessary and approved for adequacy by authorized personnel;*
> *c. the current version of relevant documents are available at all locations where operations essential to the effective functioning of the environmental management system are performed;*
> *d. obsolete documents are promptly removed from all points of issue and points of use, or otherwise assured against unintended use;*
> *e. any obsolete documents retained for legal and/or knowledge purposes are suitably identified*
>
> *Documentation shall be legible, dated (with dates of revision) and readily identifiable, maintained in an orderly manner and retained for a specified period. Procedures and responsibilities shall be established and maintained concerning the creation and modification of the various types of documents.*

For the reason outlined at the beginning of this section, coupled with the fact that such language is largely self-explanatory, further discussion of this section will not be provided. Significant guidance and other supporting information can be obtained from a variety of sources, given the vast similarity in language between this section and ISO 9001 and ISO 14001.

In order to make this course of action more manageable, the European Commission describes the fundamental requirements of the EMAS program as the "continuous improvement circle or PDCA-circle (Plan, Do, Check, Act)".[41] The PDCA circle is presented in Figure 1.

The "PDCA Circle" clearly defines the topics and interrelations of EMAS. As illustrated above, the Initial Environmental Review of the site is the lynchpin of the entire system. Intuitively, in fact, one realizes that without having a firm grasp of the issues, activities and impacts occurring at a particular site, all subsequent actions and requirements of the Scheme are moot. A firm cannot set an environmental policy, and the means to attain continual improvement, for example, if this baseline is not established.

Figure 1. PDCA circle[42]

The central box of the "PDCA Circle" is necessarily a sort of continuous flow diagram. By this, it can be observed and understood that the four aspects—the "Environmental Policy and Programme", the "Environmental Management System" (EMAS), the "Environmental Audit" and (subsequent) "Corrective Actions" are inherently cyclic. In other words, in terms of these four aspects, there may be a beginning point—the "Environmental Policy and Programme", but there is not a defined ending point per se. Rather, since continual improvement is mandated by the Scheme (Article I(2)), the Policy and Program will lead to the development of a management system, which will in turn lead to an audit of that system, which will beget corrective actions. After these corrective actions are decided upon/implemented, the Policy and Programme may need to be changed in order to accurately reflect the actions. Thus, the cycle begins anew.

However, once the central box achieves a sort of equilibrium, in that the four elements of the system have been revised sufficiently to where they have achieved a sort of "steady state" (not a *static* state, as this would imply that the Scheme was not dynamic), the firm is ready to issue the Environmental Statement for the site, and subsequently to present it for "Validation and Registration" by the Competent Authority.

Keep in mind, however, that the "PDCA Circle" is not to be viewed as a static process, one which exists in a vacuum. There is no real ending point, although the Circle may give that impression, as continual improvement is required by EMAS.

> No company truly needs . . . an elaborate system of items [in its EMS]. The challenge is to determine the activities that really matter, based on the company's business objectives . . . The first major hurdle in a review of this type is often deciphering what top executives and the board of directors really want . . . Some probing and education may be in order before a clear set of EMS performance objectives can be established.[43]

Throughout the text, "real world" examples of EMAS implementation will be drawn from three of Akzo Nobel's EMAS-registered facilities in Europe; specifically, Gillingham, UK (Akzo Nobel Chemicals Ltd.), Alby, Sweden (Eka Chemicals AB) and Boras, Sweden (Eka Chemicals AB). The purpose of these examples is to illustrate to the reader various means of achieving the requirements of EMAS. In other words, there is not necessarily one way, or even one "best" way, to meet the various elements. Even within the same company, varying (and equally valid) methods are used.

Akzo Nobel, the parent company of Eka Chemicals, is active in three business areas: Pharmaceuticals, Coatings and Chemicals. Headquartered in the Netherlands, the company has activities in more than 80 countries and employs approximately 64,500 people, with sales in 2003 totaling EUR 13.1 billion.[44] Eka Chemicals, a sub-business unit of Akzo Nobel's chemicals group with 896 MEUR in sales for 2003, is a leading supplier of chemicals to the pulp and paper industry.

Akzo Nobel Gillingham Site Gillingham is part of the business unit Polymer Chemicals, within the chemicals group of Akzo Nobel. The site was officially opened as Novadel Ltd., in January 1938 for the production of white lead, associated paint products and additives for the flour milling industry. The 18 acre site on the banks of the River Medway in Kent was one of four major organic peroxide producing locations within the EC operated by Akzo Nobel's Chemical Group.

Five major manufacturing units, with several minor units produce specialty chemicals including organic peroxides for the plastics and rubber industries and a monomer for the production of an organic glass for the optical industry. The site also serves as a UK distribution center for other Akzo Nobel products produced outside the UK.

Eka Chemicals' Alby (Sweden) plant manufactures potassium chlorate, sodium chlorate and hydrogen peroxide. Potassium chlorate is used in manufacturing matches and is delivered to customers across the world. Sodium chlorate and hydrogen peroxide are used primarily in bleaching of pulp to manufacture paper. The majority of Alby's customers are based in the Nordic countries.

Eka Chemicals' Boras (Sweden) site on Gasslosa Industrial Park, approximately one kilometer from downtown Boras, manufactures and delivers chemicals to the paper industry. Boras' products are used by paper mills to make paper water repellent, i.e. food containing packages.

As laid out in Article 1, the manifest goal of the Scheme is to evaluate the environmental performance of industry, to have it be improved upon, and to provide information on these aspects to the public.

Before a firm decides to pursue EMAS registration, there are two "pre-steps" which should be undertaken, in order to (1) ensure that the firm is aware of whether it has a reasonable chance of "passing" the registration audit, and (2) to establish a reference point—or "benchmark"—as to where the firm is beginning its journey toward registration. This second point will be particularly useful in the future, when the firm is required to document "continual improvement" under the Scheme.

The first such "pre-step" is an overall environmental analysis of the organization, involving an "x-ray" of all of the features of the firm which affect the environment, "including its manufacturing processes, its products and services, its buildings and

equipment and its legal context (statutory environmental obligations) and its existing practices or procedures with regard to the environment . . . "[45]

After thoroughly evaluating the organization, based on the foregoing, the firm needs to identify and define the "significant environmental impacts", both direct and indirect, of their activities. Once completed, deciding how to manage them can be undertaken. Recall that "continual improvement" is *key* to EMAS; an absence of adequate funding, for example, cannot be used as an excuse for failing to meet these goals.[46]

Whereas Article 2 of 761/2001 sets out the definitions for various terms used in the Directive, this is a purely "administrative" section. Therefore, for the purposes of this text, the discussion will begin with Article 3.

In accordance with Article 3, Section 2(a)–(e), there are five steps which must be completed in order to achieve registration. However, the central aspect of EMAS can be considered to be the environmental policy/environmental policy statement. For that reason, we must first skip ahead in the standard to Annex I, Section I-A-2, which addresses this aspect.

The applicant company must develop an environmental policy for the site which is to be registered to EMAS. Specifically:

Top management shall define the organization's environmental policy and ensure that it

a) is appropriate to the nature, scale and environmental impacts of its activities, products and services;
b) includes a commitment to continual improvement and prevention of pollution;
c) includes a commitment to comply with relevant environmental legislation and regulations, and with other requirements to which the organization subscribes;
d) provides the framework for setting and reviewing environmental objectives and targets;
e) is documented, implemented and maintained and communicated to all employees;
f) is available to the public.

To be certain, this opening section of the EMAS regulation contains a considerable bit of requirements and responsibilities. For clarity, each section will be "deconstructed" and examined in practical terms.

- "Top management" is not defined by the EMAS regulation; thus, it is open to interpretation. Such management may be the Plant Manager, Site Manager, Country Manager (if/where applicable), etc., or it may be at an even higher level of authority, ultimately up the Board of Directors or the company's President.

  Bear in mind that while this term provides for flexibility, the organization must be careful when defining "top management". The overall program must ultimately be approved by the registered verifier, and that entity must be convinced that the commitment is appropriate. In other words, declaring that the Plant Manager is the "top management" for the EMAS program may or may not be appropriate, especially if the President of the company has no idea what EMAS is, that the

firm is pursuing it, and has not committed any resources to the project, may not pass muster with the verifier.

- "Environmental Policy", or "EP" is defined as:

> *. . . an organization's overall aims and principles of action with respect to the environment including compliance with all relevant regulatory requirements regarding the environment and also a commitment to continual improvement of environmental performance; the environmental policy provides the framework for setting and reviewing environmental objectives and targets.*[47]

The European Commission, in its guidance on this point, suggests the following "good ideas" for this aspect:[48]

- Include the environmental policy, and possibly an introduction letter, signed by the Chief Executive Officer (CEO)
- Include an organizational chart with contacts for the environmental representative
- Include a diagram showing the EMS structure
- Comment on any major changes in environmental policy or management system.

The Scheme is unique here, compared to ISO 14001, in that it *mandates* compliance with all environmental requirements.[49] This item is expressly stated in Annex I-B.1 of 761/2001, under "Legal compliance":

> *Organizations shall be able to demonstrate that they:*
>
> *a. Have identified, and know the implications to the organization of, all relevant environmental legislation*
> *b. Provide for legal compliance with environmental legislation; and*
> *c. Have procedures in place that enable the organization to meet these requirements on an ongoing basis.*[50]

This section illustrates that the idea of legal *compliance* is not simply an idealistic one, with "pie in the sky" goals and lofty, verbose language. It is a very real, very tangible section of 761/2001, and one whose ambiguity or commitment cannot be denied.

EMAS also uniquely has the authority to revoke a firm's registration if it fails to comply with environmental regulations.[51] As an aside, this provision was invoked for the first time on 07 March 2003, when the UK Environment Agency (the Competent Authority for Great Britain) suspended the Bradford, UK chemical company AH Marks from the EMAS program. It was the first time the Environment Agency had taken such action. According to the Agency:

> The decision follows investigations by the Environment Agency, which found chemical firm AH Marks and Co. Ltd. of Wyke, Bradford to be in breach of environmental regulations after an unauthorized release of a harmful solvent. Environment Agency officers found a plant on the site being managed badly and discovered that staff were given no proper training in running a new system, which is thought to have contributed to the release. In February 2003, the Agency served an enforcement notice on the company, requiring it to provide written instructions and training for its staff on the process and

> to review other procedures and systems The firm then received formal notification from the IEMA that they have been removed from the register until they rectify matters and put in place robust procedures to ensure compliance.[52]

Given the example of AH Marks, it is useful to examine the EMAS guidance concerning "breaches" at this time. "Breaches" (The "Breach Guidance") loosely defines the actions to be taken if and when an organization breaches the relevant legislation as it pertains to EMAS, although 761/2001 does not specifically define "breach of environmental regulation . . . The European Commission and Member States have agreed the proportionality should be applied so that incidents which are relatively trivial do not lead to the serious step of an organization being removed from the register".[53]

Article 6 of 761/2001 requires the Competent Body to be satisfied that the organization meets all the requirements of EMAS. If the Body is informed by the respective regulators that there is a breach of the "relevant regulatory requirements regarding environmental protection", the registration can be refused or suspended.[54]

> The Competent Body will inform the applicant [here, used to mean the firm at the application stage, but also applicable to subsequent verification audits] of the reasons [registration is being refused or suspended], usually by sending a copy of the response it has received from the regulator. The organization can only be registered or have its suspension lifted once the Competent Body has received assurances from the regulator that the breach has been rectified and that arrangements are in place to prevent its recurrence.[55]

Three examples of a corporate environmental policy are provided in Figures 2–4:

AKZO NOBEL

ENVIRONMENTAL POLICY

Akzo Nobel Chemicals Ltd, Site Gillingham UK, has established and will maintain an environmental management system tofulfill the requirements of EMAS, as a minimum standard. This system, covering all the activities on site, will ensure compliance with current UK environmental legislation, best available practices and achieve a balance between economic, social and environmental responsibilities. We are committed to avoiding damage to the environment by any of our actions or operations.

Site Gillingham is dedicated to continual improvement of environmental performance and efficient use of resources, which will be achieved by setting and ensuring successful implementation of environmental objectives. This policy will be made publicly available through the site annual environmental report and will be understood, implemented and maintained by all levels in the organization.

Source: Akzo Nobel, Site Gillingham (UK)

Figure 2. Akzo Nobel Gillingham environmental policy.

Policy for Safety, Health and Environment at Eka Chemicals in Alby [Sweden]

This policy includes all activities and employees at Eka Chemicals production facility for potassium chlorate, sodium chlorate and hydrogen peroxide in Alby.

The policy is the foundation for SH&E goals and action plans and is reviewed yearly.

1. We will meet and exceed all environmental regulation laws and corporate goals.

2. We will avoid, prevent and limit injuries to people and damages to environment and property.

3. We will work to keep employees healthy.

4. We will always work to minimize influence on the environment by:

Maximizing utilization of raw materials, particularly electricity and fossil fuels

Minimizing waste, noise and releases of chlorate and solvents.

5. We will openly report facts on security, health and environment to employees, authorities and the public.

6. Responsibility for safety, health and environment shall be defined, delegated and known by all employees.

7. We will motivate all employees to demonstrate a personal responsibility for safety, health and environment by providing education and training.

8. Our order of priority is personal safety, health and environment.

9. Every year we will be better in the areas of safety, health and environment.

The policy has been formulated accordance with Akzo Nobel's policy regarding safety, health and environment.

Figure 3. Eka Chemicals Alby environmental policy. (Engberg, M. (2002). Policy för Säkerhet, Hälsa och Miljö vid Eka Chemicals i Alby. [Policy for Safety, Health and Environment at Eka Chemicals in Alby]. Miljöredovisning Enligt EMAS).

Although both the Alby and Boras sites are Eka Chemicals facilities, they have elected to take slightly different routes in the construction of their environmental policy statements. The Alby site employs a somewhat "personalized" version of the policy, while Boras makes use of the corporate Eka Chemicals policy.

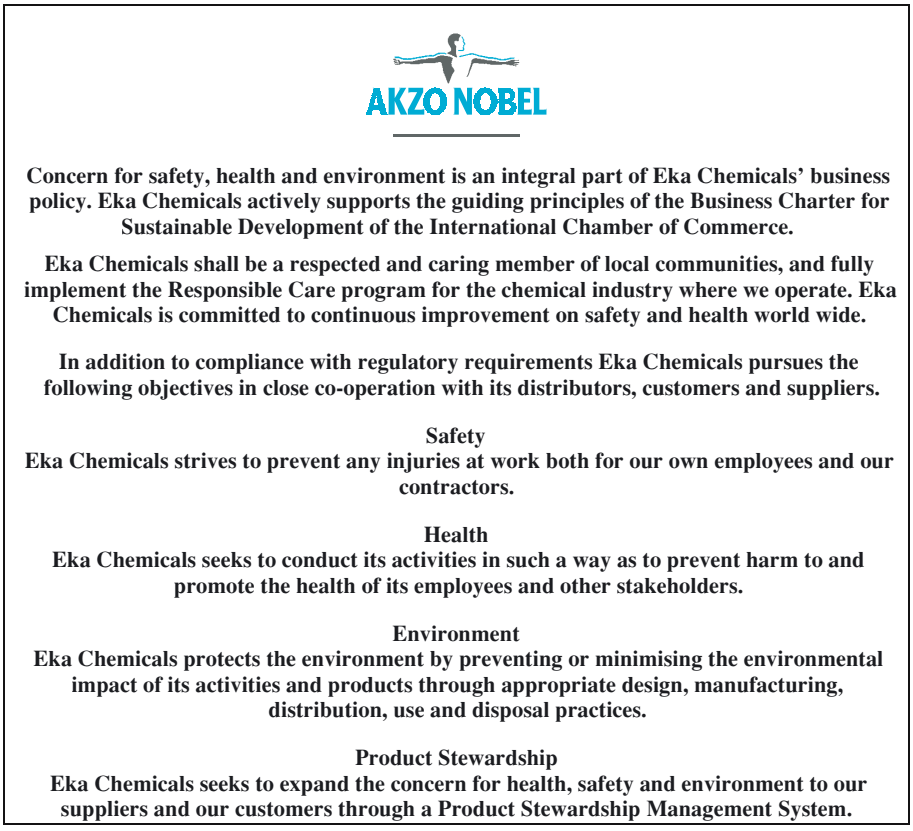


Figure 4. Eka Chemicals Boras environmental policy.

As illustrated in the above examples from the same companies, the EP statements can differ in format, content and structure, as long as they meet the requirements set out in the definition of "environmental policy". Consider the following comparison between the Alby and Gillingham sites:

- *"... including compliance with all relevant regulatory requirements regarding the environment"*

The Gillingham site addresses this requirement by declaring: "*This system, covering all the activities on site, will ensure compliance with current UK environmental legislation ...* ", while the Alby site states "*We will meet and exceed all environmental regulation laws and corporate goals*". While both sites meet the letter of the Scheme in this regard, the scope of their statements is vastly different. Gillingham states that they will comply with all regulations currently in force in the UK. This at least raises the *implication* that the site is primarily focused on the "here and now" of environmental

compliance, leaving the ideas of EU-wide environmental regulation (where appropriate) and future regulations aside. While this may very well be untrue in practice, it does provide the *perception* to the untrained reader that the firm is not looking toward continual improvement.

Alby, however, takes compliance to perhaps the opposite extreme: it discusses meeting and exceeding relevant regulations. An ambitious goal, to be sure. However, one must view such pronouncements very carefully. If the verifier does not find clear and convincing evidence of how the firm *exceeded* environmental regulations, the firm could theoretically be charged with a nonconformance. In addition, the "all environmental regulation laws and corporate goals" language is extremely broad. While it is sound in its intent, again, a registrar might take the statement to its logical extension and examine all environmental regulations, even those which do not apply to the site or firm. Thus, the firm might spend valuable time during an audit discussing how certain cited regulations do not apply to their site, instead of more positive actions.

The "environment" section of Boras' (and, therefore, Eka Chemicals) environmental policy makes the distinction clear: *In addition to compliance with regulatory requirements Eka Chemicals pursues the following objectives in close co-operation with its distributors, customers and suppliers . . . .Eka Chemicals protects the environment by preventing or minimising the environmental impact of its activities and products through appropriate design, manufacturing, distribution, use and disposal practices.*

Environmental policies and their public statements (discussed later) are perhaps the strongest element, in theory, of EMAS. While companies have issued environmental policies and statements for a number of years, there has not been a readily available mechanism to compare and contrast them. The statements were not necessarily validated by a third-party, which EMAS requires them to be. While not providing a completely foolproof or failsafe "certification" that the company is in compliance with regulations and so forth, it is at least a valuable indicator.

EMAS also mandates that the policy be directed toward "reducing environmental impacts to levels not exceeding those corresponding to economically viable application of best available technology" (BAT). In sum, firms employing the Scheme are only obligated, in terms of their statement, to manage and reduce their impacts to a point at which they are *equal to* or *less than* that amount of BAT they can afford. Thus, EMAS imparts a perhaps tacit scaling of environmental protection: a potential boon to smaller firms, but not necessarily one cast in stone. As an example, a firm earning ˚1M is only obligated to impart the "economically viable" level of BAT for itself. Reasonably, that could be only several thousand Euros, for a normal firm. However, a firm earning ˚15 billion would be expected, based on the Scheme, to invest a much higher Euro figure in BAT. The relative percentages of earnings may be the same, but the overall Euro figures are disparate.

The environmental policy must function as an overarching document that clearly defines the goals and principles to which the company has committed, with respect to the environment. The policy statement, according to the European Commission,

should contain at least two main elements: a commitment to comply with relevant environmental regulations and a commitment to continual improvement.[56]

Annex I-A.2 of 761/2001 sets out the requirements of "top management" (they ". . . shall define the organization's environmental policy and ensure that it"):

(a) "*is appropriate to the nature, scale and environmental impacts of its activities, products and services;*"[57]

As with many other auditing programs, defining the scope of the program is crucial to ensuring that it is manageable; that is, that it does not unduly burden the organization attempting to implement it. Additionally, the items "nature, scale and environmental impacts" will most likely be determined during the environmental site review.

The Akzo Nobel Gillingham site sums up this "appropriateness of scale" fairly succinctly: *"covering all the activities on site"*. Thus, one could reasonably conclude that everything at the site is "fair game" to an EMAS verifier. These activities might cover the aspects reasonably thought to be part of an EMAS program, such as production, shipping, raw material purchasing, etc., but could also be extended to the plant cafeteria (wastewater discharge, refuse disposal, etc.), the maintenance facility (off-spec lubricants, hazardous solvents, etc.) and even the grounds services (pesticide treatment, etc.). While there is not inherently a problem with defining the scale of the EMAS program in this manner, the firm must be cognizant of the fact that, again, any aspect is "fair game" for the verifier.

The Eka Chemicals Alby site is similarly structured: "*This policy includes all activities and employees at Eka Chemicals production facility for potassium chlorate, sodium chlorate and hydrogen peroxide in Alby*". Again, the scope of the Policy—and from that the "appropriateness" of the audit content, is somewhat open.

Boras, however, is somewhat more oblique in determining the scope of the policy. The closest language in the document is as follows: *We will actively work with our environmental activity in our operation. In order to make our impact on the environment as small as possible, we use an environmental guidance system named ISO 14001. We work systematically with instructions and progressive reduction of environmental impact. This requires that every year we develop new goals that shall be accomplished, and in the same time we review accomplishment of the goals for the past year. The goals have to be precise, measurable and important for the environment. Our goal for the plant is formulated according to and respecting the Eka Chemicals policy for Safety, Health and Environment.* The Boras document does not appear to directly address the impacts of their activities, other than to say they will make them "as small as possible".

(b) "*includes a commitment to continual improvement and prevention of pollution;*"[58]

This element of the Scheme is largely self-explanatory. Most firms pursuing EMAS tend to use language similar to that of the element itself. The key here is to clearly address the commitment, not to simply imply it.

Gillingham addresses the element well by stating *"Site Gillingham is dedicated to continual improvement of environmental performance and efficient use of resources, which will be achieved by setting and ensuring successful implementation of environmental objectives*". Alby, however, states the commitment in a slightly different way by declaring *"Every year we will be better in the areas of safety, health and environment".* Certainly, however, that should raise the question inherent to the minds of all verifiers: "how will you do this"? How will the Swedish verifier be able to audit compliance to this element? Presumably, he/she will look for statistical trending data, showing an objective means of improvement from year to year, audit to audit. But what items will be evaluated? What makes something "better" than the previous year? Fewer violations/frequency of violations of permits?

Boras again approaches the element from a less common position, stating in the "preamble" from the Plant Manager that

> *. . . to continuously improve, we use goals and programs. One of our larger goals this year is to internally create a broad engagement and a high degree of participation in the ongoing improvement work. The conditions exist, because environmental issues interest and engage many of us. If we succeed, I'm convinced we can have a considerable driving force in our goal program and reach really far.*

The Alby aspect raises an interesting point, and identifies perhaps one of the shortcomings of EMAS. It mandates "continual improvement", but it does not discuss what is considered an "improvement". For example, if a facility has a phosphate discharge limit of 10 ppm in its effluent, and the site continues to discharge in excess of that amount, say 20, 22, and 24 ppm, is a reduction of phosphate content to 18 ppm truly an "improvement"? Of course, on face it certainly is. However, the facility is still over its permit limit by 80%. Granted, this is better than the previous 100%, 120% and 140% amounts, but the firm is still in violation. EMAS is generally unclear on this point.

> *(c)* "*includes a commitment to comply with relevant environmental legislation and regulations, and with other requirements to which the organization subscribes;*"[59]

Little comment is necessary on this element. The only caveat to be aware of is to clearly identify those "other requirements to which the organization subscribes". All organizations have a host of regulatory and other requirements to which they ascribe, such as those placed on the organization by the corporate headquarters, etc. The key is to differentiate between those which are applicable to EMAS (i.e. a commitment to receive zero environmental fines during a period), and those which are clearly not (such as to conduct site accounting in accordance with GAAP). This may seem to be largely intuitive, but failing to make these distinctions could cause questions or issues with the auditor.

An example of these "other requirements" can be viewed in the 2002 environmental report from Eka Chemicals' Boras plant. Here, the firm discusses the SHERA—Safety,

Health, Environment and Regulatory Affairs—requirements put into place by the parent company, Akzo Nobel:[60]

> *In Akzo Nobel a program exists called SHERA . . . SHERA is focused in the fields of Health, Safety and Environment and is also establishing overall goals for the whole company. These goals are then adjusted after each subdivision [sic] . . . .The goals established in the fall of 1999 have to be achieved during the period ending year 2004.*

These goals are as follows:

> *Safety*
> - *LTI (injuries that result in absence from work) shall by year 2002 be reduced to 0.25/100 employees per year. For the year 2004 the same value should be down to 0.20.*
>
> *Environment*
> - *Reduce the amount of organic material to water by 20%*
> - *Reduce releases of carbon dioxide to air by 20%*
> - *Reduce releases of hydrocarbons to air by 20%*
> - *Increase amount of recycled materials by 20%*

While the Boras report continues with various other goals, the safety and environmental ones cited above serve to illustrate the degree of compliance which is requisite by EMAS. Safety, and safety goals, for example, is wholly outside of the scope of the EMAS program. However, due to the directives put forth by Akzo Nobel, the Boras site is obligated to observe and adhere to them. Thus, they must technically be addressed as part of the system's requirements and elements.

> (d) "*provides the framework for setting and reviewing environmental objectives and targets;*"[61]

With this section of the Scheme, we now begin to get into the "meat" of the requirements. Simply put, this is the section of EMAS which requires the specific language and measurable attributes of the entire program. The language employed here will drive and define the aspects which the environmental verifier will review when making his assessment. Language such as *"... which will be achieved by setting and ensuring successful implementation of environmental objectives."* is generally acceptable, but it lacks the specificity of what these objectives are. However, this might be defined later in the environmental report which is presented to the public. In this event, it might be desirable to establish a cross-reference to that document as part of the policy. Such language could read "*which will be achieved by setting and ensuring successful implementation of environmental objectives, as specified in our annual site environmental report"* [underlining the author's].

Annex I of 761/2001 provides some marginally additional insight into the definition of "objectives and targets". *"The organization shall establish and maintain*

documented environmental objectives and targets, at each relevant function and level within the organization".[62] Note that the language used expressly precludes "glossing over" of certain functions and levels of management which the firm does not consider to be "subject" to EMAS by using the word "relevant". Firms may elect to exclude a certain aspect of their operation from consideration under the Scheme, but the term "relevant" gives the auditor the opening to discuss with the auditees if this is in fact an accurate or permissible exclusion. The objectives and targets must always be consistent with the environmental policy, and must continuously work toward the prevention of pollution.

In addition, when the firm sets and reviews these objectives, it shall *always* consider "the legal and other requirements, its significant environmental aspects, its technological options and its financial, operational and business requirements, and the views of interested parties".[63]

The Gillingham facility does outline these objectives in its "Environmental Report 1999 (1998 data)", for example, see Figure 5, for calendar year 1999:

SITE ENVIRONMENTAL OBJECTIVES 1999

To maintain a Waste Minimization Project with the following Targets and Objectives:-

1. To develop a process to give a COD reduction of 60% in the MCPBA Plant waste water by year end.

2. To develop a process to give a COD reduction of 50% from the Nouryset Plant waste water by year end.

3. To complete a survey of untraced COD to develop projects for 2000. The survey is to be completed by the end of September.

4. To meet a 93% overall process yield by year end.

5. To carry out Environmental Refresher Training for everybody on Site in the first quarter of 1999.

Figure 5. Akzo Nobel Gillingham environmental objectives 1999.

Through this section of the Environmental Report, Gillingham has clearly outlined the five criteria upon which it will be evaluated during its required audit, and consequently the areas upon which it will focus its efforts. As an illustration, when we examine the site's 1998 (projected) objectives, we see six objectives, presented in Figure 6.

Then, by evaluating the "Environmental Report 1999 (for 1998)", we can then evaluate how well these objectives were met.

SITE ENVIRONMENTAL OBJECTIVES 1998

To start a Site waste and energy minimization project to include:-

1. To carry out a Site Survey to review potential waste and energy minimization areas and targets.
2. Optimize process yields by setting up a site team to identify improvement areas, to achieve a 93% raw material conversion efficiency.
3. To install a product recovery system in the Percarbonate Plant to improve perester yields by 2% over 1997.
4. To optimize site waste treatment processes to minimize the use of treatment raw materials and reduce costs by £100K.
5. To evaluate the installation of a CHP unit, to improve the sites indirect energy conversion efficiency.
6. To reduce energy used to produce steam by 5% compared to 1997 by optimising the use of natural gas to produce steam for the site.

Figure 6. Akzo Nobel Gillingham environmental objectives 1998.

REVIEW OF 1997 AND 1998 SITE ENVIRONMENTAL OBJECTIVES [GILLINGHAM SITE]

To start a Site waste and energy minimization project to include:-

1. To carry out a Site Survey to review potential waste and energy minimization areas and targets.

   This work was completed during the year and has been used as the basis for the 1999 Environmental Objectives and Targets.
2. Optimize process yields by setting up a site team to identify improvement areas, to achieve a 93% raw material conversion efficiency.

   This target has not been achieved due to the late completion of the solid PUK waste recovery project and approval of the Percarbonates Recovery Project which will be completed in 1999.
3. To install a product recovery system in the Percarbonate Plant to improve perester yields by 2% over 1997.

   This project is awaiting financial approval but will be completed in 1999.
4. To optimize Site waste treatment processes to minimize the use of treatment raw materials and reduce costs by £100K.

   The PUK process has reduced its solid waste to be incinerated by 36 tonnes in 1998. This has produced a saving in excess of £100,000 in 1998. Product recovered from this process is recycled.

5. To evaluate the installation of a CHP unit, to improve the Site's indirect energy conversion efficiency.

   This study was carried out, but found to be uneconomic and inefficient for our Site. The Unit would have produced approximately 800 kW of energy as hot water, which was not able to be used on Site due to the nature of our processes.

6. To reduce energy used to produce steam by 5% compared to 1997 by optimising the use of natural gas to produce steam for the Site.

   There was a reduction of 7.5% for energy produced by the boiler per tonne of product produced. Natural Gas was used by the boiler all year, except for testing purposes.

7. *Household Waste to Landfill to 140 tonnes in 1997.*

   Household Waste to Landfill to 140 tonnes in 1997 reduced to 127 tonnes in 1997 compared to 153 tonnes in 1996. No target was set for 1998 and although all recycling initiatives were maintained there was an increase to 160 tonnes in 1998. This was mainly due to Plant refurbishments and modernizations.

(e) "*is documented, implemented and maintained and communicated to all employees;*"[64]

In concert with the previous element, this is another critical aspect of the Scheme, in that it serves as a "driver" for the entire program. It is one thing to establish a framework around which the program will be designed and implemented, but if such is not documented, implemented, maintained or communicated to all affected personnel, then the entire concept of having such a program is moot. It becomes, or remains, just another "book on the corporate shelf".

Obviously, these four aspects can take a variety of forms. *Documentation* is perhaps the easiest, in that it clearly outlines the "dos" and "don'ts" of the program, and can be a fairly effective means of communicating the segments of the program to the appropriate personnel. However, an astute verifier will examine the *means* by which documentation takes place. For example, if a procedure is written governing the unloading of tanker trucks containing raw chemical materials that may well be acceptable. However, if the same procedure is not "complete", in that it leaves gaps in the process or allows for the potential of a fair amount of error—and therefore environmental damage—the verifier may determine that the procedure has not been well-documented.

Consider the same scenario, in which there are 5 hypothetical steps to the unloading process. Step 4 is the step in the process which begins the flow of material from the discharge vehicle into the storage tank. Assume company policy requires the unloading line which connects to the storage tank to have its discharge valve opened before material begins to flow from the delivery vehicle. Otherwise, the resultant pressure could either cause the hose to come loose or to potentially discharge over the operator(s). In either event, there could be a reasonable amount of environmental and/or health and safety-related damage. If the procedure does not contain references to the discharge lines being opened before release, the verifier could well determine the procedure is incomplete,

and has the potential for environmental damage. Thus, even though the procedure has been documented, it does not become *de facto* "acceptable".

One caveat regarding documentation, which has been echoed with regard to several of the ISO series of standards, is to be cautious, or efficient, in the creation of documentation. Implementation—and communication—of the program is also key.

Secondly, the verifier will be looking for specific examples that the program has been clearly *implemented*, and also *communicated*, to not only those employees who's areas of the facility are subject to EMAS, but to *all* members. It is entirely plausible that a well-trained verifier will examine roles which may traditionally not be thought of as being part of the Scheme, such as the reception desk (spills or other releases may require a specific response on his/her part, and those responses (or lack thereof) can contribute to (further) environmental issues), finance and accounting (capital investments may affect the environment; for example, such actions normally precede large-scale construction projects, which may well have an environmental impact as part of their construction), and even custodial personnel (how are discarded/off-spec cleaners and solvents disposed of?).

Implementation involves the traditional ISO mantra of "do what you say, say what you do". Having a well-documented system in place is excellent; however, if the Scheme only exists on paper and not in practice, then the entire system is essentially pointless. A firm may have a sound program to monitor its effluent for components which are restricted via its permit; however, if such monitoring is not performed as scheduled, with the results evaluated and appropriate action taken, there is no value to having the procedure or even this aspect of the system.

Communication is also central to the effective functioning of an EMAS program. The first time these individuals are approached by a verifier is *not* the first time you want them to hear of the EMAS program! In fact, communication is *so* critical to EMAS that it is specifically addressed in one of the appendices to the Scheme. Appendix I (I-A-4.3.) discusses the role that communication should play in an organization's EMAS program:[65]

With regard to its environmental aspects and environmental management system, the organization shall establish and maintain procedures for:

a. Internal communication between the various levels and functions of the organization;

In other words, how will the organization discuss items and issues relating to the EMAS scheme (i.e. potential incidents, changes to the system, etc.), and how will *these discussions specifically* transcend organizational boundaries and hierarchies?

b. Receiving, documenting and responding to relevant communication from external interested parties

Subsection (b) involves how concerns and/or questions relating to the EMAS program (such as on the environmental policy, the environmental statement, etc.) will be managed within the organization. For example, if a local activist group decides they

wish further information on a point contained in the company's environmental report, how will that contact take place, for purposes of this section? What constitutes a "receipt"? A phone call asking for the information? A formal written request? If the latter, is it acceptable to be received by electronic communication (e-mail or fax)? Or must it be delivered by post?

Secondly, how will the organization document its receipt of the communication? Must there be a formal log book? A paper or electronic file? Or can the fact that the EMAS contact person received the document or request (however that occurred) be considered sufficient? Most likely not, in this example, because I-A-4.3 specifically calls for the "documenting" of the receipt or request.

Finally, how will a response be organized by the firm? One must be undertaken, if for no other reason than because I-A-4.3 specifically mandates it. But what form will that take? Again, is a telephone call or e-mail sufficient? Must the response be conducted on a face-to-face basis? If so, who will the parties to such a conference be? All of these items should be carefully considered, and documented as part of the EMAS program, by the organization.

The organization shall consider processes for external communication on its significant environmental aspects and record its decision

In the earlier version of EMAS, this aspect was perhaps not as clearly defined as it is in the 761/2001 version. Indeed, Annex III of 761/2001, while specifically discussing the "public availability" of the environmental statement (III-3.6; see below), provides for some precise means to make that statement publicly available. In reality, this section could be extrapolated over to the "significant environmental impacts" communication portion, if the organization desires.

Finally, *maintenance* of the program is essential, in order to ensure that the goals established are being worked upon, that key players identified in the documentation are still in fact involved and that their titles, etc. are correct (note: it is customary—and preferred—when documenting an audit program to use only the titles of various positions, not the specific names of the individuals. This creates a more "streamlined" effect overall, and actually helps the company by saving time on revisions if a specific person leaves the firm).

(f) "is available to the public" [66]

"Enough said". One of the key differences between EMAS and ISO 14001, among other auditing programs, is that EMAS *specifically mandates* the public availability of its environmental statement.

It is instructive to note here how vital EMAS considers public availability of certain documents to be. Consider Annex III, 3.6, "Public Availability". While it applies only to the environmental statement (to be discussed later), the language used gives a strong flavor as to the importance placed on public communication:

The information generated in point 3.2(a) to (g) which forms the environmental statement for an organization and the updated information specified in point 3.4 shall be available to the public and other interested parties. The environmental statement shall be

made accessible to the public. To this end, organizations are encouraged to use all methods available (electronic publication, libraries, etc.) The organization shall be able to demonstrate to the environmental verifier that anybody interested in the organization's environmental performance can easily and freely be given access to the information required in point 3.2(a)—(g) [the environmental statement components] and point 3.4.[67]

When was the last time one can recall an environmental program, or perhaps any type of program for that matter, requiring such a detailed means of making information publicly available—so much so that it has its own specific section under the regulation? Not very likely, to be sure.

Article 3, "Participation in EMAS", sets out the requirements that organizations who wish to be registered must meet. These are as follows:

2(a) "Conduct an environmental review of its activities . . . "[68]

Conduct an environmental review of its activities, products and services in accordance with Annex VII addressing the issues contained in Annex VI and, in light of the results of that review, implement an environmental management system covering all the requirements referred to in Annex I, in particular the compliance with the relevant environmental legislation.

However, organizations which have a certified environmental management system, recognized according to the requirements of Article 9, do not need to conduct a formal environmental review when moving on to EMAS implementation, if the necessary information for the identification and evaluation of the environmental aspects set out in Annex VI is provided by the certified environmental management system.[69]

Broadly put, the environmental review is a comprehensive evaluation of the way(s) in which the site impacts the environment. This review will include the perhaps obvious areas as waste, emissions and odors, but should also include the more intangible issues such as noise, dust, vibration and visual impacts.[70] As we have seen, EMAS does not set a specific baseline for firms considering registration, such as requiring full compliance with all permit limitations, before it can begin the EMAS process, but rather elects to let the firms establish their own baselines, as part of the site environmental review process.

Generally speaking,

> [a]n environmental review provides a snapshot of the environmental performance of the organization in terms of the following types of issue [*sic*]; existing provision for environmental management, accident and emergency planning, communications, energy management, environmental effects, investment, legislative requirements, local communities, nature conservation, processes, purchasing, products, resource consumption, suppliers, transport, waste minimization and water management. The data produced from the review should enable realistic policies and recommendations to be developed which are relevant to the particular issues, impacts and objectives of the organization.[71]

It is perhaps helpful to break this element into two separate parts; first, the environmental review requirements laid out in Annex VII, and subsequently the issues addressed in Annex VI. When the element review is structured in this manner, the specific requirements should be significantly clearer.

In addition, we shall examine the efforts of Akzo Nobel Gillingham with respect to this evaluation. The section of their 1996 (baseline) review is as follows:

INITIAL REVIEW

The site was split into 25 different areas and different people were assigned these areas to complete the modified questionnaire. The questionnaires were then correlated together and summarized to give, a base line for the site's environmental performance.

Several targets and objectives were identified from this initial review. It was clear that we met all environmental legislation. However, it was difficult to quantify our environmental performance. We decided to compile a site environmental information manual which could be updated annually so that we could maintain detailed records of our performance for air, land and water discharges. The Site Environmental Information Manual has made the writing of the EMAS statement considerably easier. The compilation of the manual took approximately 6 months and was carried out by two Chemical Engineering Sandwich students from Bradford University. Systems were set up to monitor and correlate environmental data, on a monthly basis, such that the annual update of the manual was a simple task.

The advantage of such a system is that it is easier for the Statement Verifiers to prove that the information is correct and therefore reduces the time required on site and also the cost. It was also obvious, at an early stage, that everybody should receive basic environmental awareness training.

Annex VII, 7.2, covers the required aspects of the environmental review. The review should cover five key areas:[72]

a) Legislative, regulatory and other requirements to which the organization subscribes;

"Legislative, regulatory and other requirements" is again highly crucial to the solid functioning of an EMAS program. As discussed earlier, this aspect is the lynchpin of an environmental management system, as it clearly defines what areas of the legal environment will be part of the Scheme. Certainly, EMAS mandates compliance with legislative and regulatory requirements, but it is these "other requirements" which the organization must carefully define. Define too few such requirements, and the organization risks censure by the verifier. Define too many requirements, and the organization may be hamstrung by trying to meet and manage too much information.

b) An identification of all environmental aspects with a significant environmental impact in accordance with Annex VI, qualified and quantified as appropriate, and compiling a register of those identified as significant;

Annex I of 761/2001 defines "environmental aspects as ". . . activities, products and services that it can control and over which it can be expected to have an influence, in order to determine those which have or can have significant impacts on the environment. The organization shall ensure that the aspects related to those significant aspects are considered in setting its environmental objectives.[73]

Annex I.A.4.6, "Operational Control", lays out the criteria for identifying and managing the significant environmental impacts. Specifically:[74]

The organization shall identify those operations and activities that are associated with the identified significant environmental aspects in line with its policy, objectives and targets. The organization shall plan these activities, including maintenance, in order to ensure they are carried out under specified conditions by

(a) Establishing and maintaining documented procedures to cover situations where their absence could lead to deviations from the environmental policy and the objectives and targets;[75]

This element is largely straightforward in its language. The organization shall establish procedures, which other standards have termed "work instructions" in some cases, in order to clearly define situations where the failure to follow such instructions could reasonably be cause for deviation from other elements of the Scheme. For example, in an instance of the operator who unloads tankers of material into on-site storage tanks, a procedure might necessarily need to be created in order to ensure that the process is completed properly. If it was not, or if deviation from the procedure(s) occurred, an environmental incident such as a release of the material might occur, which would assuredly run counter to the firm's environmental policy, as well as its objectives and targets. There is no specified length for the procedures, or a proscribed amount of detail; only enough that the directives of this element are met.

(b) Stipulating operational criteria in the procedures;[76]
(c) Establishing and maintaining procedures related to the identifiable significant environmental impacts of goods and services used by the organization and communicating relevant procedures and requirements to suppliers and contractors.[77]

Procedures shall be created and maintained with regard to the significant environmental impacts of goods and services which are a necessary part of the organization's operations. In addition, "relevant procedures and requirements" relating to these goods and services must be communicated to those who provide them. Consider the example of the organization which purchases bulk quantities of hydrogen peroxide, for example. Due in part to the highly hazardous nature of the product, I-A-4.6(a) mandates that some type of "procedure" be created to effectively manage issues relating to it. This might be handling instructions, storage instructions, shipping instructions, and so on.

However, under item (c), the firm must communicate the procedures and requirements which apply to the peroxide to the suppliers and contractors involved. It may sound intuitive, but simply having the documents and so forth in place is not sufficient;

the supplier(s) must also be made aware of them. As elsewhere, the firm itself determines how best to manage this communication.

Returning to Annex VII, 7.2,

> *c) A description of the criteria for assessing the significance of the environmental impact in accordance with Annex VI, Point 6.4;*

Item (c) dovetails well with this process, as it requires the organization to "prove" why it chose a given aspect as significant, and perhaps did not consider another as such. Specifically, Annex VI, Section 6.4 lays out the criteria for determining or evaluating significance, at a minimum:[78]

1. information about the condition of the environment to identify activities, products and services that may have an environmental impact;
2. the organization's existing data on material and energy inputs, discharges, wastes and emissions in terms of risk;
3. views of interested parties;
4. environmental activities of the organization that are regulated;
5. procurement activities;
6. design, development, manufacturing, distribution, servicing, use, re-use, recycling and disposal of the organization's products [commonly known as the "life cycle", or "life cycle analysis"];
7. those activities of the organization with the most significant environmental costs, and environmental benefits.

Hillary (1994) defines "significance" in a somewhat complicated manner: "legislation plus standards plus stakeholders' views plus scientific evidence plus regulator's demands plus public attitudes".[79] However, "significance", or "significant environmental impacts", could more succinctly be defined as those aspects which have a measurable impact, presumably negative, on the environment.

According to the European Commission:[80]

> [the intent of the significant impacts is] [t]o give an overall picture of the organization's significant environmental aspects and to explain the environmental consequences of its activities, products and services. The key issue is that the reader [of the information] understands the link between what the organization does and the significant environmental impact that can be caused.
>
> The organization may describe how each of its significant environmental aspects impact on the environment. Alternatively, the organization may show different environmental media (such as air, water, flora and fauna) and describe which of its significant aspects impact on each. Input/output diagrams, matrices and annotated pictograms are all useful ways of showing this information in a concise form . . . [c]omment also on impacts due to accidents and environmental liabilities. Impacts associated with past activities that may be translated into future liabilities might also be of importance.

> *d) An examination of all existing environmental management practices and procedures;*

In other words, this aspect functions as an examination of what environmental efforts are already in place. Here, the firm is tasked to conduct an evaluation of all of the management practices and procedures in place at the time of the review, and determine how they conform (or do not conform) to the requirements of EMAS, and its goal of continual environmental improvement.

e) An evaluation of feedback from the investigation of previous incidents.

This item ties into the foregoing, in that it facilitates the EMAS requirement of continual improvement. Only by examining the root causes of incidents which have occurred at the facility can an accurate determination be made as to the cause of the issue.

While the scope and depth of the environmental review will necessarily vary from site to site and industry to industry, the end result of the site environmental review should be a definitive list of specific issues that can be addressed as part of the action program for the site. For example, "excessive dust generated during batch loading process", while perhaps accurate, does not provide a solid foundation and direction for action in the program. A better phraseology might be "Dust amounts with particles exceeding 10 microns are consistently produced from open-top loading of mixing vessels". This later statement not only *defines* the specific issue to be addressed, but it *quantifies* the reason for it to be considered (perhaps exceeding a local particulate emission standard), and provides a localized focus area. "The purpose of the initial review is to identify the most significant environmental impacts—and therefore possible priorities to be set in the environmental programme—and to lay down a benchmark to measure future success in reducing these impacts".[81]

In essence, the environmental review of the site must take into account three main categories of aspects and factors: *Reducing the impact* of the firm's activities on the environment (evaluation, control and reduction of noise within and outside the site; selection of new production processes and changes to production processes; and product planning; environmental performance and practices of contractors, subcontractors and suppliers; prevention and limitation of environmental accidents; and contingency procedures in cases of environmental accidents), *Working toward a sustainable environment* (focusing on energy, raw materials and water management and conservation, waste avoidance, recycling, reuse, transportation and disposal), and *Environmental communications* (staff information and training on environmental issues; external information on environmental issues).

One highly effective means to conduct the requisite review, especially for a site of any size, is to divide the site into different areas based on criteria which the reviewer(s) determine. Is it easier to divide the site into units based on processes? By geographic areas (in the same locale)? By some other criteria? Then, different people can be assigned to respective areas to conduct the assessment. Another useful tool is to generate a questionnaire or checklist for each reviewer to follow. This will help ensure that the items evaluated and data retrieved are consistent across the review program. A correlation of these checklist results can then be summarized to provide a baseline for the site's environmental performance.

Presumably, a variety of targets and objectives will be identified from this initial review. One vital aspect which the review should reveal is the degree of the firm's compliance with State and local environmental legislation. Recall that EMAS does not differentiate between the two, or focus on one area as opposed to another.

Quantifying the precise level of environmental performance can be difficult, similar to the means by which the site is sectored above. Annex III, 3.3 of 761/2001 addresses the idea of Environmental Performance Indicators (EPI). EPIs function as a means of transforming raw corporate data, manifested in several forms, into a form in which the public can easily understand. EPIs are believed to be cost-effective in nature, because they can distill large volumes of information down into a "meaningful" form.

EPIs have five main principles:[82]

1. Comparability;
   Indicators used should enable a comparison and show changes in the environmental performance.
2. Balance between problematic (bad) and prospective (good) areas;
3. Continuity;
   Indicators should be based on the same criteria and should be taken over comparable time sections or units.
4. Timeliness;
   Indicators should be updated frequently enough to allow action to be taken.
5. Clarity;
   Indicators used should be clear and understandable.

Generally speaking, there are three categories of EPIs:[83]

Operational Performance Indicators (OPI)

"[OPIs] concentrate on the aspects associated with an organization's operations including activities, products or services, and can cover such topics as emissions, product and raw material recycling, fuel consumption of vehicle fleet, or energy usage".[84] OPIs primarily have four input indicators: materials, energy, services which support the organization's operation, and products which do the same. OPIs "concentrate on planning, controlling and monitoring the environmental impacts of the organization's operations . . . [b]y integrating cost aspects into them, they furthermore represent a basis for environmental cost management".[85] These indicators may include operation of the site or facility, maintenance, land use, transport, wastes and emissions.

Materials: Indicators for materials may include raw materials, operating and auxiliary materials, ground water, surface water, fossil fuels, wood and so forth.

Energy: Energy indicators to consider may include electricity, gas, oil, renewables and other sources.

Products: Preliminary products, auxiliary and office products, etc.

Services: Cleaning, waste disposal, horticulture, catering, communication, office services, transport, travel, education, administration planning, financial services, etc.

Other items to consider are transportation issues (i.e. fuel consumption, vehicle emissions), overall emissions (i.e. air emissions—greenhouse gasses, VOCs, effluent, hazardous wastes, etc.), and product life cycle issues (i.e. packaging materials, energy consumed to produce the item, etc.).

Management Performance Indicators (MPIs)

MPI indicators contain "system indicators", which involve the implementation of policies and programs, and "functional area indicators", which are concerned with such items as administration and planning, purchasing and investments. These indicators may include financial performance, employee involvement, health and safety issues and community relations. "These concentrate on efforts of management to provide the infrastructure for environmental management to succeed and can, among others, cover environmental programmes, objectives and targets, training, incentive schemes, audit frequency, site inspections, administration and community relations".[86] It is key to realize, however, that "[t]hese indicators serve primarily as internal control and information measurements, but do not by themselves provide sufficient information to give an accurate picture of the organization's environmental performance".[87]

Financial performance: These may include items such as resource savings, financial savings realized from the use of recycled materials and/or from recycling the materials themselves.

Employee involvement: Environmental training, consultation and input, etc.

Health and safety issues: Mitigating and/or minimizing environmental accidents, illnesses, indoor air quality issues, water quality, noise pollution, etc.

Community relations: Discussions with stakeholder groups, etc.

Environmental Condition Indicators (ECI)

ECIs focus on environmental media, such as air and water, and "bio- and anthroposphere indicators", such as flora and fauna, whose quality may serve as an indicator of environmental issues. "These give information on the quality of the environment surrounding the organization or the local, regional or global state of the environment".[88]

When attempting to determine EPIs for an aspect of the site or organization, it is suggested that the firm apply the following queries:[89]

1. What are the organizations main environmental aspects and impacts?
2. Where can most improvements be achieved?
3. Where can environmental improvements also lead to cost reductions?
4. How does the organization affect the local or regional environmental situation in relation to important local or regional environmental policy issues?
5. What environmental problems dominate the current political discussions?
6. What external requirements, for example from interested parties, affect the organization?

Table 2. Akzo Nobel Gillingham trend comparisons, 2001–2002

	White Waste to Landfill		Special Waste to Landfill		Chem./Contam. to Incinerator	
Month	2001	2002	2001	2002	2001	2002
Jan	11,280	9,280	0	0	3,425	1,575
Feb	7,180	8,020	0	0	200	0
Mar	11,010	29,140	0	0	1,350	7,340
Apr	15,640	7,860	0	0	0	1,775
May	11,280	10,760	0	0	3,980	0
Jun	8,940	5,500	0	3,380	0	0
Jul	6,340	5,980	0	0	12,440	0
Aug	5,540	7,780	0	0	0	0
Sep	8,680	8,720	0	0	0	0
Oct	6,600	16,220	0	0	2,420	0
Nov	17,880	12,100	0	0	2,900	2,455
Dec	8,600	6,100	0	0	8,325	520
Total	118,970	127,460	0	3,380	35,040	13,665
Mean	9,914	10,622	0	282	2,920	1,139

One option is to compile a site environmental information manual which can be updated easily. After incorporating the baseline data achieved in the initial review into this manual, the continual improvement aspect required will be extremely simple to meet. In addition, spreadsheet software may be employed to trend the data, as shown in Table 2.[90]

Then, such information can be used to provide graphical representations of the data, as shown in Tables 3–5.[91]

A second advantage of employing these methods is that it is easier for the third-party verifiers to review the data and information, thereby reducing the time required on site as well as the cost.

Next, with regard to the results obtained from the review, conducted under 2.0 and 2.1, an environmental program must be developed for the facility, one which

Table 3. Akzo Nobel Gillingham white waste to landfill trending, 2001–2002

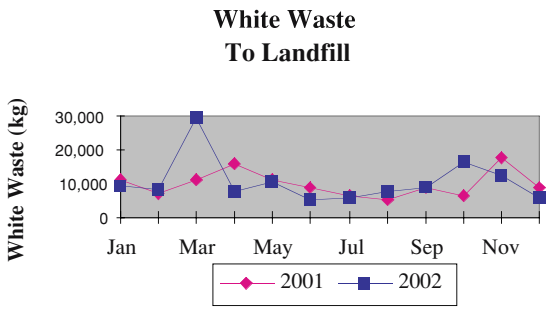


Table 4. Akzo Nobel Gillingham chemical/contaminated waste to incinerator trending, 2001–2002

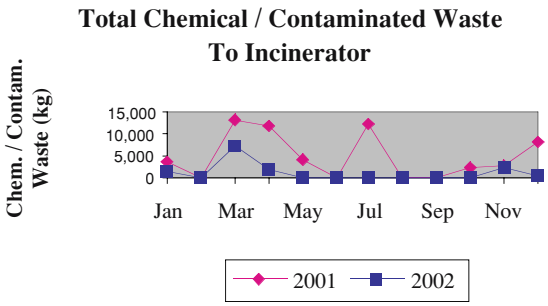
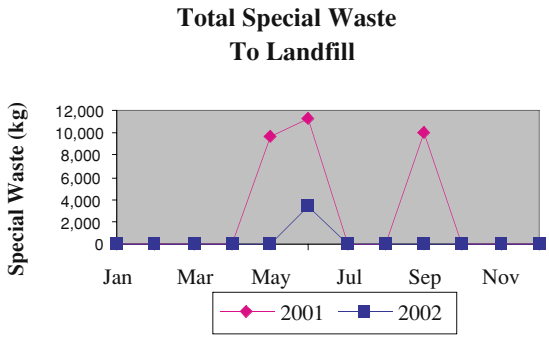


Table 5. Akzo Nobel Gillingham total special waste to landfill trending, 2001–2002



contains *specific* objectives and deadlines, and which ensures an increased protection of the environment.[92] This program effectively establishes a "bridge" between the items identified in the site environmental review and the actual validation efforts. By setting the program and its related goals, the site establishes a sizeable portion of the audit scope.

In addition, the firm must also establish an Environmental Management System (EMS) that " . . . contain[s] an organizational structure, responsibilities, practices, procedures, processes and resources for determining and implementing the environmental policy."[93]

> The organization . . . determines the operational means which will enable it to establish and apply the measures resulting from the action plan, such as human, technical and financial resources, the procedures and forms for evaluation and follow-up, training programmes, and the internal and external communication method to be used, depending on the context. Responsibilities have to attributed [*sic*]. The procedures of an EMS have to be adapted to the nature, size, capacity and requirements of the organization concerned.[94]

"The EMAS Regulation ascribes particular importance however to informing and encouraging the participation of the entire staff. This is one of the reasons why EMAS goes further than ISO 14001 in terms of transparency and credibility".[95]

According to Richard Welford,

> A fully integrated [environmental management] system which covers the totality of operations helps management and workers to see their place in the organization and recognize the interdependence of all aspects within it. Through establishing clear communications, information and reporting channels, it should provide a clear and understandable organizational map laying out both responsibilities and reporting arrangements. That means functions are less likely to be overlooked and gaps in the system will not occur.[96]

Such a system will build credibility and support for the Scheme within the firm, and should ensure its success moving forward.

Welford goes on to enumerate what he considers to be the three main attributes of an effective environmental management system:[97]

- Comprehensiveness: It must cover all activities of the organization. Any gaps in the system will manifest themselves in accidents and errors. Further, every part of the organization needs to be involved, and all employees need to be fully aware of their roles within the system.
- Readily understandable: The system employed must be clear to everyone involved. Ambiguity is a prime cause of system malfunction.
- Open to review/Contain a commitment to continual improvement: This item is self-explanatory.

Although the aspect of senior management commitment to such a program may be implicit, it is instructive to examine the key roles it plays in the system. The most successful systems are located where this strong commitment exists, chiefly because it (the commitment) allows key resources such as money and personnel to be tasked to the success of the system. If senior level managers see the program as simply a "money pit" into which funds are channeled for little or no perceived gain, they are much less likely to provide resources for the program to move forward, and it may well eventually simply die of attrition. " . . . in reality, many organizations find difficulty in ensuring this commitment . . . this may be due to the low priority of the environment when resources are allocated within departments, existing management pressures, and cynicism and apathy toward environmental issues".[98]

It has been suggested that those responsible for implementing the EMS within an organization should carefully consider the way(s) in which the environment is presented as an issue to senior management.[99] When one takes into account the roles of most of these managers, two main issues come immediately to mind: time and money. Management has a limited amount of both items to expend, and will only choose to do so on projects which they believe will offer a solid ROI: Return on Investment. Thus, presenting the need for an EMS as a business expense—for example, implementing one will ensure compliance with all relevant environmental regulations, which should reduce or eliminate costly fines and penalties—is vital.

In addition, managers may believe that implementing an EMS will tend to slow down production, as more attention must be paid to the environmental impacts of heretofore "unexamined" operations. For example, the metal plater who simply used to discharge his rinsate water to the holding area, the treatment basin or (unlikely, but theoretically possible) the local municipal water treatment system, now needs to consider all of the environmental impacts of his work, and also to determine ways in which the environmental impact can be reduced. However, if presented properly, this can be seen as an opportunity to perhaps reduce the volume of harsh or expensive chemicals, as well as of rinsate water. As a result, the firm could potentially pay less to treat or discharge the water, and/or possibly reduce their "intrinsic" exposure to liability from worker injuries or illnesses from these chemicals by moving to other alternatives. Thus, the time taken to consider the implications and evaluate other alternatives can have significant cost savings impacts almost immediately, and will most likely result in increased efficiency of processes.

Finally to this point, it is crucial to establish a "bottom up" means of communicating issues and ideas within the EMS, as opposed to the perhaps more common "top down" approach which many companies use to implement directives. Absent this, an inherent paradox may exist: senior management sets objectives and targets for the employees to meet, in order to attain registration, but these items may not be reasonable or even feasible based on resources, technology or other constraints. In fact, line workers may very well be aware of problems in the system which upper management may not, and they also may have suggestions as to how to fix the issues.

The environmental auditing requirement of EMAS is reasonably self-evident, and is laid out specifically in Annex II of 761/2001. The firm striving to implement EMAS must either directly ("carry out") or indirectly ("cause to be carried out"; i.e. contract with another entity) conduct environmental audits at the sites which are to be registered. Recall from Chapter 2 that EMAS is site-specific, not company specific.

- *Carry out regular environmental audits to evaluate how the system is working;*

  Carry out, or cause to be carried out, environmental auditing in accordance with the requirements set out in Annex II. The audits shall be designed to assess the environmental performance of the organization;[100]

The auditing requirements in Annex II, 2.1 *et seq.* are essentially what one would consider to be customary audit requirements under other programs, such as ISO 9000, ISO 14001, and so forth. None of the EMAS audit requirements are particularly unusual, other than perhaps the regulation of audit frequency to be at intervals of no more than 3 years, although corporate management has discretion as to the actual audit program frequency.

> The organization carries out an internal audit to assess the operation of the EMS and the results achieved in light of the policy adopted and of the legal obligations. The auditor is not normally supposed to be a member of the same department as that being audited, but this may give rise to difficulties in the case of small businesses . . . [t]he audit must be performed regularly, making it possible to ensure the continuity of environmental improvements . . . its findings may give rise to a review of the EMS.[101]

Annex II sets out the general requirements for internal auditing with the following preamble:

2.1 General Requirements

Internal audits ensure that the activities carried out by an organization are being conducted in accordance with established procedures. The audit may also identify any problems with those established procedures or any opportunities for improving these procedures. The scope of audits carried out within an organization may vary from the audit of a simple procedure to the audit of complex activities. Over a period of time all activities in a particular organization shall be subject to an audit. The period of time taken to complete audits of all activities is known as the audit cycle. For small non-complex organizations, it may be possible to audit all activities at one time. For these organizations, the audit cycle is the interval between these audits.

Internal audits shall be carried out by persons sufficiently independent of the activity being audited to ensure an impartial view. They may be carried out by employees of the organization or by external parties (employees from other organizations, employees from other parts of the same organization or consultants).[102]

There are two key items to extract from the language of this preamble:

1. "Over a period of time all activities in a particular organization shall be subject to an audit";

In essence, this aspect illustrates that there are no "exceptions" from the EMAS program. Readers familiar with the ISO 9001:2000 standard may recall that organizations may elect to declare portions of their site or facility "exempt" from the requirements of that standard.

> Where any requirement(s) of this International Standard cannot be applied due to the nature of an organization and its product, this can be considered for exclusion. Where exclusions are made, claims of conformity to this International Standard are not acceptable unless these exclusions are limited to requirements within clause 7, and such exclusions do not affect the organization's ability, or responsibility, to provide product that fulfils meets customer and applicable regulatory requirements.[103]

EMAS does not allow for such.

2. "Internal audits shall be carried out by persons sufficiently independent of the activity being audited to ensure an impartial view"

This section is similar to the requirements of virtually every other auditing standard, environmental or other, in that it attempts to ensure impartiality of the auditors. Certainly, a third-party registrar or verifier would have understandable concerns over a Manager of Environmental Compliance auditing him or herself under I-A-3.2 (Legal and other requirements), for example. In addition to the "check and balance" of having an independent person with an impartial view verify that the task is being properly managed, the firm benefits from having a "fresh set of eyes" looking at the data. This may well allow a company to discern better or more efficient means of addressing the components of the standard.

The "requirements concerning internal environmental auditing" are as follows:

2.2 Objectives

The organization's environmental auditing programme shall define in writing the objectives of each audit or audit cycle including the audit frequency for each activity.

The objectives shall include, in particular, assessing the management systems in place, and determining conformity with the organization's policy and programme, which shall include compliance with relevant environmental regulatory requirements.[104]

Generally speaking, this is a fairly simple aspect. The firm must define what can amount to an auditing procedure, taking into account the objectives which will be accomplished, and also the audit frequency. Latitude can be employed in this regard; for example, with the maximum time between audits set at 3 years, a firm can choose to conduct audits of various segments more frequently than every 3 years. The firm might audit manufacturing and customer service year one, shipping and receiving the next year, and maintenance and R&D in the 3rd year. Assuming these are all of the segments at the facility, this will meet EMAS' 3 year audit requirement, but not place the burden of conducting all audits at once on the auditors.

2.3 Scope

The overall scope of the individual audits, or of each stage of an audit cycle where appropriate, shall be clearly defined and shall explicitly specify the:

1. *subject areas covered;*
2. *activities to be audited*
3. *environmental criteria to be considered;*
4. *period covered by the audit*

Environmental audit includes assessment of the factual data necessary to evaluate performance.[105]

With respect to this section, the audit scope must clearly define the items defined in Section 2.3. It would be most effective if the third-party (i.e. verifier) was able to clearly observe that these four items were met, such as by reviewing audit plans, etc.

2.4 Organization and Resources

Environmental audits shall be performed by persons or groups of persons with appropriate knowledge of the sectors and fields audited, including knowledge and experience on the relevant environmental, management, technical and regulatory issues, and sufficient training and proficiency in the specific skills of auditing to achieve the stated objectives. The resources and time allocated to the audit shall be commensurate with the scope and objectives of the audit.

The top organization management shall support the auditing.

The auditors shall be sufficiently independent of the activities they audit to make an objective and impartial judgment.[106]

Section 2.4 is "simply" a "knowledge check". In other words, it is required that those people auditing a particular sector or field of a facility have some type of information and experience in the field. That is, one would not want an employee on a production line to audit the EMAS-related functions or aspects of customer service, if he or she had no knowledge of or experience in that area. This is to ensure that items which may be crucial are not overlooked simply due to a lack of knowledge on the part of the auditor. Consider the scenario where a customer service manager, with no ideas about or experience in the logistics (distribution) department, audits that department. He or she might come across a pallet of corrosive material which was not placarded or labeled as such. This could result in it being handled or stored improperly, and potentially causing a spill and harm to the environment. A person familiar with shipping requirements would presumably notice/know this, and take the appropriate steps to remedy it.

The "top management" phrase is self-explanatory. It is required that top management, however that is defined within the particular firm, supports the audit, and thereby the EMAS program, and provides the necessary resources for it.

The "independence" of the auditors is also key to observe. As discussed elsewhere in the text, having a maintenance supervisor audit his own department is not permitted under the EMAS auditing requirements. While it is entirely possible that the supervisor would be completely objective in his evaluations and/or findings, from an outside perception it is an inherent conflict of interest. However, a firm may need to work with the verifier in cases in which the firm size is very small, and/or where one individual wears "many hats" of responsibility. It may turn out that in some cases there is simply no operational way to avoid auditing one's own area of responsibility, but the firm would be wise to obtain the verifier's thoughts and "blessing" before spending the resources to conduct the audit in that manner.

2.5 Planning and Preparation for an Audit

Each audit shall be planned and prepared with the objectives, in particular, of:

- *ensuring the appropriate resources are allocated,*
- *ensuring that each individual involved in the audit process (including auditors, management and staff) understands his or her role and responsibilities.*

Preparation shall include familiarisation with activities of the organization and with the environmental management system established there and review of the findings and conclusions of previous audits.[107]

As previously, this aspect of the audit requirements is largely self-explanatory.

2.6 Audit Activities

Audit activities shall include discussions with personnel, inspection of operating conditions and equipment and reviewing of records, written procedures and other relevant documentation, with the objective of evaluating the environmental performance of the activity being audited to determine whether it meets the applicable standards,

regulations and objectives and targets set and whether the system in place to manage responsibilities is effective and appropriate. Inter alia [among other things], spot-checking of compliance with these criteria should be used to determine the effectiveness of the entire management system.

The following steps, in particular, shall be included in the audit process:

(a) understanding of the management systems;
(b) assessing strengths and weaknesses of management systems;
(c) gathering relevant evidence;
(d) evaluating audit findings;
(e) preparing audit conclusions;
(f) reporting audit findings and conclusions.[108]

Once again, the requirements of these sections are largely clear. Section 2.6 of the Scheme essentially lays out the information which a verifier will expect to see as part of his or her evaluation of the internal audit process. Certainly, appropriate evidence shall be gathered and/or cited in the audit report, so that a clear line can be traced from the audited element to the findings to the evidence observed and on to the conclusion made as to conformance.

2.7 Reporting Audit Findings and Conclusions

1. A written report of the appropriate form and content shall be prepared by the auditors to ensure full, formal submission of the findings and conclusions of the audit, at the end of each audit and audit cycle.

The findings and conclusions of the audit shall be formally communicated to the top organization management.

How the organization chooses to communicate the audit results to top management is, as elsewhere, left to their individual determination. Perhaps an e-mail with a summary attachment is sufficient. Perhaps a sit down meeting at which the findings are presented in detail is more appropriate. However it is undertaken, it must be performed in a "formal" manner.

2. The fundamental objectives of a written audit report are:
(a) to document the scope of the audit;
(b) to provide management with information on the state of compliance with the organizations' environmental policy and the environmental progress at the organization;
(c) to provide management with information on the effectiveness and reliability of the arrangements for monitoring environmental impacts of the organization;
(d) to demonstrate the need for corrective action, where appropriate.[109]

2.8 Audit Follow-Up

The audit process shall culminate in the preparation and implementation of a plan of appropriate corrective action.

Appropriate mechanisms shall be in place and in operation to ensure that the audit results are followed up.[110]

Herein lies an interesting question: what is an "appropriate mechanism" for following up on audit results? Does it need to be a documented procedure? Perhaps. Does it need to be a formal aspect of the audit program itself? Most likely. What is the follow-up timeframe? 30 days? 60 days? Longer? Less? All these are items to be considered by the organization when moving forward.

2.9 Audit Frequency

The audit or audit cycle shall be completed, as appropriate, at intervals no longer than 3 years. The frequency with which any activity is audited will vary depending upon the

(a) nature, scale and complexity of the activities;
(b) significance of associated environmental impacts;
(c) importance and urgency of the problems detected by previous audits;
(d) history of environmental problems.

more [sic] complex activities with a more significant environmental impact should be audited more frequently.

An organization shall define its own audit programme and audit frequency taking into account of Commission guidance adopted in accordance with the procedure laid down in Article 14(2).[111]

One could easily, and correctly, view these sections as the "catch all" verbiage common to many environmental (and other) statutes of the industrialized world. However, when the language is deconstructed, it becomes apparent that this section is no more than another "paper tiger". The subsection requires what has been referred to as "management commitment" in ISO 9000:2000 (and elsewhere). However, unlike the various ISO standards, EMAS does not require top-level management, *per se*, to commit to the objectives; rather, only the highest *appropriate* management level [emphasis added]. As discussed earlier, this may exist on two fronts, depending upon the size of the firm. The ˚ 1M firm may, due to the nature of its structure, have the express commitment of the CEO to the program, but the ˚ 15 billion firm may not, as a result of management configuration. As EMAS is structured, there is inherent flexibility in objective setting. An on-site manager, or a CEO hundreds of miles away, may set the objectives.

In addition, EMAS is explicit in how a firm must evaluate certain components, such as the reduction of environmental impacts. According to the Scheme, "... reducing environmental impacts to levels not exceeding those corresponding to economically viable application of best available technology [is required]".[112] The Helsinki Convention defined BAT as "the latest stage of development (state of the art) of processes, of facilities or of methods of operation which indicate the practical suitability of a particular measure for limiting discharges".[113]

At this point in the text, it would be useful to examine an element that has been bandied about in several of the environmental statements, as well as elsewhere, in the

text to this point: "training". Without adequate training, all of the other elements of EMAS are essentially moot, as they cannot be properly employed or implemented. The cake cannot be created, or created accurately, without a set of instructions: those instructions are the training.

Annex I (I-A-4.2) addresses what EMAS refers to as "Training, awareness and competence" [TAC]. This portion of the Annex breaks TAC into five "elements", as follows:[114]

The organization shall identify training needs. It shall require that all personnel whose work may create a significant impact upon the environment, have received appropriate training.

This portion of the TAC is fairly self-evident. The firm must identify first what is considered a "significant impact" upon the environment. As discussed elsewhere, certainly an operator who unloads bulk chemical tankers into storage tanks has the capacity to have a "significant impact upon the environment" if material is discharged, a tank is overfilled, a coupling is not tightened properly, etc. But what about personnel such as custodians, who use potentially hazardous chemicals on a daily basis for cleaning purposes? What about the receptionist who is potentially the central point of contact to sound a facility-wide alarm in the event of an emergency or disaster? And of the three individuals in this example, should all three receive the same amount and type of training? And, irrespective of that decision, what type of training should that be? Does the receptionist need to know how to read and understand a Safety Data Sheet? Does the custodian need to know how to safely unload tank trucks, and what the markings on them mean?

Once again, it is the European Commission to the rescue, via the "Guidance on Employee Participation Within the Framework of EMAS". The "Employee Participation Guidance" stems from Article I, Section 2 of EMAS II, which reads in part "The objective of EMAS shall be to promote continual improvements in the environmental performance of organizations . . . "[115] The European Commission has promulgated this guidance to assist firms with encouraging and incorporating employee involvement in EMAS, and thereby contribute to this continual improvement.

Furthermore, the "continual improvement" language is perhaps misleading when viewed in the abstract. On face, the term appears to connote an ongoing advancement of environmental protection. However, the term "improvement" is nebulous at best. EMAS makes no statements as to the timeframe, means or measures by which this must be accomplished. Should improvement from X to Y be completed (and measurable) by the next audit cycle? What if such requires a capital investment that cannot be accomplished during that period? What degree of improvement from X to Y is "acceptable", from a standpoint of being considered "improvement"? If a firm has a wastewater discharge limitation for phosphates of 5ppm, and the effluent continually experiences a reduction in phosphate content of 0.001 ppm over a period of, say, 10 years, is that considered "continual improvement" in the spirit of EMAS? In other words, one of the shortcomings of EMAS is that it relies on largely benign language to guide firms toward compliance.

The "Employee Participation Guidance" suggests the use of such items as suggestion books, project-based group works or internal environmental committees in order

to involve employees and to facilitate this improvement. It goes on to propose that there should be an employee participation scheme at all levels of the organization, and that evidence of such a scheme should be made available to the verifiers. Such evidence may include, but not necessarily be limited to, meeting minutes, information dissemination, ongoing training and so forth.[116]

Perhaps that is where the second part of the "preamble" to this section comes in:

> *It [the organization] shall establish and maintain procedures to make its employees or members at each relevant function and level aware of:*[117]
>
> *(a) The importance of conformance with environmental policy and procedures and with the requirements of the environmental management system;*

This section can be viewed as an "EMAS" or "EMS 101" course. Essentially, the organization is informing, or "training", its personnel in what is required of them under the environmental policy. It must educate the employees as to why it is important that they comply with the policy and the EMS as a whole: its it solely in order to maintain the site's registration under EMAS (some readers may scoff, but some firms do pursue EMAS, or even ISO standards, simply to have the "certificate on the wall" to present to customers, to meet an organizational directive, etc.)? Or is there something larger to their conformance, such as the general environmental good or protection?

Element I.A.4.7, "Emergency Preparedness", discusses the appropriate steps for preparing for and managing emergency situations:[118]

> *The organization shall establish and maintain procedures to identify potential for [sic] and respond to [sic] accidents and emergency situations, and for preventing and mitigating the environmental impacts that may be associated with them.*
>
> *The organization shall review and revise, where necessary, in emergency preparedness and response procedures, in particular, after the occurrence of accidents or emergency situations*
>
> *The organization shall also periodically test such procedures where practicable.*
>
> *(b) The significant environmental impacts, actual or potential, of their work activities and the environmental benefits of improved personal performance;*[119]

This item relates to the earlier discussion regarding the fictitious operator, custodian and receptionist, and how their roles, although perhaps disparate on face, can have a substantial impact on the environment. In addition, the firm needs to consider the "actual or *potential*" [emphasis the author's] impact of the work activities of each employee. That is, not only what the operator is directly responsible for, such as the truck unloading, but what could *potentially* happen as well. What if the operator completes every part of his truck unloading task correctly and accurately, but then goes off to take on another role as a member of the shipping department while the truck is offloading? Theoretically, or *potentially*, the truck could overfill the tank, or any of several other scenarios. How would the operator respond to such a discharge? He, or the organization, could not successfully argue that response to a tank overfill is not part of the items for which the

operator needed to be trained, because it could cause a *potential* environmental impact as a result of his activities.

In addition, training needs to be conducted on the environmental *benefits* of improved personal performance. Again, as elsewhere with the Scheme, the firm is responsible for determining what "improved personal performance" is. A common example might be the custodian (and/or his contractor) replacing the toilets in the building with ones which flush automatically, using less water intrinsically, as opposed to the ones in which a lever must be pushed manually and which historically use more water overall. While this may not seem on face to be either an aspect which would come under the Environmental Statement of Policy, or even under "improved personal performance", if one looks at it in a slightly different light, it can make full sense. Assume that one of the organization's goals is the commitment to the sound management of natural resources. Water could reasonably be considered a natural resource. Therefore, by reducing the amount used, the manifest goal of "sound management" is met. But what about the custodian's "improved personal performance"? Well, he or she has directly contributed to the realization of that policy goal, and in the process has improved his or her personal performance by directly reducing the amount of wastewater discharged to the environment.

> *(c) Their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirements of the environmental management system including emergency preparedness and response requirements;*[120]

Again, a fairly self-explanatory section of the Annex. The organization must inform the employees of their individual roles and responsibilities related to achieving the goals of the environmental policy and of the environmental management system, with specific emphasis on emergency preparedness and response. In other words, what must the fictitious receptionist do, specifically, in order to meet the goals of the policy and the management system? When it comes to an emergency situation, what is her specific role as well? How should she prepare for such an event? Have a list of emergency phone numbers? Direct practice evacuations of the facility? Ensure that she has a log of all individuals in the building at any given time? Similarly, once the event happens, what is her role then? To account for all personnel once they have evacuated? To serve as the contact point for first responders? To contact the relevant external authorities? Again, the organization determines all of these aspects, as it sees fit.

> *(d) The potential consequences of departure from specified operating procedures.*[121]

The final aspect, the consequences, cannot be overlooked. What if the receptionist were to ignore all of the training she received as a result of the foregoing element? What if there were a chemical release, and she did not function as the contact point for the first responders to the site, when that was a specific task of hers? In theory, the release could continue unabated for a long(er) time period, because the responders would not necessarily know the type(s) of material being released, their location, or any particular

hazards associated with the material(s). For example, a release of acetic acid from a bulk tank would require one type of response, while a release of sulfuric acid from a similar type of tank would require a completely different response. In our example, when the receptionist deviated from her assigned tasks, there were in fact "potential consequences of departure from specified operating procedures".

(e) Preparation of the environmental statement

> *Prepare, in accordance with Annex III, Point 3.2, an environmental statement. The statement shall pay particular attention to the results achieved by an organization against its environmental objectives and targets and the requirement of continuing to improve its environmental performance, and shall consider the information needs of relevant interested parties.*[122]

"The environmental statement is the most discussed and most misunderstood element of EMAS".[123] According to Hillary (1998),

> A general misunderstanding of the usefulness arises from the following fact: most requests for environmental statements come from groups that the firm finds a burden to serve. For firms, it seems to be horrifying to hear that 79% of firms get requests from researchers, 34% from consultants and only 21% from customers.[124]

What is the specific aim or goal of the environmental statement? According to the European Commission:[125]

> As a public document, the environmental statement should be clearly and concisely written. EMAS statements do not need to be long, elaborate documents. A short, well-presented statement can convey all the appropriate information to the reader. This is particularly applicable to small companies.

As we have seen elsewhere, the European Commission has constructed guidance on this element as well. Of the seven guidance documents presented by the European Commission for EMAS, this is perhaps the most vital and useful one for enterprises to become familiar with. The "Environmental Statement Guidance" is designed to assist the entity with the proper and compliant way to prepare the Statement required under Annex III, 3.2(c).

The "Environmental Statement Guidance" reminds entities attempting to register to EMAS that openness and transparency of information is penultimate under the Scheme. However, this aspect need not be regarded as a burden by the applicant firm; rather "... it provides an opportunity to market a positive image of the organization's performance to customers, suppliers, neighbourhood, contractors and employees".[126] It is critical when preparing the Environmental Statement to understand that various parties require potentially different types of information; therefore, the Statement must essentially be "tailored" to appeal to the interests of as many stakeholders as possible.

Although Annex III, 3.1 does require the information to be presented "... in printed form [for those who have no access to electronic sources, such as the Internet]...", EMAS leaves the means by which this information is communicated—such as in a

single report, as extracts form a larger document, etc.—open to discretion. However, 3.1 *does* require that "Upon its first registration and every 3 years thereafter, the organization is required to make available the information detailed under point 3.2 in a consolidated printed version".[127] The "Environmental Statement Guidance" suggests that electronic format is both the most cost-effective and provides the most accessibility to users. If access is not feasible, the relevant portions of the page(s) can easily be printed out and provided.[128] Recall also that the Statement does not necessarily need to be an elaborate document, especially for SMEs or firms with relatively simplified operations, nor does it proscribe a particular format or order of items in the Statement. Finally, as the "Environmental Statement Guidance" suggests, readers of the Statement may want to compare the data contained within across several years, in order to look for and evaluate potential trends. "It is therefore important to include the same type of information [but not necessarily in the same format] as reported in previous years . . . "[129]

The "Environmental Statement Guidance" goes on in Section 2 to provide suggestions as to how to meet the requirements laid out in Annex III, point 3.2.

> Regulation (EC) No 761/2001 does not specify a structure for the environmental statement or the order in which items should be presented, that is a matter for the organization to determine provided that the requirements of Annex III(3)(2) [see below] are met. If the organization produces a corporate environmental statement covering a number of geographic locations, it should consider how to structure the statement to ensure that the significant environmental impacts of each site are clearly identified and reported in the corporate statement (Annex III (3) (7)).
>
> Readers of the environmental statement may want to compare the results of an organization's environmental performance over time in order to identify significant trends. It is therefore important to include the same type of information as reported in previous years as well as to repeat any statements made to help improve comparability for the reader and make the information understandable. It might be advisable to appoint an outside person to review and comment on the document when it is complete.

The "Environmental Statement Guidance" concludes with an examination of several specific target groups for which registered firms may want to consider publishing information. These groups range from the local community to customers to employees to financial institutions/investors, but may also include such diverse actors as consumers and Non-Governmental Organizations (NGOs).

The specific items related to the environmental statement are addressed in Annex III of the EMAS regulation. The introduction, contained in 3.1, establishes the aims of the statement:[130]

The aim of the environmental statement is to provide environmental information to the public and other interested parties regarding the environmental impact and performance and the continual improvement of environmental performance of the organization. It is also a vehicle to address the concerns of interested parties identified as a result of Annex I—Section B.3 and considered as significant by the organization (Annex VI, Point 6.4). Environmental information shall be presented in a clear and coherent manner in printed form for those who have no other means of obtaining this

information. Upon its first registration and every 3 years thereafter, the organization is required to make available the information detailed under point 3.2 in a consolidated print version.

The language of 3.1 raises an interesting dichotomy. Simply put, a firm implementing EMAS would presumably be hard-pressed to defend the statement that "everyone" has a means of obtaining their environmental statement in electronic format. Even in the current time period, there are those without access to the Internet for various reasons. Therefore, it is essentially requisite that the firm (continue to) produce a printed version of the statement annually. Couple this aspect with the "first registration and every 3 years thereafter" requirement for a printed format, and the EMAS scheme suddenly becomes very burdensome in this aspect. Granted, a firm could simply print out the various web pages or web documents which make up the statement, but that still functions as a burdensome requirement. How many copies of the statement (printed) should be produced? How should they be publicized? How should they be distributed? Should any restrictions be placed on their distribution? Again, perhaps not terribly burdensome considerations, but ones which do require extra steps and additional resources.

The "preamble" to Point 3.2 covers the nature and goals of the environmental statement:

Upon its first registration an organization shall produce environmental information, taking into account the criteria of point 3.5 to be referred to as the environmental statement, to be validated by the environmental verifier. This information shall be submitted to the competent body following validation, and then be made publicly available. The environmental statement is a tool for communication and dialogue with the public and other interested parties regarding environmental performance. The organization shall consider the information needs of the public and other interested parties when writing and designing the environmental statement.[131]

As stated above, the crux of the environmental statement is laid out in Annex III, Point 3.2 (the "Point"). While Annex III as a whole discusses the requirements and aims of the environmental statement, the Point lays out seven requirements for items which the environmental statement must contain:

> *(a) a clear and unambiguous description of the organization registering under EMAS and a summary of its activities, products and services and its relationship to any parent organizations as appropriate;*

This aspect may often be met by a simple description of the organization: its history, its products, its activities at the site, etc. It may also focus on the interrelationships and interdependencies, if any, between the site in question and its parent organization.

Eka Chemicals' Boras site elected to define the organization as follows:

> *Eka Chemicals is part of the chemical group Akzo Nobel. Akzo Nobel has operations in 75 countries and the head office is in Holland. Akzo Nobel has three business units, coatings, chemicals and pharmaceuticals. Eka Chemicals belongs to chemicals [sic] business unit.*

In Eka Chemicals, the business is divided in several sub-business units and the Boras Plant belongs to Paper Chemicals. The Boras Plant has 25 employees in total.

We are mostly a producing unit. Research and Development of our products are mainly conducted in Rollsbo at Paper Chemicals head office and also in Duren in Germany. In Boras there is as well an administrative organization which mainly provides service to the Scandinavian market and customers and to Paper Chemicals units in the whole world.

Our products:

The Boras Plant's products can be separated in two groups, resins and wax based. Both products are used in paper manufacturing and cardboard and to make them water repellant. The products are dispersions, which mean that resin and wax are in a fine particle size in water to make them a stabile mixture. The particles are small, down to 1/1000 of one millimeter. The products resemble milk in appearance and shape.

Our products are distributed to most major paper manufactures in Sweden. The sales in 2002 were good and the total manufacturing was 234,000 mton of dispersion. Of this, 12,600 mton was resin dispersion and 10,800 mton was wax dispersion.

Other suggested "good practice" ideas to include in the environmental statement are:[132]

- Maps and diagrams
- Annotated aerial photographs
- Flow diagrams
- Classification (i.e. the NACE code) of the organization
- Name of contact person (if applicable).

It is absolutely crucial that the environmental statement prepared for the site is carefully and thoroughly vetted before release to the public at large. Realize that this statement is the "public face" of the company, by which its perceived level of environmental concern and responsibility will be determined. This image creation stems largely from EMAS' requirement that the statement be "designed for the public and written in a concise, comprehensible form [although] [t]echnical data may be appended".[133] Thus, firms who might wish to mask less-than-flattering environmental results are expressly prohibited from doing so by using technical jargon or potentially confusing language. Such technical data or explanations may be "appended", but cannot be part of the statement itself.

Antero Honkasalo, Environment Counsellor, Ministry of the Environment for Finland (1999) has affirmed this position when he noted "There are also other tools for protecting the environment that display self-regulation characteristics, e.g. eco-labels, but with environmental management systems not only are operators able to choose the methods with which to achieve the targets, but they can also define the actual targets".[134]

It is important to understand that EMAS does not proscribe any particular format or content for the environmental statement per se. "The vagueness of the EMAS

regulation and its requirements leads to a great variety of environmental statements. Some are sophisticated presentations of corporate environmental care, whereas others do not even reach the minimum regulatory standards".[135] Perhaps consequently, "[e]mphasizing success stories while remaining silent on weak points still dominates environmental statements. This can give the impression that there are no environmental problems at all . . . "[136] Additionally, due to the largely rigid corporate organizational structure which predominates many firms to this day, "companies prefer not to fix environmental objectives they are not absolutely sure they can reach . . . It is possible that the implementation of these measures could fail and they would have to justify the resultant discrepancies in the next environmental statement".[137]

> The environmental statement outlines the organization's policy and action plan. In addition, it presents—on an annual basis—the results obtained compared with the objectives set and the action to be carried out to continue to improve environmental performance. Small organizations may not be required to produce this every year. The statement must be drawn up in a way which is legible for a non-specialist public. Once validated, the environmental statement must be made public so as to provide all the interested parties . . . the crux of the information, making it possible to show the improvements obtained, to respond to concerns and to permit frank and open dialogue.[138]

As a precursor to this Section, the Commission adopted Directive 90/313/EEC in 1990. "This directive constitutes a compromise, as it entitles citizens to obtain this information [the environmental statement and related data] without expressing any specific interest"[139]. However, industry was understandably concerned about protecting proprietary data from public disclosure. To that end, 90/313 specified that individual member states can define the terms under which environmental data is released, thereby protecting the confidentiality of data where required.[140] However, since this issue is on a member state by member state basis, and the Directive does not specify the requirements for making such a determination, there is a strong possibility of inequity among the states.

In his 1996 article, Stephen Tromans identified four significant "barriers to reporting or to better reporting".[141] While the article was specific to the United Kingdom, it is wholly able to be extrapolated to the EU in general. These barriers are as follows:

1. Many companies regard environmental reporting as a highly uncertain, subjective and mysterious exercise;
2. There is concern amongst some companies that their investigating and reporting may in fact crystallize liabilities, or may result in expensive investigation or clean-up requirements;
3. There is a concern about being amongst the forerunners to engage in environmental reporting, and whether this may lead to competitive disadvantage;
4. There is also concern that, because of the lack of any clear standards or ground rules for reporting, information given may be misconstrued or misused by the public or media;
5. There is scepticism as to whether the provision of environmental information is in fact a positive "selling point" for the company

The environmental statement must be prepared after the initial site review, and after each subsequent audit for every site, and should include the following information. For each, an example of the relevant section of the environmental statement prepared by Akzo Nobel's Polymer Chemicals site in Gillingham, UK, one of the first companies in Europe to be registered to EMAS, is provided (abridged where necessary in the interest of space).

A Description of the Company's Activities at the Site Considered

Site Gillingham is part of the business unit Polymer Chemicals, within the Chemicals Group of Akzo Nobel. The Site was officially opened as Novadel Limited in January 1938 for the production of white lead, associated paint products and additives for the flour milling industry.

The 18 acre Site on the banks of the River Medway in Kent is one of four major organic peroxide producing locations within the EC operated by Akzo Nobel's Chemical Group and employs 132 personnel.

Five major manufacturing units, with several minor units, produce specialty chemicals including organic peroxides for the plastics and rubber industries, and a monomer for the production of an organic glass for the optical industry. The Site exports 95% of its manufactured tonnage outside the UK, with Europe taking two-thirds of the total production. The Middle East and Far East are fast growing markets, with sales to these areas increasing in the last 4 years.

1. *An assessment of all the significant environmental issues of relevance to the activities concerned:*

- *Legislation*

A register is kept of the Safety and Environmental laws which apply to our operation and is updated and controlled by one of the procedures required to comply with the Environmental Management Standard IS0 14001.

Significant recent and shortly expected new Safety and Environmental laws which apply to our operation include:

The Control of Major Accident Hazards involving Dangerous Substances (COMAH) Regulations. These regulations are in response to a new European directive and apply to most installations already registered as major hazards Sites. The main new requirements of these regulations give the Health and Safety Executive and the Environment Agency more control over the way in which major hazards Sites operate, to make more information available to the public and to make practice of emergency procedures a legal requirement.

The European Landfill Directive is expected effectively to ban the landfill of untreated chemicals.

New European derived Integrated Pollution Prevention and Control legislation is expected to apply to our operation.

New Special Waste Regulations applying to many types of chemical waste have introduced new definitions of waste to which the regulations apply as well as a charge of £15.00 per consignment of waste.

Most wastes going to landfill are now taxed at the rate of £7.00 per tonne.

The Producer Responsibility (Packaging Waste) Regulations require companies who handle more than 50 tonnes of packaging associated with their combined UK sales and imports to register with the Environment Agency and to obtain credit for recycling a minimum percentage of each type of packaging that they handle.

- *Air Emissions*

Our processes continue to be exempt from Integrated Pollution Control registration on the grounds that the emissions are trivial, with the possible exception of the Perkadox 14 process. This process is subject to a routine four yearly review by the Environment Agency. A report has been prepared and submitted to the agency supporting continuation of the exemption.

Nuisance odours and noise are subject to control by the Environmental Protection Act and control is enforced by Gillingham Borough Council. There have been no significant noise or odour problems since 1995.

- *Waste Water*

Waste water discharged from the processes is classified as a trade effluent.

During 1997 all chemical discharges directly to the river will have been eliminated and only cooling water will be discharged to the Environment Agency controlled outfall. This will still be controlled by a consent specifying pH, suspended solids and chemical oxygen demand.

All other waste water will be discharged after treatment to meet Southern Water's consent limits to their effluent treatment plant.

- *General Waste*

All solid and liquid waste, other than trade effluent is controlled by the Duty of Care Regulations and Special Waste Regulations.

The management of waste is controlled by Site Procedures which comply with Environmental Management ISO 14001.

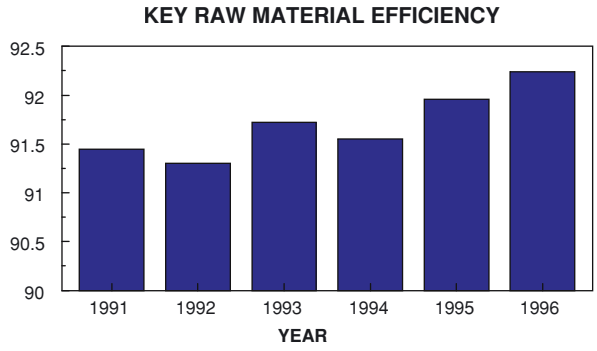
At least 95% of the special waste was from the Perkadox 14 process. In 1997 this waste will be treated on Site, eliminating the disposal of this waste to landfill.

Additionally other waste produced on the Site is "household" waste to Landfill and organic process waste for incineration.

- *Resource Usage*

The water used on Site comes from three sources, the domestic towns water supply and from two on Site bore holes, the shallow well, slightly brackish, used for cooling water and soft water from the deep well used for processing. Both abstractions are licensed by the Environment Agency.

Table 6. Akzo Nobel Gillingham key raw material efficiency trending



The main raw materials used on Site are alcohols, peroxides, acid chlorides and chloroformates.

The energy sources used on Site are fuel oil for steam production, to be changed to gas in 1997, gas for office heating and electricity. Although the Site is not a major energy user energy use reduction is an ongoing Site environmental objective.

- *Other Environmental Issues*

Due to the location of the Site, access is difficult for HGVs making deliveries and also for our own transport of products from the Site affecting local residents. The new Northern Gillingham Link Road has now started construction and this will give dual carriageway access directly from the Site to either the M2 or A2. This road is expected to be completed in the next 2 years and will considerably improve the access and the nuisance to local residents will be significantly reduced (see Tables 6–10).

2. *A summary of the figures on pollutant emissions, waste generation, consumption of raw material, energy and water, noise and other significant environmental aspects, as appropriate.*

Other factors regarding environmental performance

- *Major Hazard Status*

The Site is expected to continue to be classified as a Major Hazard Installation with increased controls under the COMAH Regulations as described in the section on legislation. This is due to the storage of Organic Peroxides on the Site.

All work derived risks on Site including the use of hazardous chemicals have been assessed and controlled as required by the relevant legislation.

A presentation of the company's environmental policy, programme and management system implemented at the site considered

Table 7. Akzo Nobel Gillingham water usage trending

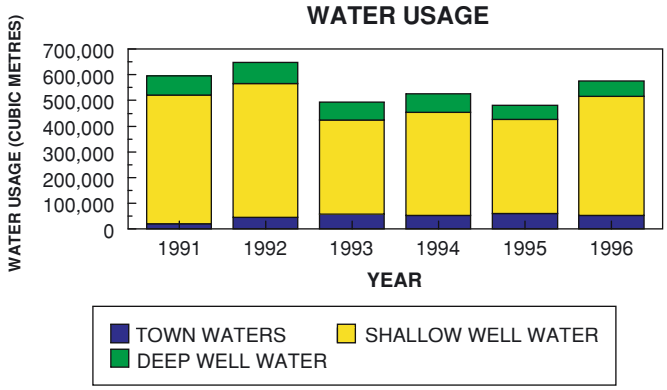


Table 8. Akzo Nobel Gillingham environmental operating costs trending

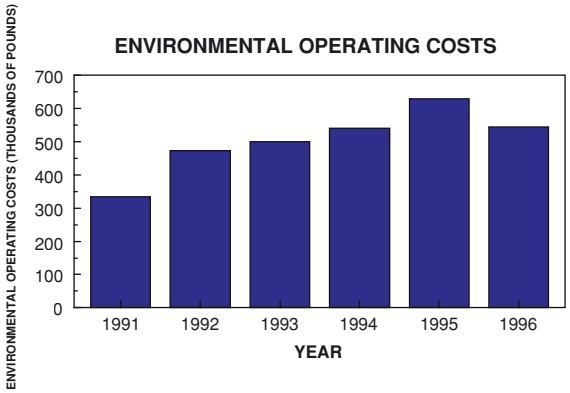


Table 9. Akzo Nobel Gillingham energy consumption trending per tonne of product

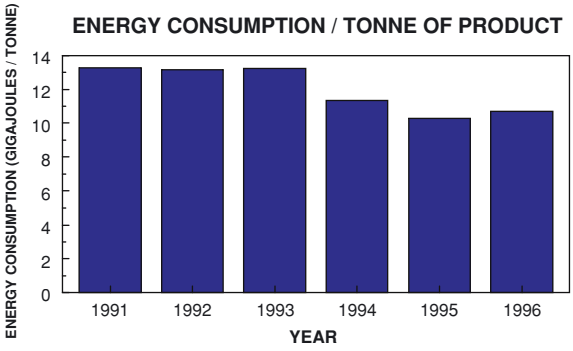
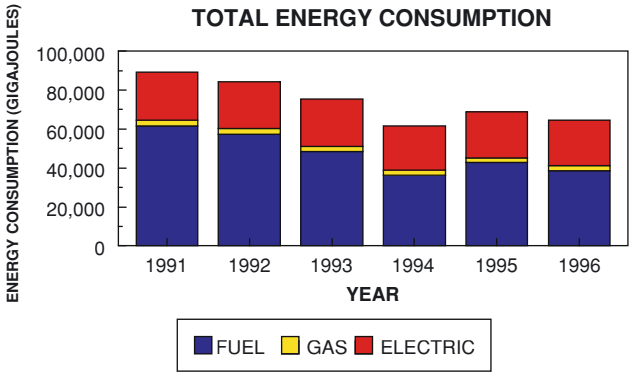


Table 10. Akzo Nobel total energy consumption trending



In the case of the Akzo Nobel examples cited herein, the Policy Statement has already been examined earlier in this chapter. The relevant programme and management system examples are as follows.

ENVIRONMENTAL MANAGEMENT SYSTEM (EMS): ORGANIZATION AND PERSONNEL

Responsibility, Authority, and Resources

Management positions whose work functions affect the environment and who are responsible for the actions performed within their relevant areas are listed below:-

Site Director
Operations Manager
Logistics Manager
Technical Manager
Safety and Environmental Manager
Financial Controller
Personnel and Training Manager

These managers in the execution of their duties include responsibility for:-

Allocation and delegation of specific environmentally related activities to nominated, authorized and suitable trained personnel within their respective departments.

Ensuring that all personnel are adequately qualified, trained and experienced in their relevant position to fulfill their assigned tasks.

Verifying that approved procedure and related complementary procedures are raised, implemented and maintained.

Ensuring that their personnel are familiar with the requirements of the Company's environmental policy, objectives, manual and necessary procedures.

The Site Director is responsible for ensuring the provision of necessary resources and personnel to implement, maintain and improve the EMS.

The deadline set for submission of the next statement

This report has been verified by Bureau Veritas Quality International with the following declaration:-

> "On the basis of the documentation, data and information resulting from internal procedures examined during the verification process at Akzo Nobel Chemicals Ltd (Site Gillingham), it appears that the Environmental Policy, Programme, Management System, Review and Environmental Statement meet the requirements of the EMAS Regulation."

The next validated Environmental statement will be produced by 30th June 1999.

The name of the accredited environmental verifier

Please see above.

In the interest of reducing the burden on SMEs, Hermann Hüwels of the German Competent Body, has recently suggested that annual environmental statements should cease to be required on an annual basis for firms who employ less than fifty people.[142]

(b) the environmental policy and a brief description of the environmental management system of the organization;

Presumably by this point, the environmental policy (See Annex I, I-A.2) has already been developed and established. This environmental policy needs simply then to be transferred into this area.

The "brief description of the environmental management system of the organization" is what will serve as the "benchmark" for the organization. It describes how the system is structured, any exemptions from the Scheme, and also how the system as a whole functions day-to-day.

The Gillingham site, in its 2000 Health, Safety and Environmental (HSE) Report, tied to EMAS, described the environmental management system as follows.

ENVIRONMENTAL MANAGEMENT SYSTEM (EMS)

Organization and Personnel

Responsibility, Authority, and Resources

Management positions whose work functions affect the environment and who are responsible for the actions performed within their relevant areas are listed below:

Site Director
Production Manager
Logistics Manager

Technical Manager
Health, Safety & Environmental Manager
Financial Controller
HR Manager

These Managers in the execution of their duties include responsibility for:

Allocation and delegation of specific environmentally related activities to nominated, authorized and suitably trained personnel within their respective departments.
Ensuring that all personnel are adequately qualified, trained and experienced to fulfill their assigned tasks.
Verifying that approved procedures are raised, implemented and maintained.
Ensuring that their personnel are familiar with the requirements of the Company's environmental policy, objectives, manual and necessary procedures.
The Site Director is responsible for ensuring the provision of necessary resources and personnel to implement, maintain and improve the EMS.

Personnel Communication and Training

Employees at all levels receive sufficient training and communication to ensure that the environmental impact of their activities are known and the benefits of continuous improvement understood. Their personal role and responsibility in achieving the requirements of the EMS and the potential effects of departing from relevant procedures are known.

(c) A description of all the significant direct and indirect environmental aspects which result in significant environmental impacts of the organization and an explanation of the nature of the impacts as related to these aspects (Annex VI);

As point (c) references, Annex VI of 761/2001 discusses the "direct" and "indirect" environmental aspects which a firm may include, and over which it may have management control. However, this list is not meant to be exhaustive.

Examples of "direct environmental aspects" include:[143]

(a) Emissions to air;
(b) Releases to water
(c) Avoidance, recycling, reuse, transportation and disposal of solid and other wastes, particularly hazardous wastes;
(d) Use and contamination of land;
(e) Use of natural resources and raw materials (including energy);
(f) Local issues (noise, vibration, odour, dust, visual appearance, etc.);
(f) Transport issues (for both goods and services and employees);
(g) Risks of environmental accidents and impacts arising, or likely to arise, as consequences of incidents, accidents and potential emergency situations;
(h) Effects on biodiversity

Similarly, 6.3 of Annex VI outlines some of the potential "indirect" environmental aspects which a firm may wish to consider:[144]

(a) Product related issues (design, development, packaging, transportation, use and waste recovery/disposal);
(b) Capital investments, granting loans and insurance services;
(c) New markets;
(d) Choice and composition of services (e.g. transport or the catering trade);
(e) Administrative and planning decisions;
(f) Product range compositions;
(f) The environmental performance and practices of contractors, subcontractors and suppliers.

(d) a description of the environmental objectives and targets in relation to the significant environmental aspects and impacts;

The description of the objectives and targets (O&T), as they relate to the significant aspects identified above, functions essentially as the "bridge" which unites these two seemingly disparate areas of EMAS. The O&T are the means by which the aspects and impacts (A&I) will be addressed. In other words, if the firm defines a particular A&I to be "the bulk tank rinsing process/procedure generates an excessive amount (defined as exceeding permit limitations) of phosphates in the wastewater stream", then the corresponding O&T would be some means of reducing the PO_4^{2-} content of the rinsing process, however the firm chooses to accomplish that.

An example can be seen in the manner by which Boras chose to handle a particular raw material issue:

> *During 2001–2002 we choose to further secure the property at the plant by installing diking around our new tanks containing products and raw material. It is three product tanks and one tank for liquid raw material that was earlier handled in sacks. Because the raw material earlier was dried by the supplier and then dissolved again at our site to be processed, there is an environmental reduction. We have also diverted rain water from the roofs that was earlier loading our run off water drains. The rain water is now diverted directly to the Viskan River.*

Here, Boras identified an A&I to actually be twofold: one aspect was the change from a dry raw material to a liquid one, and also to contain/manage rainwater runoff. The O&T involved installing diking to prevent contaminated runoff from reaching watercourses, ordering the raw material as a liquid rather than a solid which had to be reprocessed at the Boras site (creating the opportunity for environmental releases or damage), and diverting rainwater to the local river than to the storm drains. Essentially, the site was putting the A&I into quantifiable targets and goals.

As elsewhere, the European Commission has suggested some "good ideas" with respect to how to accomplish this portion of the Scheme:[145]

> The organization's environmental programs with its objectives and targets will help the reader to understand the organization's activities to improve its environmental performance. The organization should be able to demonstrate a clear link between the aspects that it considers most significant and the plans it has for improvement.

> Relate objectives and targets to significant environmental aspects and impacts. This can be presented in a table which includes the time period by which the targets and objectives should be achieved. This may be combined with the information required under point (c) [significant environmental impacts]. Present targets and objectives so that they are specific, adequate, relevant, and wherever possible, measurable.

(e) A summary of the data available on the performance of the organization against its environmental objectives and targets with respect to its significant environmental impacts. The summary may include figures on pollutant emissions, waste generation, consumption of raw material, energy and water, noise as well as other aspects indicated in Annex VI. The data should allow for year-by-year comparison to assess the development of the environmental performance of the organization;

Once again, the European Commission speaks to this aspect:[146]

> [The intent is] [t]o present data on the environmental performance of the organization and its progress in achieving its objectives and targets. Also to show how the organization's environmental performance is changing over time.
>
> [This can be accomplished by] [r]eport[ing] data on environmental performance against objectives and targets for the significant environmental impacts identified in accordance with Annex VI. Performance can be shown in a number of ways, such as graphs, charts and tables. Absolute figures on performance might be combined with performance indicators and thus relate performance to product output, to annual turnover and so forth. When reporting data, care needs to be taken that the correct units of measurement are used. Where data are aggregated from a number of sources in the EMS, the organization will also need to ensure that the method of aggregation is accurate and can be checked and replicated by the verifier. Data should be reported in a consistent format to allow for comparison on a year-by-year basis.
>
> Objectives and targets may not all be achieved within the intended time-frame, particularly if the organization sets itself challenging goals. If the objectives and targets are not met, it is good practice to include a note in the environmental statement explaining the reason why.

Such data has been presented earlier in the text, related to the Gillingham site. However, Boras and Alby handle the presentation of data in somewhat different ways:

- *Boras*

  Waste treatment.
  Waste during 2002
  Scrubber caustic sent to Varo Mill for reuse of chemicals and energy reuse: 160 mton
  Material to compost, rejected product: 154 mton
  Deposit: 17 mton
  Combustion: 34 mton
  Reused: Approximately 50 mton
  Destruction: 7.53 mton

- *Alby*

  Raw materials

  Raw material usage during the year is listed in the following table. The increase of solvent is mainly due to increase of inventory during the year.

  Raw material usage (mton/year)

Raw material	1999	2000	2001	2002
Solvent	26	93	99	122
Salt	36,624	35,041	36,927	38,878
Oil	2,108	1,955	1,985	2,129
Hydrochloric acid, 100%	1,282	1,074	1,106	1,236
Sodium hydroxide, 100%	1,478	1,199	1,304	1,352
Cooling water, MMm^3/year	47	48	48	52
Gasol (natural gas)	3,154	6,980	7,467	5,915
Electricity (GWh/year)	422	402	398	484

What were the results in 2002?

- In our environmental report in 2001, we presented goals and actions planned in our work for Safety, Health and Environment during 2002 and on. Below is an overview of our progress during the year.

Goals that have been accomplished

- Chromium to water less than 10 kg/year
- We reached our goal and the release from the chlorate plant is less than 9 kg
- 100% of aluminum oxide used sent to reprocessing
- 100% of aluminum oxide was sent to reprocessing.

Goals that have been partly accomplished

- Use of organic solvents maximum of 1 kg/mton of hydrogen peroxide
- Use of organic solvents was 1.7 kg/mton of hydrogen peroxide

Goals that were not reached

- We will have no accidents with lost time
  Unfortunately one accident resulted in lost time during 2002
- The Alby plants will have less than 3.5 % of sick leave absence
  Sick leave absence has been 4.3 %, which is higher than the goal.
- Releases of chlorine gas (including point) of less than 35 kg.
  Our releases of chlorine gas was 147 kg. The major part of the release happened at one occasion. A reconstruction will substantially minimize the risk of similar releases.

- Total releases of chlorate to air less than 300 kg/yr.
  The total release to air was 906 kg.
- Reduce the diffuse release of chlorate to water to less than 15 mton during 2002
  We reduced our diffuse releases of chlorate to water to 18 mton.

Although presented in somewhat different formats, the data sets above meet the fundamental requirements of (e), except that Boras does not include a year-to-year comparison in this example.

(f) Other factors regarding environmental performance including performance against legal provisions with respect to their significant environmental impact

This section dovetails with Annex I, I-A-3.2 of 761/2001, which states that "The organization shall establish and maintain a procedure to identify and to have access to legal and other requirements to which the organization subscribes, that are applicable to the environmental aspects of its activities, products or services".[147]

> Where the organization reports data on its environmental performance relating to significant environmental impacts which are regulated, performance against the legal level needs to be reported. The organization may also include other information relating to its environmental performance in the statement.
>
> When reporting data . . . the organization can also include information on legal limits to show that compliance is being achieved. Other information that the organization may provide includes details of investments to improve environmental performance, support to local environmental groups and actions to promote dialogue with interested parties. Organizations may wish to consider reporting on existing safety plans.[148]

"Good ideas" include:[149]

- Product information
- Procurement policies
- Important decisions and investments
- Precautionary actions/environmental protection activities/preventive measures
- Complaints, public or community concerns
- Research and development
- Incidents and breaches
- Budget

The Gillingham site has determined.

Legislation Update

The Dangerous Goods Safety Advisor Regulations have been implemented and our Logistics Manager has qualified as our Dangerous Goods Safety Advisor, (DGSA).

The Control of Major Accident Hazard Regulations (COMAH) is now in force and we are required to submit a Safety Report to the Competent Authority by early 2001. The competent authority is the enforcing authority for the COMAH Regulations and consists of the Health and Safety Executive and the Environment Agency.

The COMAH Regulations place considerably more emphasis on environmental protection than the CIMAH Regulations which they replace.

As a result of these Regulations, we were required to apply to the local Council for deemed planning consent to store the hazardous substances that we have on Site. The object of this legislation is to allow the local Council, following consultation with the Health and Safety Executive and the Environment Agency to comment on the conditions under which hazardous substances are stored on Site. There were no comments made on our activities by either H&SE or the EA and the Council had no comments.

Integrated Pollution Prevention and Control (IPPC) will replace Integrated Pollution Control (IPC) as the legal framework for controlling the environmental effects of chemical manufacturing. IPPC will apply to all our processes replacing the limited application of IPC. We expect that our Environment Management System will be of great value in helping us to meet the requirements of IPPC.

The Environment Agency are in the processes of licensing the waste treatment plant that we use for treating the skimmings removed from our effluent treatment plant.

No other environmental legislation relevant to our operation came into force in 1999.

(g) the name and accreditation number of the environmental verifier and the date of validation.

Again using the example of Gillingham:

This report has been verified by Bureau Veritas Quality International with the following declaration:-

"On the basis of the documentation, data and information resulting from internal procedures examined during the verification process at Akzo Nobel Chemicals Ltd (Site Gillingham), it appears that the Environmental Policy, Programme, Management System, Review and Environmental Statement meet the requirements of the EMAS Regulation."

The next validated Environmental statement will be produced by 30th June 1999.

The statement is largely effective; however, the site does not include the accreditation number of BVQI, or the date of the validation of the environmental statement in this example.

(h) Environmental Review

Have the environmental review, if appropriate, management system, audit procedure and environmental statement examined to verify that they meet the relevant requirements of this Regulation and have the environmental statement validated by the environmental verifier to ensure it meets the requirements of Annex III

This section functions essentially as the "check" portion of the "plan, do, check, act" circle described earlier. According to the language of the section, this is where the

firm has the environmental review [2(a)], if one has been done, the management system [Annex I], and the environmental statement [Annex III] "critiqued" for completeness and effectiveness. Note that the language of Article 3, 2(d) does not expressly mandate that this review be conducted by (a) person(s) external to the company, nor does it require that the review even be conducted by (a) person(s) outside of the EMAS project team. In other words, the "champion" of the EMAS program, the one who is perhaps the most involved in the creation and implementation of the system, is capable, under the standard, of auditing it for completeness in this regard.

As discussed earlier with respect to environmental auditing requirements, this is perhaps a positive and a negative aspect of the Scheme. The benefits of using someone closely tied to the system are fairly obvious: the individual(s) is/are intimately familiar with the system, so they can critique the "fit" with the requirements much more knowledgeably and closely, and they have the technical training and background, in most cases, to manage any issues which may arise. However, conducting the review in such a manner also raises the potential for inefficiencies as well. For example, allowing the maintenance supervisor—assuming he designed at least the maintenance portion of the program—to audit might result in missed opportunities for improvement. He might be so familiar with his portion of the Scheme that he overlooks potential deficiencies simply because he has seen the program so many times before. In this example, although the supervisor has a great deal of experience and training, it might be better to have a "fresh pair of eyes" examine that portion of the system.

The environmental statement, however, is expressly required by the standard to be "validated by the environmental verifier to ensure it meets the requirements of Annex III".[150] This is predominantly because the statement must be reviewed and approved by an independent party before the firm can be registered to EMAS.

In his book *Corporate Environmental Management*, Richard Welford postulates that organizations which have this third-party verification "will experience market advantages, and a better relationship with regulatory authorities, investors and insurance companies . . . "[151] Perhaps ironically, however, as will be discussed in detail later, a series of surveys conducted in 1996 and 1997 in order to determine the "viability" of a nationalized environmental liability scheme revealed that many banks and insurance firms were either (1) unaware of EMAS and/or (2) did not provide any significant relief, in terms of lower interest rates, easier access to capital or so forth. With respect to the "better relationship with regulatory authorities", however, one could argue that by having a successfully validated environmental audit, State authorities are perhaps naturally inclined to look more favorably on a firm which has become EMAS registered than on one which has not gone through the process. As will be seen, some Member States such as Germany have almost explicitly put forth the idea of regulatory relief for registered firms, while others have been silent on the issue.

(e) Forward the statement for approval

Forward the validated environmental statement to the competent body of the Member State in which the organization seeking registration is located and, after registration, make it publicly available.[152]

Upon completion of the validation requirement, the environmental statement is sent to the competent body for the country in which the firm is located. At that point, the firm is able to use the EMAS logo. Currently, there are two versions. The "verified environmental management" logo "attests to the conformity and proper functioning of the EMAS . . . "[153] The "validated environmental information" logo " . . . attests to the validity of the contents of the environmental statement".[154]

A list of the Competent Bodies in each Member State, as of press time, can be found in Appendix A of the text. In addition, details relating to each Body can be obtained in the respective Member State's portion of Chapter 5.

One can describe this section of the Scheme requirements in several ways: "the icing on the cake". "A formality". "The final step". All of which would be accurate descriptions of this last component of Article III. When a firm reaches this step, presumably they have a solid environmental management system in place, and one which is ready for formal, albeit a foregone conclusion, validation and approval by the local Member State.

The key aspect here is that the standard be made publicly available. As we have seen earlier, there are a variety of ways in which to accomplish this: some of which are prescribed by the Scheme and some of which are discretionary. As this facet has already been extensively discussed [see Annex III, point 3.6], little more needs to be said about the topic.

Now that the firm has successfully registered themselves to EMAS, one might believe that the most difficult part of the program has been accomplished. Indeed, they would be correct. However, in order to maintain the registration for the site, there is an ongoing process of review and verification, as well as continual improvement. The close of Article 3 details the requirements for a firm to maintain its EMAS registration:

> *(a) Have the environmental management system and audit programme verified in accordance with the requirements of Annex V, point 5.6*[155]

Annex V of 761/2001 discusses the requirements for the "Accreditation, Supervision and Function of the Environmental Verifiers". It lays out the parameters for the supervision of verifiers (5.3), clarifies the role that the verifiers serve (5.4), which includes legal compliance (5.4.3), and the proper protocol to follow before, during and after an audit (5.5).

Section 5.4.4, "Organization definition", functions as the preamble, or introduction to 5.6. Specifically:

> *When verifying the environmental management systems and validating the environmental statement, the environmental verifier shall ensure that the components of the organization are unambiguously defined and corresponds [sic] to a real division of the activities. The content of the statement shall clearly cover the different parts of the organization to which EMAS applies.*[156]

5.4.4. is the overarching "goal" or "direction" for the verification audits under EMAS. In sum, it instructs the verifier to specifically ensure that the manner in which the organization is outlined or defined under the Scheme (such as a sub-business unit of

a parent company, etc.) is in fact (and in practice) correct. In addition, the verifier must ensure that the information provided in the EMAS documents (such as how departments are organized, responsibilities for functions within the organization, etc.) are accurate. Finally, the content of the environmental statement will be clearly comprehensive in terms of the parts of the organization to which it applies. In other words, if the statement specifically excludes the finishing area of a metals production facility (assuming such could be accomplished), the verifier shall ensure that (1) the area is excluded from all aspects of EMAS in practice, and (2) that the area is legitimately able to be excluded under the Scheme.

GUIDANCE ON ENTITY SUITABLE FOR REGISTRATION TO EMAS

The European Commission has published the "Guidance on Entity Suitable for Registration to EMAS", in order to assist firms with determining if and when they are ready to be registered to the Scheme.

The "Registration Guidance" directs users to the fact that if any exclusions to the whole of the site are made, for EMAS registration purposes, the following principles *must* be factored into the decision:

- Firms cannot elect to exclude portions of the site which would not be eligible for registration under EMAS, such as a poor(er) performing area of the site;
- The firm must clearly communicate to the public which portion(s) of the site are registered to EMAS. ". . . normally, the operations at one site are being perceived by the public as one unseparable whole". In other words, firms cannot register only part of a site, and then imply that the entire site is registered to EMAS.

Conversely, portions of a site may be separated out from the whole, and registered as separate entities, provided they meet the following criteria:

- The separate(d) entity must have their own clearly defined products, services or activities, and these must be able to be clearly distinguished from the other (non-registered) parts of the site;
- The separate(d) entity must have enough management and administration to ensure that it can function to meet the requirements of EMAS. That is, the "child" entity cannot rely on the "parent" for things such as controlling environmental impacts, taking corrective action, etc. The "Registration Guidance" suggests that evidence of such a positive relationship are items such as independent legal entity status, organograms, etc.
- The separate(d) entity has clear responsibilities for complying with the environmental permits, licenses, etc., which are expressly issued to the entity.

As the "Registration Guidance" shows, it is fairly difficult to exclude aspects of the firm's operations on an arbitrary basis. The document goes on to summarize that exclusion cannot occur if "it is not understandable from an external view point which

part of the operations at the site is managed by the EMS and why exactly this part has been separated from the operations at the site".[157] In other words, the verifier's interpretation is paramount.

The "Registration Guidance" reminds entities considering EMAS registration that producing an environmental statement which must be clear and unambiguous is a paramount aspect of EMAS.[158] "The purpose of these requirements is to ensure that the organization has management control and influence over its environmental aspects that have significant environmental impacts at all sites".[159] The Guidance goes on to note, crucially, that

> . . . participants are advised to have a clear and reasoned justification for selecting the sites or parts of sites of the organizations to be registered. *By doing so they will be anticipating the requirements of the environmental statement and will be well placed to respond to possible queries notably from verifiers and competent bodies but also additionally [sic] from other interested parties* [emphasis the author's].[160]

Again, it is crucial that companies considering or undergoing EMAS registration pay close attention to this section of the Guidance. It would be both improper and foolish, from a verification standpoint, to exclude an aspect of the organization's operations, such as a wastewater treatment facility, for example, from the scope of the EMAS registration. It is virtually certain that a verifier would reasonably conclude that such an operation falls under the Scheme, and therefore cannot be exempted.

EMAS GUIDANCE ON VERIFICATION, VALIDATION, AND AUDIT FREQUENCY

The "EMAS Guidance on Verification, Validation and Audit Frequency" (The "Guidance") does point out that there is an allowance made for small businesses and small organizations (defined below), with respect to updating the information. Specifically:

> Although the updated information for small businesses and small organizations need not be a large expensively produced glossy document, Regulation (EC) No 761/2001 allows these organizations to extend the frequency for updating their information and having it validated. Only these organizations are therefore exempt from the yearly validation of updated information . . . unless they have:
>
> - Major environmental hazards associated with their activities, products and services, or
> - Significant operational changes in their environmental management system, or
> - Significant legal requirements relating to their activities, products and services, or
> - Significant local issues
>
> If not done annually then updating of the environmental statement will be expected within a period not exceeding 36 months.[161]

This section of the Guidance essentially states that unless the small organization is one which is or has significant environmental issues attributable to its operations, it can be audited less frequently than the annually/three year requirement.

The "EMAS Guidance" (the "Guidance") differentiates between, and also defines, "verification" and "validation". "Verification" is:

> The assessment (audit) carried out by the environmental verifier to ensure that an organization's environmental policy, management system and audit procedure(s) conform to the requirements of Regulation (EC) No 761/2001. This shall include visiting the organization, examining documents/records and interviewing personnel.[162]

While "validation" is defined as:

> The assessment carried out by the environmental verifier to check that the information and data within the organization's environmental statement is reliable, credible and correct and meets the requirements set out in Annex III 3.2.[163]

EMAS allows sites to determine if they wish to register collectively (for example, all production plants for a chemical manufacturing firm in a given Member State), or individually (only one of the plant sites). Depending on the "type" of EMAS registration desired—for example, a sole registration which comprises may sites, a sampling scheme may have to be established with the verification firm in order to prove compliance. It is advisable that over the period of verification cycles all sites be included at some point. Irrespective of the precise schedule agreed upon, the main office (i.e. corporate headquarters) must be included in the first and *each subsequent* verification program [emphasis the author's].[164]

In a similar vein, the Commission Decision of 7 September 2001 ("2001/681/EC" or "2001/681") sets out "Guidance [which] should be laid down to ensure that Regulation (EC) No 761/2001 is applied uniformly by all the Member States" and to provide a reference point for firms implementing EMAS.[165] One such aspect of this guidance addresses "Organizations Operating in Just One Site". This section provides two "positive" examples of how such a site might be subdivided for the purposes of EMAS, with some sections excluded:

- A company, operating in one site where it produces both pipes and radios, may register only one of those branches,
- [The] cafeteria of a clothing manufacturer may be registered separately.[166]
- Conversely, the section provides for a "negative" example of exclusion under EMAS:
- [A] pharmaceutical company may not register only the part of the plant producing the final product going to the consumer separately, leaving out the basic industry process regarding the intermediate substances at the same site.[167]

Entities smaller than the site (as a whole) can be separately registered if:

- the subdivision has clearly defined [sic] own products, services or activities and the environmental aspects and impacts of the subdivision can be clearly identified and distinguished from those of other non registered parts of the site

Section 5.6 of Annex V, Verification Frequency, sets out the requirements for the reevaluation of firms once they have achieved EMAS registration. Specifically,

In consultation with the organization the environmental verifier shall design a programme to ensure that all elements required for registration with EMAS are verified in a period not exceeding 36 months. In addition the environmental verifier shall at intervals not exceeding 12 months validate any updated information in the environmental statement. Deviations from the frequency with which updates shall be performed may be made under circumstances laid down in Commission guidance adopted in accordance with the procedure laid down in Article 14(2).[168]

So what does this grandiose language mean in *practice*? Section 5.6 establishes that the verifier must, in concert with the organization being evaluated, the frequency for re-auditing the firm, at no more than a 36 month interval between the time of the initial registration (during the first audit cycle), or between the previous and the current audit. This 36 month interval must encompass all elements required for registration to the Scheme. In addition, the verifier must "validate any updated information in the environmental statement" at most once per year. However, deviations from this schedule are permitted, provided they conform with certain Commission guidance documents.[169]

In particular:

> This requirement is to re-assure the organization's management and interested parties that the environmental policy, management system, procedures, information, data measurement and monitoring, meet the requirements of Regulation (EC) No 761/2001. Regular interaction between the verifier and the organization helps build credibility and confidence in users of EMAS as well as the scheme itself. In order to ensure ongoing surveillance of the organization's EMS and environmental performance, good practice would be to structure the verification so that one-third of the organization's activities be verified each year such that over the maximum 36 month period all activities are verified. This will also help give confidence to the verifier on the accuracy, credibility and reliability of information in the environmental statement.[170]

Again, the European Commission has promulgated guidance on this issue. The "Guidance on Verification, Validation and Audit Frequency" provides some information for the firms in this regard.

Under EMAS the site must agree to a (re)verification program covering at most 36 months from the time of the initial or last verification or registration. The "Verification Guidance" directs that the environmental statement be updated annually. The main impetus for this section is to reassure interested parties that the organization is under competent surveillance, and to build and maintain trust with outside entities.[171] According to the Commission, an ideal structure for larger firms is to verify one-third of the organizations' activities each year, thereby ensuring a complete "turnover" every 3 years.

Whereas Article 3(3)(b) of EMAS mandates that updates of the environmental statement be made publicly available each year, the same allows for deviation from the schedule for reasons permitted under Article 14(2), provided there is no "operational change" in the EMS.[172] The Commission points out in the "Verification Guidance" that simply updating the information in the environmental statement does not mandate that

a new one be published per se; rather, only that the changes are publicly available.[173] This can also be accomplished by publishing a separate statement, or by including the data with other items, such as on the corporate website.

In addition, portions of the environmental statement which are subject to independent verification, such as emissions data, can be submitted to regulatory authorities, if desired. The "Verification Guidance" suggests potential avenues for such submissions to the regulatory authorities, so that further "goodwill" can be engendered with these agencies.

Annex I-A5.1 of 761/2001 discusses the precise requirements for the monitoring and measurement of various items within the organization. This language is as follows:[174]

The organization shall establish and maintain documented procedures to monitor and measure, on a regular basis, the key characteristics of its operations and activities that can have a significant impact on the environment. This shall include the recording of information to track performance, relevant operational controls and conformance with the organization's environmental objectives and targets

Monitoring equipment shall be calibrated and maintained and records of this process shall be retained according to the organization's procedures

The organization shall establish and maintain a documented procedure for periodically evaluating compliance with relevant environmental legislation and regulations

Some organizations have taken this third point to relate to the creation of an "environmental audit procedure", one which directs that, at some specified interval, the firm shall look at the environmental regulations which apply to their specific industry or site, and make an evaluation as to whether or not the organization is in compliance with them. Recall from earlier sections, specifically the example of A.H. Marks, that companies *must* be in compliance with *all* applicable environmental regulations, or their certification may be revoked.

Additionally, the firm must take the appropriate steps and actions to manage aspects which are determined to be out of compliance, be they related to this "environmental compliance audit", or to other aspects within the Scheme. Section I-A.5.2 of Annex I should be consulted for guidance in this area:[175]

The organization shall establish and maintain procedures for defining responsibility and authority for handling and investigating non-conformance, taking action to mitigate any impacts caused and for initiating and completing corrective and preventive action

This section is largely self-evident. Procedures must be created for outlining who is responsible for investigating—and addressing—any nonconformities which may be discovered at any point in the daily operations of the Scheme. Note that these may not necessarily be discovered during a *formal* audit of the system. For example, a Production Manager might notice that pallets containing drums of a corrosive solvent have been stacked three high by the carrier. He or she is aware (from the training element of EMAS, of course!) that the applicable procedure limits stacking to two pallets. Under this section, it is his or her responsibility to not only remedy the hazard (in accordance with the appropriate personnel), but to let the individual(s) responsible for investigating the non-conformances know of the situation. They will make an

assessment of the situation. Was it simply an accident? If not, was there a documented procedure for the unloading and stacking of such materials, perhaps in accordance with Annex I-A.4.6(a)? If so, was it communicated to the supplier? If so, what happened? Did the supplier forget about it? Did they simply disregard it? Was the driver a new employee (overall, or just new to this site or organization)? If so, was he simply unaware of the procedure? These are all key aspects to consider in such a situation.

Any corrective or preventive action taken to eliminate the causes of actual and potential nonconformances shall be appropriate to the magnitude of problems and commensurate with the environmental impact encountered.

Again, fairly self-explanatory in its language. The key point to take from this section is that the actions taken shall be proportional to the size of the problem and the environmental impact. When one looks at it in terms of the remediation aspect, this makes perfect sense. If an on-site storage tank is leaking material, the "appropriate" action would be something along the lines of creating a dike around the tank, or employing some other effective means to halt the flow. Simply waiting until all of the material has been released, and then taking action to repair the tank, would surely not be acceptable!

The organization shall implement and record any changes in the documented procedures resulting from corrective and preventive action.

Other standards have chosen to manage such implementation and recording of change during events like management review meetings or in other ways. However, the determination as to how best to mange this is left to the individual organization.

One important item to note at this point is that, as has been and as will be seen in the text, EMAS makes certain provisions for the uptake of the Scheme by small and medium sized enterprises, or SMEs. A "small organization or enterprise" is defined as an enterprise which:

- Has fewer than 50 employees and
- Has either,
  - An annual turnover not exceeding 7 million euro, or
  - An annual balance-sheet total not exceeding 5 million Euro,
- And is not owned as to 25% or more of the capital or the voting rights by one enterprise, or jointly by several enterprises.[176]

(f) Send the above to its national authority

Once the site successfully passes the registration audit, information will then be sent to the National Authority for that country (for a directory of National Authorities, please see Appendix A). Generally speaking, a complete submission to a national authority will include the following:

1. The name of the company applying for registration
2. The name and location of the site
3. A brief description of the activities at the site

4. The name and address of the accredited environmental verifier who validated the environmental statement
5. The deadline for submission of the next validated environmental statement
6. A brief description of the environmental management system
7. A description of the environmental auditing programme established for the site
8. The validated environmental statement

One aspect of this Section, which was not discussed in Chapter 2, involves the creation of National Authorities under EMAS. Although EMAS is an EU Regulation (1836/93), and therefore the individual Member States are not required to pass individual authorizing legislation for implementation, the legislation *does* require the individual States to establish the authorization bodies/competent authorities. Therefore, an inherent conflict exists: a Member State such as France may establish an accreditation body which allows only individuals to become EMAS verifiers, while a State such as Germany may allow individuals and companies to conduct the verifications. Potentially, this could result in an inequity among firms seeking registration to EMAS. In sum, simply because the EMAS regulation is harmonized, it is not necessarily uniform.

A second key aspect to recall on this point is that, unlike ISO 14001, companies seeking EMAS registration *must* have the program audited and verified by a third-party. Recall that under ISO 14001, a firm may choose to "self-declare" that it meets all of the requirements of the standard, with no independent verification. At least in the past, ISO 14001 has been able to maintain this choice because there has not been a firm demand on companies to have a third-party audit conducted. As this need grows, if it in fact does, the self-registration portion of ISO 14001 may well decline, or even be removed altogether.

A final point of consideration under EMAS is the maintenance of records relating to the Scheme. Annex I-A.5.3 discusses this section in detail:[177]

The organization shall establish and maintain procedures for the identification, maintenance and disposition of environmental records. These records shall include training records and the results of audits and reviews

Environmental records shall be legible, identifiable and traceable to the activity, product or service involved. Environmental records shall be stored and maintained in such a way that they are readily retrievable and protected against damage, deterioration or loss. Their retention times shall be established and recorded.

Records shall be maintained, as appropriate to the system to the system and to the organization, to demonstrate conformance to the requirements of this International Standard.

REGISTRATION OF ORGANIZATIONS

We have now examined essentially all of the intricacies of the EMAS regulation which are required before an organization can become fully registered to the Scheme. However, Article 3 is not the only component of the Scheme. Several others exist; however, they

are not critical to the purpose and focus of this text. As such, they will only be mentioned in a cursory manner:

1. Article 4—Accreditation System

Article 4 discusses the means by which the respective Member States "shall establish a system for the accreditation of independent environmental verifiers and for the supervision of their activities", within 12 months of the date the Regulation enters into force.[178] The Article gives Member States the choice of employing either existing accredited institutions, such as private verifying firms, or to allow Competent Bodies to designate or set up any other body as they deem appropriate, provided their neutrality and independence during their work can be guaranteed, and that appropriate parties involved are consulted during the process.[179] Verifiers accredited in one Member State are permitted to perform verification activities in other Member States, although this will be subject to supervision by the accreditation system or body of the "host" State. Provisions must also be made by the accreditation bodies to establish a forum, in which all may participate, to "develop guidance on issues in the field of accreditation, competence and supervision of environmental verifiers".[180]

2. Article 5—Competent Bodies

Article 5 essentially establishes the requirements for each Member State to create, within 3 months of the date the Regulation comes into force, a Competent Body to carry out the items required in Articles 6 and 7 of the Scheme. Of particular note in this Section is the requirement the "Member States shall have guidelines for suspension and deletion of the registration of organizations, for the use of competent bodies".[181] In particular, the Competent Bodies shall have procedures for:[182]

- Considering observations from interested parties concerning registered organizations, and
- Refusal of registration, deletion or suspension of organizations from registration

As with Article 4, the Competent Bodies from all Member States are required to meet at least once per year, with a representative of the Commission, to ensure that all States' application of EMAS is consistent.[183] The outcome(s) of these meetings are to be made publicly available as well.

3. Article 6—Registration of Organizations

While not of much importance per se to the firm working toward EMAS registration, it is useful to briefly examine how organizations are able to become registered, so that companies can receive a "behind the scenes" look at what steps the Competent Body undergoes when reviewing an application for registration. This should help the firms understand any potential for pitfalls during the process, and hopefully to avoid them.

According to Article 6, the respective Competent Body will only accept a firm for registration provided that it meets the following 4 criteria:[184]

1. [the Competent Body] has received a validated environmental statement and
2. [the Competent Body] has received a completed form, which includes at least the minimum information set out in Annex VIII from the organization and
3. [the Competent Body] has received any registration fee that may be payable under Article 16 [see Chapter 6 for requisite fees, if any] and
4. [the Competent Body] is satisfied, on the basis of evidence received, and in particular through the inquiries made at the competent enforcement authority regarding the compliance of the organization with the relevant environmental legislation, that the organization meets all the requirements of this Regulation.

If the Competent Body receives information (usually in a report form from the accreditation body) that the actions taken during the verification audit [by the verifier] were not adequate to determine the suitability for registration, then the application shall be refused or suspended until it can be confirmed that the organization is in compliance with the Regulation.[185]

In addition, Article 6 makes provisions for the suspension or deletion from the register. Although this aspect has been touched upon previously in the case of AH Marks, Article 6 is where the "meat" of the information lies.

"If an organization fails to submit to a competent body, within three months of being required to do so":[186]

- *The yearly validated updates of the environmental statement, or*
- *A completed form, which includes at least the minimum information set out in Annex VIII from the organization, or*
- *Any relevant registration fees*

"The organization shall be suspended or deleted from the register, as appropriate, depending on the nature and scope of the failure".[187]

It is important to note that this aspect of Annex 6(3) gives the Competent Body the *discretion* as to whether or not to remove the firm from the list of registered firms. That is, there is no "hard and fast" rule as to whether, or even if, a firm will be de-registered from EMAS. Granted, the phrase cited above employs the word "shall", but it is tempered by the "as appropriate, depending on the nature and scope" phrase.

This potential oxymoron continues on in section 4 of Annex 6 as well, and is the statutory language from which the AH Marks decision arose.

> If, at any time, a competent body concludes, on the basis of evidence received, that the organization is no longer complying with one or more conditions of this Regulation, the organization shall be suspended or deleted from the register, as appropriate, depending on the nature and scope of the failure.

> If a competent body is informed by the competent enforcement authority of a breach by the organization of relevant regulatory requirements regarding environmental protection, it shall refuse registration of that organization or suspend it from the register as appropriate.[188]

When academics or others point out the somewhat subtle differences between the EMAS regulation and ISO 14001, this is inevitably the segment of the Scheme which they hone in upon. In fact, this could accurately be cited as the central difference between the ISO standard and EMAS: EMAS *requires* compliance with all relevant environmental regulations, and *expressly* provides for the removal from the register of firms for companies which are not in compliance. However, the Regulation does require that a consultation take place among the "appropriate interested parties" before such a decision to remove or suspend can take place.[189]

4. Article 7—Listof Registered Organizations and Environmental Verifiers

This Article will not be addressed here, as Appendix B contains the list of approved environmental verifiers. The list of registered organizations changes on an almost daily basis; as such, any list or discussion of such will be dated almost immediately. The most current list can be obtained from the European Commission's website at www.europa.eu.int/comm/environment/.

5. Article 8—Logo

Article 8 of 761/2001 expressly discusses the "dos and don'ts" involved with what is arguably the most "important" part of the EMAS Regulation—the logo, and its resultant usage. Section 2 of Article 8 details the specific cases in which (registered) organizations can use the EMAS logo, while Section 2 outlines the situations in which such use is restricted or prohibited.[190]

"Only those organizations which have had their environmental management systems verified and which publish independently validated environmental performance information are eligible to use the logo".[191]

"The EMAS logo is an essential tool for companies wanting to market their green credentials. It is an opportunity to associate themselves and their products with a recognisable symbol and high value brand".[192]

> Registered organizations are encouraged to use the EMAS logo as part of their environmental communications and marketing strategies, to differentiate themselves, and their products and services, in the marketplace. In order to gain maximum advantage from using the logo, it is strongly recommended that those responsible for environmental management in the organization closely liaise with the organization's marketing and communications department.[193]

The "UK Guidance on the Use of the EMAS Logo", entitled "Promoting and Marketing your Environmental Credentials" asserts that the Logo has a threefold

function:[194]

- To indicate the *reliability and credibility of information* provided by an organization with regard to the environmental performance of its activities, products and services [emphasis the original];
- To indicate the organization's *commitment to improvement in environmental performanc*e and to the sound management of its environmental aspects [emphasis the original];
- To *raise awareness* about the scheme in the public, among interested parties and among organizations willing to improve their environmental performance [emphasis the original].

According to the remas website, the following are some basic guidelines for displaying and employing the logo:[195]

- Registered organizations can use the EMAS logo as part of their environmental communications and marketing strategies, to differentiate themselves, and their products and services, in the marketplace.
- Registered companies are allowed to use the logo on their letterheads, websites, in promotional literature and advertisements.
- The logo can also be used by registered companies at point of sale to provide information for consumers, for example on shelving displays with products or on product information labels.
- The logo cannot be used to make comparative claims with other products, services or activities from competitors.
- And to avoid confusion with ecolabels, the EMAS logo must not be used on the organization's products.

In addition, "organizations may wish to use extracts from their environmental statement in conjunction with the EMAS logo. Examples include":[196]

- Submitting validated emissions data to environmental regulators
- Information on carbon emissions under national climate change reduction programmes
- Fulfilling legal requirements for public disclosure of environmental information to shareholders and pension schemes.

> In using the logo with extracts, the organization shall only use extracts from the latest validated environmental statement. The extracts need also to accord with the requirements in Annex III 3.5 (a)—(f) [discussed earlier in this chapter] by being relevant and significant and avoid being deceptive or misleading. Extracts from the environmental statement used with the EMAS logo must be validated separately. Time, effort and cost can be saved by identifying which extracts are to be used so that these may be validated at the same time as the statement.[197]

It is instructive to point out that this last aspect, involving the separate verification of environmental statement extracts, is another which may be considered unduly

burdensome. Although in practice an experienced and flexible verifier might be willing to "overlook" this requirement, according to the way the statement is written the verifier must literally re-evaluate, or re-verify, the portions of the statement which are extracted, even if/though they have already been validated as part of the statement as a whole. Again, in practice it is certainly possible to negotiate with the verifier to reduce the amount of time spent on this minor aspect, but technically it must be examined anew. As with the publication of a non-electronic format of the environmental statement, this aspect appears, on paper and on face, redundant. But it is codified in the Scheme.

As alluded to in Chapter 3, "there are two versions of the EMAS logo—one which can be used to demonstrate the organization's EMAS registration, the other to communicate the accuracy and reliability of environmental information associated with the organization, or its activities, products and services".[198] Described in Article 8 of 761/2001, "Version 1" may be used for "Verified Environmental Management" and "Version 2" for "Validated Information". Annex IV outlines the specifics (colors and text) for each logo.[199]

Examples of these two logos are as follows:

Version 1 of the logo indicates that the organization has an EMS in place that meets the requirements of EMAS and ISO 14001. It is intended to inform the public that the organization is registered. It can be used on registered organization's letterheads and on information advertising an organization's participation in the scheme . . . but must not be used on the organization's products. It is important that the logo *is clearly and exclusively attributed to the registered organization* [emphasis the original].[200]

Version 2 of the logo indicates that selected information, to which the logo relates, has been independently verified as being accurate and reliable. It is a powerful marketing

tool, because users of the information can rely on the quality of the information. The logo can be used with selected information from the environmental statement, or with other validated environmental information in adverts [advertisements] for the organization's products or services. *In all cases, the verifier must ensure that the criteria in Annex III 3.5 a-f have been met, that the logo is clearly associated with the validated information and that the logo isn't used on the organization's products* [emphasis the original].[201]

Annex III, 3.5 "Publication of Information" provides options for publication of information in addition to the environmental statement and in points (a) to (f) specifies the requirements that have to be met if selected information from the environmental statement is generated and used bearing the EMAS logo. Annex III, 3.5 requires the information to be:

- Accurate and non deceptive
- Substantiated and verifiable
- Relevant and used in an appropriate context or setting
- Representative of the overall environmental performance of the organization
- Unlikely to result in misinterpretation
- Significant in relation to the overall environmental impact

> In using the logo with validated extracts of the environmental statement, it is important that the logo is clearly associated with the validated information. If the entire publication's content is covered by the environmental statement and validated by the verifier, the logo may be used in any way considered appropriate (e.g. on the cover page, the head of an advert[isement], as a graphic background of the text). If the validated information is only a part within another publication (e.g. the environment page of a company's annual financial report and accounts), or is presented with other non-validated environmental information (one block within a larger text, or one section of a company report), it must

be clearly distinguished from the rest of the text, e.g. by a frame or different coloured background.[202]

6. Article 9—Relationship with European and International Standards

Recall that earlier in the text the "compromise" relating to firms which had already registered to ISO 14001, and which did not necessarily want to duplicate their efforts in order to achieve EMAS registration was discussed. Article 9 of 761/2001 is where the idea is fully "fleshed out" and explained, although it does not mention ISO 14001 specifically!

Section 1 of Article 9 states:[203]

Organizations implementing European or international standards for environmental issues [read: ISO 14001] relevant to EMAS and certified, according to appropriate certification procedures, as complying with those standards shall be considered as meeting the corresponding requirements of this Regulation [761/2001], provided that:

(a) The standards are recognized by the Commission acting in accordance with the procedure laid down in Article 14(2) [involving potential revisions by a committee]
(b) The accreditation requirements for the certification bodies are recognized by the commission acting in accordance with the procedure laid down in Article 14(2).

7. Article 10—Relationshipwith other environmental legislation in the Community

Article 10 takes the basis of Article 9 a step further, in terms of expressly discussing how there is no intent for EMAS to place an additional burden on enforcement agencies, and registered firms, in a given Member State. "Member States should consider how registration under EMAS . . . may be taken into account in the implementation and enforcement of environmental legislation in order to avoid unnecessary duplication of effort by both organizations and competent enforcement authorities".[204] In other words, Article 10 essentially directs Member States to give "special consideration" to EMAS registered firms within their authority, ostensibly so as not to cause a duplication of (enforcement) effort between the State enforcement authorities and the firms. But what is perhaps implicit in this Article is the concept of "jurisdiction" between the Competent Bodies and the State agencies which are responsible for environmental compliance and performance. If one takes the "organizations" term to mean the State agencies, and not the registered firms, then there exists an inherent jurisdictional "tug of war" between who has responsibility for enforcement. Certainly, the State agency has the proper authority, but according to the Article they may conceivably need to defer enforcement actions to the Competent Body within that State. That is not necessary, but given the language of the Article it is conceivable. For States in which the Competent

Body is also the enforcement agency, such as France, in which the Competent Body, the *Ministère de l'Environnement*, also functions as the environmental protection and enforcement agency, this may not be a problem, but in States where the two entities are distinct, such as in the UK, where the Environment Agency is the enforcement body and the Department for Environment Food and Rural Affairs (practically represented as the Institute of Environmental Management and Assessment), there may be some interesting interagency discussions.

8. Article 11—Promotion of organization's participation, in particular of small and medium-sized enterprises

This Article will only be given a cursory examination, with respect to small and medium-sized enterprises (SMEs), as the SME discussion is given significant attention elsewhere in the text. However, Article 11 does address how participation in the EMAS program should be promoted, which is a key aspect for firms who are on the cusp of considering the Scheme to consider.

The Article lays out three prime means to encourage participation in the Scheme:[205]

- Facilitating access to information, support funds [note from Chapter 6 that not all Member States currently participate in this aspect], public institutions and public procurement, without prejudice to the Community rules governing public procurement,
- Establishing or promoting technical assistance measures, especially in conjunction with initiatives from appropriate professional or local points of contact (e.g. local authorities, chambers of commerce, trade or craft associations),
- Ensuring that reasonable registration fees encourage higher participation

VERIFICATION PROGRAM AND FUTURE EVALUATIONS

The verification program is one which is created in consultation between the registered firm and the environmental verifier. The Guidance on this point, cited previously, suggests that:[206]

> The verifier shall design and agree the [sic] verification programme only when the initial full verification and validation of the environmental statement has been completed. In designing the verification programme the verifier should consider:
>
> - Strength and confidence in the internal audit programme, including the frequency of audits
> - The complexity of the EMS
> - The environmental policy
> - Size, scale and nature of the organization's activities, products and services
> - Significance of the organization's direct and indirect environmental aspects over which it has control or can be expected to have an influence

- Strength of the data and information management and retrieval system, as it relates to information and data in the environmental statement
- History of environmental problems
- Extent of activities subject to environmental regulations
- Results from previous verifications
- Experience of the organization in complying with EMAS requirements

In short, these ten elements should comprise the prime aspects which the verifier takes into consideration when setting the parameters of the (at least) annual audit of the program. The list is not meant to be exhaustive, but does provide a solid guideline for both parties involved. For example, if a firm has a relatively complex EMS, if it has a demonstrated or observed history of environmental difficulties, or the results of previous verification audits are either (1) not very complimentary or (2) indicate substantial areas of improvement, these items may necessitate a more frequent verification audit schedule.

The Guidance goes on to elucidate the intent of the audit program, stating:[207]

> This is to ensure that an audit programme is developed which provides management with the information it needs to review the organization's environmental performance and the effectiveness of the environmental management system, and be able to demonstrate that they are in control. It will also provide a basis for the verifier developing and agreeing the [sic] verification programme with the organization and for determining the frequency that they visit the organization. Good practice in designing an audit programme would be to audit the activities, products and services that cause, or have the potential to cause, the most significant environmental impacts more frequently than those of lower significance. The organization should also carry out audits at least on an annual basis, as this will help demonstrate to the organization's management and the verifier that it is in control of its significant environmental aspects.

But what of the individual firm's aspects and responsibilities toward internal audits? Such audits are carried out by the registered organization in order to ensure that all aspects of their program are in compliance with the elements of the Scheme. Annex I-A.5.4 details the requirements of an "Environmental Management System Audit":[208]

The organization shall establish and maintain (a) programmes) and procedures for periodic environmental management system audits to be carried out, in order to

a. Determine whether or not the environmental management system
   1. conforms to planned arrangements for environmental management including the requirements of this International Standard; and
   2. has been properly implemented and maintained; and
b provide information on the results of audits to management

The organization's audit programme, including any schedule, shall be based on the environmental importance of the activity concerned and the results of previous audits. In order to be comprehensive, the audit procedures shall cover the audit scope, frequency

and methodologies, as well as the responsibilities and requirements for conducting audits and reporting results.

With the elements of the Scheme now firmly explored, we can now turn our attention briefly to the emergence of an Environmental Liability Directive, Directive 2004/35/CE, within the European Union. While not directly related to the EMAS program, the two do in fact dovetail well with each other, as many companies do and can use EMAS as a means for reducing their potential exposure to environmental liability issues.

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CHAPTER 4

EXAMINATION OF THE DEVELOPMENT OF THE EU ENVIRONMENTAL LIABILITY SCHEME

"We face a fundamental question which can be described as both ethical and ecological. How can accelerated development be prevented from turning against man? How can one prevent disasters that destroy the environment and threaten all forms of life, and how can the negative consequences that have already occurred be remedied?"

—Pope John Paul II, Speech to the European Bureau for the Environment, L'Osservatore Romano, 26 June 1996

As previous chapters have illustrated, the EMAS scheme is not legally enforceable, in terms of requiring individual companies to adopt the program, although it has been suggested by certain governmental authorities that implementation can result in reduced regulatory burdens. Once a firm decides to implement EMAS, compliance with all applicable environmental regulations becomes mandatory.

However, one issue which has garnered significant attention in recent years, and which is more than tangentially related to EMAS, is the issue of environmental liability. "Liability rules serve primarily to insure an adequate compensation for damages . . . [it] is conceivable that EMAS can serve as prevention instrument [sic] against claims based on environmental-liability law. It can be used to ensure the orderly and trouble-free running of the operation . . . ".[1] For this reason, then, it is instructive to examine how EU environmental liability law has evolved to date, chiefly to observe how EMAS may play a significant role in what is now a legislated Directive within the Community.

When one examines the relatively new concept of environmental liability in the EU, a wide-ranging scope of legal precedents, case law and regulations must necessarily be taken into account, in order to fully understand the context of the concept. However, given that the author is not an attorney, and also that one need not be an attorney to grasp the fundamentals of this concept, only the most salient legal points related to environmental liability law will be addressed.

> The Brussels Convention has long been recognized by European practitioners as an instrument of major importance for litigation between member nations. It provides for uniform rules of jurisdiction, applicable to civil and commercial disputes . . . [i]t solves difficult issues . . . [m]ore important, the Brussels Convention . . . facilitates recognition and enforcement of judgments throughout the European Community.[2]

In 1992, the EU adopted the "strict products liability system", stemming from the Strict Liability Directive, which was passed on 25 July 1985:[3]

> As a consequence, all member nations are in the process of adopting statutes incorporating the new system into their national laws. When it is implemented, the manufacturer, seller or importer of defective products within the EC will be held strictly liable for both "death or bodily injury" and property damage.[4]

While this "strict products liability system" is designed toward just that—product liability—it is important to recognize its existence and role in EU legal society, as it set an important precedent for environmental liability issues in the years to come.

The purpose of the Strict Liability Directive, arising from a 1976 Commission Recommendation, was to harmonize the various Member State regulations relating to liability for defective products.[5] At the time, only France, Belgium and Luxembourg had any legal concept of damage recovery. The Strict Liability Directive was considerably more far reaching.[6]

Initially, three main Commission Proposals related to environmental liability were developed:

1. Commission Proposal for a Council Directive on Civil Liability for Damage Caused by Waste;[7]
2. Proposal for a Council Directive Amending Directive 75/442/EEC on Waste;[8]
3. Proposal for a Council Directive on Hazardous Waste.[9]

Tromans and Thornton (2001) have noted that in the UK, "It is now well accepted, however, that a company can be guilty of most offences and that while a company cannot physically be punished by imprisonment, it may be convicted and fined. Many environmental crimes are of a 'strict liability' nature".[10] "Strict Liability" is defined by Tromans and Thornton as "... a certain physical act or physical circumstances, regardless of whether there was any intention to inflict harm or to cause the results that occurred".[11]

Whether a European company can be held criminally liable for the acts of its employees has been an important legal question for some time. Authorities have generally taken the view that an employee of a firm, assuming he or she is acting as part of their employment role within the company, is liable for these actions if they result in environmental issues.[12] However, again speaking generally, companies will not be liable for the acts of independent contractors operating at their site.

A second issue related to liability for environmental issues can be viewed with regard to whether the government will "bother" to prosecute the offense, and thereby assign liability.

> The decision whether or not to prosecute is always a matter of discretion for the relevant authority. Even if there is sufficient interest for a successful prosecution, the regulator may feel that the public interest is best served by issuing a formal warning or infraction notice, rather than by prosecution.[13]

Council Directive 96/61/EC: the Integrated Pollution Prevention and Control (IPPC) directive, implemented in 1996, was an early precursor regulation with respect to environmental liability and liability-related issues.[14] By more effectively managing

pollution, organizations are able to reduce their exposure to environmental incidents and their resultant legal impacts.

Implicitly recognizing its roots in Article 130r of the Treaty of Rome, the Fifth Environmental Action Programme and Council Directives 84/360/EEC (28 June 1984: regarding air pollution control from industrial plants) and 76/464/EEC (04 May 1976: regarding authorization requirements for discharges of certain substances into the aquatic environment), the IPPC attempted to consolidate pollution prevention. "... the objective of an integrated approach to pollution control is to prevent emissions into air, water or soil wherever this is practicable ... and, where it is not, to minimize them in order to achieve a high level of protection for the environment as a whole".[15]

Annex I of 96/61 lists the categories (and sub-categories, where applicable) of industries to which the IPPC will apply: energy, production and processing of materials, minerals, chemicals, waste management, and "other" (i.e. paper and board production with a capacity exceeding 20 tonnes per day). The respective Member States are assigned the responsibility for ensure that the operator(s) of the Annex I facilities are in compliance with the IPPC, and may do so by writing such conditions into any operating permits. The IPPC Directive expressly addresses in Section 14 the cooperation among the various appropriate agencies of the Member States.[16]

As with EMAS, the IPPC Directive instructs that emission limit values should be based on BAT, but that a given technique or technology should not necessarily be employed. However, "Whereas, when an environmental quality standard requires more stringent conditions than those that can be achieved by using the best available techniques, supplementary conditions will in particular be required by the permit ... ".[17]

On 02 August 1989, the European Commission introduced the concept of strict liability, relating to the "polluter pays principle", which would require firms to bear financial responsibility for remediation of any environmental damage caused by their products or waste.[18] At the time,

> ... producers of waste include those persons whose business creates waste or who undertakes any operation changing the nature or composition of the waste. Liable producers also include importers of hazardous waste into the EEC and transporters of the waste when the original producer or importer cannot be identified. Liability for a producer terminated when the waste is transferred to a licensed disposal facility.[19]

As we have seen earlier, this is a departure from the U.S. regulations, as manifested in the Resource Conservation and Recovery Act (RCRA, 1976) and The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, 1980). RCRA's nickname is the "cradle to grave" statute. That is, RCRA regulates chemicals from the time they are created to the time they are disposed of CERCLA, however, expressly provides for retroactive liability. Retroactive liability means that parties found responsible for causing a release are liable even if their actions occurred prior to CERCLA's enactment. Congress intended that the parties who were responsible for creating the problem should also be the parties who pay for cleaning it up—whether those actions

occurred before CERCLA or not.[20] Within the EU, only Sweden has an environmental liability fund similar to CERCLA, established to provide funding to remediate sites where the responsible actor is either insolvent or cannot be located. Again similar in aspect to CERCLA, Sweden mandates licensed sites to contribute to an environmental civil liability fund.[21]

The directive fell short on two main fronts, in substance. It limited the time for action to a maximum of 3 years from when the plaintiff knew or should have known of the damage. Secondly, actions could only be brought by public authorities who were functioning in their role(s) as environmental stewards.[22]

At the close of the 1990s, the European Parliament tasked the European Commission to develop a proposal for legislation in this area. On 09 February 2000, the European Commission adopted a White Paper on Environmental Liability (the "White Paper"), whose chief aim was to determine how the "polluter pays principle" could be used to enhance Community environmental policy and to avoid environmental damage.[23] The UK Environment Agency has stated that it will normally prosecute offenses where/when:[24]

- The environment has been significantly damaged
- Operations are carried out without a license
- Breaches of licenses are persistent
- A site has failed to comply with a notice requiring action
- Operators have acted in reckless disregard for management or quality standards
- An operator has given false information to the Agency or refused to comply with a request for information or has obstructed the Agency in its duties.

Prior to this point in time, there was relatively little environmental liability doctrine in place in the EU. One of the few was the 1989 Companies Act, under which UK firms might purchase a "directors and officers" liability policy, which covered the same with a high limit of indemnity.

> . . . the policy will also indemnify the company in those circumstances in which it is allowed to reimburse the director for legal costs or compensation payments ordered against them . . . however [this type of insurance] is likely to be unhelpful in respect of environmental liability, because the policies generally exclude liability for pollution and clean-up costs.[25]

In the White Paper, it was recognized that the individual Member States had taken numerous steps toward individual (but nationalized) schemes to address damages and/or injury to life and property, as well as to remediate contaminated sites. However, the Commission acknowledged that environmental damage, "damage to nature", had never been expressly addressed. Perhaps as a result, issues respecting the former had received much greater attention (and financial consideration) in firms than damage to the natural environment. "This has traditionally been seen as a 'public good' for which society as a whole should be responsible, rather than something the individual actor who actually caused the damage should bear".[26] Brans and Uilhoorn (1997) commented that "In most Member States, environmental damage cannot be compensated in the absence of

any personal damage or damage to property. An environmental liability régime at EC level needs to address this issue . . . ".[27]

The thinking behind the White Paper was that by legislating an environmental liability regulation, a set of common "baseline" rules would be implemented that all firms operating in the EU would be required to follow. Thus, a country such as Germany would still be permitted to have more stringent regulations in a particular area, such as wastewater discharge, but there would still be a minimum set of standards common to each country which would govern environmental responsibility and action across the EU. The Commission felt that by holding firms liable for the damage to life and property, *as well as to the natural environment*, and more healthy environment overall would result.

From the outset, the Commission believed that the proposed environmental liability scheme (ELS) should be one based on strict liability. That is, fault need not be admitted in an environmental incident. Rather, the mere fact that the incident occurred would be enough to affix liability to the party. In addition, the Commission put forth the idea that any fines or other compensation paid by the polluter should be applied toward the remediation of the damage to the natural environment. Perhaps realizing that such an ELS would generate a potential logjam of court cases, the ELS would allow public interest groups to step into the shoes of the authorities, where the authorities have not or cannot act in a timely manner. This aspect is especially interesting when one considers that the ELS, if promulgated, would *expressly* allow these public interest groups to take action. In the past, such groups had been required to file lawsuits in order to compel government agencies to take action. This method is extremely prevalent in countries such as the United States.

The rhus Convention of 1998 provides the basis for this relatively unusual action. Recall that the "polluter pays" principle is specifically addressed in Article 174(2) of the EC Treaty. Given that, on 14 May 1993, a Green Paper was published by the Commission on the tangential issue of remedying environmental damage.[28] This Green Paper was followed by a series of pubic comment meetings and hearing at which the voices of industry, public interest groups and others were heard, in November of that year. The following April, the European Parliament adopted a resolution specifically asking for an ELS. Parliament believed that EU-wide legislation in the environmental liability area was sorely needed.[29]

On 23 February 1994, the Economic and Social Committee (ESC) released their opinion on the May 1993 Green Paper. The ESC view buttressed the burgeoning environmental liability idea, and interestingly tied it to the existing authority of the former articles 130(r) and 130(s) discussed in Chapter 3.[30] After this initial flurry of activity, the momentum stalled somewhat for a period of almost 3 years, although there was a considerable amount of behind-the-scenes discussion on the topic. On 29 January 1997, the Commission determined that the White Paper should be prepared. In order to accomplish this goal, four separate studies were commissioned. For the purposes of clarity in understanding further development of the ELS, they shall be examined individually, and the Directive which emerged from this process (2004/35/EC), will be discussed afterwards.

STUDY OF CIVIL LIABILITY SYSTEMS FOR REMEDYING ENVIRONMENTAL DAMAGE

The "First Study" was prepared in June 1996 by McKenna and Company of London, and addressed the legal systems of almost 20 countries. It was designed to provide an overall environmental liability survey.

The First Study recognized that all nineteen countries surveyed had incorporated the standard civil liability concept into their legal systems. In several of the countries, this concept had been taken a step further, and used to address strict liability for environmental remediation as a result of hazardous activities.[31] Many of the Scandinavian countries, particularly Norway and Sweden, incidentally the first countries to enact such regulation, have created specific laws to address compensation for environmental damage. However, "many of these laws are recent and therefore experience of their use is limited".[32] Additionally, although these laws exist, they are disparate in the areas to which they apply. The legislation of Denmark and Germany, for example, set forth a specific "positive list" of industries to which their environmental liability laws pertain, while Finland and Sweden relate their laws to any activity which damages the environment.[33] In France and The Netherlands, environmental action groups which "represent" various environmental media or interests, may potentially claim damages in the interest of these areas. In Norway, monetary damages received are often paid to the authorities performing the clean-up operation.

Most of the countries assessed employ administrative law, chiefly where licenses or permits are issued, and violations of those items can result in penalties and/or prosecution. Some of the countries have these administrative bodies centralized, such as Finland, and others have them more sectoralized, such as Denmark. When licenses or permits are violated, countries such as Spain, Germany and Finland have exceeded the status quo of the countries by enabling criminal penalties where applicable. However, by and large, civil penalties are the main means of compensation for environmental damage.

> Recoverable losses are generally limited to personal injury, damage to property and, often, pure economic loss. Accordingly, most systems do not allow compensation for pure ecological damage . . . [however, in situations where it is permitted] . . . compensation in such circumstances is not in respect of the ecological damage but in respect of any consequential loss to the landowner or occupier, for example, for the reduction in value of land or damage to livelihood.[34]

In the majority of countries surveyed by the First Study, the legal concept of "standing" is employed with respect to environmental damage. That is, only a person with a direct interest, or who is directly affected by, the damage will be permitted to sue for compensation. In the past, this idea has been directly linked to only owned land or resources; as such, persons could generally not bring an action on behalf of pubic lands.[35] However, tied to the development of the ELS, countries such as Italy (interest groups can intervene in civil damage assessments), The Netherlands and Portugal (interest groups can seek injunctive relief) and Luxembourg (interest groups can act as civil parties) have more formally recognized environmental interest groups as having

a unique niche apart from the general populace, and therefore granted them special provisions under environmental compensation law.[36]

A final important point revealed in the First Study, relative to the concept of environmental liability, is the role of insurers in the process. While the majority of insurance policies available in the countries surveyed are limited to general accidental damage, only Denmark, Spain, France, Italy and The Netherlands cover specific pollution risks.[37]

ECONOMIC ASPECTS OF LIABILITY AND JOINT COMPENSATION SYSTEMS FOR REMEDYING ENVIRONMENTAL DAMAGE

This "Second Study", conducted by ERM Economics of London in March 1996, was undertaken to examine the potential economic impacts of an ELS on the EU. The Second Study foremost attempted to determine the expected costs and benefits of such a system, and then to attempt to reconcile these items with existing empirical data. As an addendum to this process, firms in seven industrial sectors within five countries were surveyed for their attitudes, as were banks and insurance companies in the same markets.

"A significant finding of the study [was] the surprising lack of previous studies into the economics of environmental liability systems", ERM found.[38] In other words, the Second Study was treading on virgin ground. No EU country had, at least formally, examined the economic costs of an environmental liability system. Perhaps even more surprisingly, according to the study's findings, neither had any of the firms, insurers or banks! In fact, there was such a dearth of economic evaluation on the topic that "[t]he research conducted for this study was unable to find any firm or industrial association which had fully quantified its existing and future environmental liabilities. Nor did the research reveal that banks or insurance companies were able to quantify the future costs in any detail".[39]

The authors of the Second Study offered two potential reasons for this lack of empirical data. First, they postulated, the concept of environmental liability systems is fairly new in the EU, and consequently there is little experience to draw upon. Secondly, environmental liability is fundamentally a "positive list". A "positive list" is one in which if an item is on the list, it is expressly regulated. Absence from the list indicates that the item is free from that particular regulation. An example is the United States' Hazardous Air Pollutants (HAPs), a list of 188 compounds deemed to be hazardous in certain ambient concentrations. If a given compound is one of the 188 listed, it is subject to regulation under the Clean Air Act standards. If it is not listed, it is unregulated by the statute. The same concept holds true for the concept of environmental liability in the EU. It is only measurable, according to the Second Study's authors, if an incident occurs for which liability is to be attached or established. The absence of such damage is inherently unobservable.[40]

The Second Study further postulated that ELS work best where a clear causative effect is observable; for example, the sole underground storage tank (UST) containing

naphthalene leaks into a river. The river is subsequently found to be contaminated with naphthalene. Causation is direct and attributable. However, when the cause, size or value of the damage is difficult to assess, such as potentially in the case of damage to natural resources, this liability route may become more convoluted.

A second finding of the study was perhaps intuitive to those who are familiar with the actors as groups, but is instructive in understanding the current situation of the ELS. Most firms supported the "polluter pays" principle, but only to the extent that it covers their own actions. Thus, firm A would not want to be part of an industry-wide "compensation fund" which would be used to pay for the remediation of damage caused by firm B. In addition, companies do not want an ELS to contain:[41]

- Retroactive liability
- Compulsory financial security (mandating firms to hold a financial reserve, such as a surety or performance bond, in the even that their actions cause environmental damage which results in financial penalties)
- Joint (industry-financed) compensation funds (see above)
- Strict liability without limits or defenses.

In a similar vein, the insurance and banking houses examined by the study held forth two main concerns related to ELS. First is the omnipresent concern about retroactive liability, also cited by the private firms. Insurers were concerned that if a policyholder was found to be liable for environmental pollution that occurred in the past, and the insurer paid out as a result of underwriting that policy, the insurers could potentially suffer financially if this occurred on a grand scale. A second concern of insurers related to an ELS is the amount of effort and detail they would need to undergo in order to rework or create policies to manage environmental pollution.[42] Banks were concerned that they might experience a "pass-through effect" of environmental damage liability by holding title to land which was deemed contaminated or otherwise unfit for use. If a loan was extended to a company, and that company was involved in an environmental incident for which liability was assessed (insured or otherwise), and the firm consequently closed its doors, the lending institution would hold title to land which would be essentially worthless financially.

As a result of these findings and insights, the Second Study concluded that the development of an ELS would have an advantage in the areas of accidental pollution, provided causation can reasonably (in terms of cost and effort) be proven, but would have a distinct disadvantage in "diffuse pollution" (such as air) where causation (and consequent direct harm) could be more difficult to prove.[43] Examining this conclusion another way, one could observe that in the foregoing case of the leaking UST, an ELS program could perform reasonably well. A clearly identifiable party is clearly the cause of an incident which leads to environmental damage. However, if a scrubber failed on a factory stack in a major industrial area, and that failure caused a release of a "common" toxic substance (such as sulfur dioxide), causation would be challenging to prove. While it is theoretically possible that emissions records, permit logs or so forth could provide insight into the specific cause of the release, a homeowner several miles downstream from the site would have difficulty proving that specific incident as the

cause of a respiratory illness, for example. As can be seen, when the nexus between source, incident and "sink" becomes more distant or murky, ELS does not provide as strong of a potential remedy as it otherwise might.

LIABILITY FOR ECOLOGICAL DAMAGE AND ASSESSMENT OF ECOLOGICAL DAMAGE

The Third Study commissioned as part of the White Paper assessment of an ELS was conducted by Edward Brans and Mark Uilhoorn of Erasmus University in Rotterdam (The Netherlands) between July and September 1997. Brans and Uilhoorn's study examined how, if at all, ecological damage could or would be compensated, regardless of by what activity caused the damage. In other words, the Third Study effectively removed the personal liability issues discussed by McKenna and Company in the First Study, and simply examined how the damage would be compensated.

At the time of the Third Study, the scope of the proposed ELS was understandably broad, as well as relatively vague. It tended to focus on damages to the environment which were not fully resolved or remediated.[44] In addition, *restoration*, as well as response, measures are to be taken, with the responsible party being liable. It also defined what was to be considered "damage" to natural resources, a fundamental definition in establishing liability issues. "The scope of the liability regime is limited to ecological damage and concerns damage to unowned and owned natural resources, *but only in so far as these have a specific value to the public* [emphasis added]".[45] Understandably, that raised yet another issue as it attempted to solve one: what is considered a "specific value to the public"? Is it the aesthetic value one obtains from a pristine lake, even if the lake is not a source of drinking or other water for humans? The later aspect would seem to be more clearly determined than the former. What role, if any, do aesthetics or "nature for nature's sake" play in establishing environmental liability?

LIABILITY FOR CONTAMINATED SITES

Deloddere and Ryckbost (2000) have asserted that an EC liability scheme for remediation of contaminated sites needs to be harmonized with respect to the definition of contaminated media and the clean-up standards to be employed.[46] The pair believes that implementing such a system at the EC level will not preclude the individual Member States from organizing individualized systems to facilitate the remediation; however, "... the EC rules should require Member States to ensure that a number of aspects of the clean-up procedure are regulated in order to guarantee a minimum of efficiency and due process".[47] Deloddere and Ryckbost assert that any EC liability scheme should only address liability for future soil contamination, however.

In 1985, the EU adopted Council Directive 85/337/EEC, later amended by Directive 97/11/EC, colloquially known as the Environmental Impact Assessment (EIA) Directive. "It requires Member States to carry out environmental impact assessments

on certain public and private projects before they are authorized, where it is believed that the projects are likely to have a significant impact on the environment".[48] During the EIA process, the public is able to provide input into the process, and this input must be taken into consideration when determining if the project is to go forward.

In 2003, the European Commission brought infringement procedures against nine EU Member States—the UK, France, Italy, Ireland, Spain, Germany, Belgium and Luxembourg—for allegedly failing to follow the EIA process for several projects within these countries.

As of early 2004, the EU Directive on Environmental Liability was reported to be only a few months away from becoming law.[49] The final Directive will be examined at the close of this chapter, but during the development process, as with virtually any regulation or legislation, individuals were divided on the issue. "Simply put, the directive's aim is to harmonies the rules governing environmental liability throughout the European Union on the basis of the 'polluter pays' principle. In theory, harmonization allows the European Union's internal market to operate fairly".[50]

> The directive differs from other, more traditional, legislation in that it establishes an administrative (rather than a civil) liability regime that gives Member States' authorities (rather than private parties) the right to require operators to bear the costs of preventing and restoring environmental damage.[51]

The draft directive introduced the term "operator" to describe those who may be held liable for environmental damage.

> Operators fall into one of two categories, and their liabilities differ according to the category. Those undertaking environmentally risky activities . . . [such as the industries of oil, chemicals and waste management] can be held strictly liable for environmental damage to land, water and biodiversity. However, operators of other, less dangerous activities (such as agriculture) can be held liable only for biodiversity damage, and only if they are at fault or have been negligent.[52]

Liability was to be "prospective" under the directive, not historical. In other words, operators can only be liable for damage(s) which occurred after the directive is implemented by their particular Member State.

However others, such as economists and attorneys, argued that it such issues can be addressed by the Member States as well as if there was a harmonized standard.[53] Indeed, there are already liability schemes in most of the individual Member States, albeit to differing degrees of efficacy. "The Commission acknowledges this but is concerned about the consistency of the application of the law across the EU. Hence the new directive".[54]

In addition, companies currently operating in the EU saw it as an increase in environmental liability exposure.[55] In the UK, for example, the government believed the new directive will cost industry €2.5 billion in extra costs. Given that, the UK government had declared that operators will not be required to maintain environmental liability insurance, and that the issuance/presence of an operating permit will be an admissible defense against liability.[56]

"Ironically", the individual Member States may elect to be more stringent than the directive if they wish, which *de facto* would seem to undermine the entire purpose of the directive. However, this is not the case, since it sets a baseline for the Member States who wish to simply meet the terms of the directive, and not go beyond them. This serves to put into place a liability scheme where there might otherwise not have been one.

"One of the main features of the new directive is its inclusion of biodiversity damage which is either not covered or insufficiently covered in national environmental liability law . . . Under the directive, a hierarchy of restoration measures exists":[57]

- Primary restoration to restore the natural resources to a baseline condition that existed before the damage occurred.
- Complimentary restoration to be undertaken if primary restoration does not return the natural resources to the baseline condition.
- Compensatory restoration to compensate for interim losses during the period of recovery.

Perhaps one of the main challenges with the biodiversity portion of the directive was establishing a cohesive baseline for risk determination among all Member States.

> A fundamental change from the White Paper also exists with the proposed directive. Compared to the Commission's White Paper on Environmental Liability", the position of public interest groups has fundamentally changed. Unlike the White Paper, NGOs are now excluded from the right to claim compensation from alleged polluters. Instead, qualified NGOs are afforded the right to request the competent authorities to take action against a polluter.[58]

DIRECTIVE 2004/35/CE

Directive 2004/35/CE, "... on environmental liability with regard to the prevention and remedying of environmental damage", was formally published in the Journal on 30 April 2004. The Directive was unique in several regards, and thus shall be examined here in some detail.

The Directive begins with a fairly "flowery" preamble, but one which is useful to take note of in order to fully understand the objectives of it:

> There are currently many contaminated sites in the Community, posing significant health risks, and the loss of biodiversity has dramatically accelerated over the last decades. Failure to act could result in increased site contamination and greater loss of biodiversity in the future. Preventing and remedying, insofar as is possible, environmental damage contributes to implementing the objectives and principles of the Community's environment policy as set out in the Treaty. Local conditions should be taken into account when deciding how to remedy damage.
>
> The prevention and remedying of environmental damage should be implemented through the furtherance of the 'polluter pays' principle, as indicated in the Treaty and in line with

> the principle of sustainable development. *The fundamental principle of this directive should therefore be that an operator whose activity has caused the environmental damage is to be held financially liable, in order to induce operators to adopt measures and to develop practices to minimise the risks of environmental damage so that their exposure to financial liabilities is reduced* [emphasis the author's].[59]

There, in black and white, is the official position on environmental liability in the EU: those who contribute to or otherwise cause environmental damage should be held financially liable. Note that, at this point in the Directive, no provisions are yet made for criminal or civil liability. Furthermore, the Directive expressly notes that it "does not affect rights of compensation for traditional damage granted under any relevant international agreement regulating civil liability", and that it is not applicable to damage or threat of damage from military matters or natural phenomena.[60] Thus, inter-Community laws, or other types of international regulations, are not necessarily superseded—under civil tort liability—by the creation of this Directive. Finally, the Directive does not apply to cases in which personal injury results, private property is damaged, or any economic loss is received.[61] Presumably, by specifically excluding them from the language of the Directive, the possibility of bringing separate—civil, and potentially criminal—actions is left open.

When environmental damage does occur, the operator is required by the Directive to immediately inform the Competent Authority of the situation, and to take:[62]

> All practicable steps to immediately control, contain, remove or otherwise manage the relevant contaminants and/or any other damage factors in order to limit or to prevent further environmental damage and adverse effects on human health or further impairment of services . . .

The operator is also responsible for providing potential remedial measures, as defined in Annex II, and for submitting them to the Competent Authority for approval. The Authority will then decide which one(s) of the measures shall be employed. This is presumably because the operator has the most technical and accurate knowledge of both the release and of the items which comprise the release.

In addition, the Directive stipulates that "environmental damage" now is specifically defined to include "damage caused by airborne" elements, "as far as they cause damage to water, land or protected species or natural habitats".[63] In other words, emissions (such as fly ash, etc.) from an incinerator, for example, which impact the water, land, protected species or natural habitats, are *de facto* included in the Directive under the scope of damage. Thus, the firm could not reasonably argue that their emissions of elevated levels of fly ash were not regulated because they were simply released into the atmosphere, and therefore harmed no one. Regulators need only to look where the ash ultimately lands, and apply the Directive from that point.

The Directive goes on to "admit" that such a grandiose program cannot reasonably be created and/or implemented at the Member State level, so the entire Community necessarily must undertake the action in the form of a Directive.[64]

Furthermore,

> This Directive should apply, as far as environmental damage is concerned, to occupational activities which present a risk to human health or the environment. These activities should be identified, in principle, by reference to the relevant Community legislation which provides for regulatory requirements in relation to certain activities or practices considered as posing a potential or actual risk for human health or the environment.[65]

Here, the Directive makes explicit reference to occupational activities, which also had been either absent from previous Community legislation, or which were handled under other types of regulations, etc. Occupational activities here might be hazardous solvent or chemical production, hazardous waste management, etc. The Directive requires that these activities be identified, although broadly is sufficient, in the various Community regulations, with regulatory requirements for their safe conduct clearly defined. This is further to the Directive's aim that any Treaties, international conventions and/or Community legislation which are more strict than the Directive with regard to their application shall have "express account" taken of them.[66] In addition, Member States are not prohibited from enacting more stringent regulations and criteria relating to environmental damage, nor are they precluded from adopting measures where double recovery of costs may result.[67]

The issue of cost bearing and of cost recovery is central to the Directive. Article 8 states this point quite clearly: "the operator shall bear the costs for the preventive and remedial actions taken pursuant to this Directive".[68] However, the Authority does reserve the express ability to recover less than the full costs involved, if (1) the effort to do so would be greater than the amount of monies recovered, and/or (2) the operator cannot be identified.

Furthermore, there are certain areas in which operators would not be responsible for bearing the costs of preventive or remedial actions. These chiefly arise from situations where the operator can clearly prove that the damage was either caused by a third party and *despite* that the appropriate safety measures were in place, or that the operator was complying with a compulsory order issued by a public authority, other than one which arose as a result of an incident caused by the operator or his activities. Thus, discharging a given amount of pollutant in wastewater, but following one's permit limitations with respect to this level, would not subject the operator to cost recovery actions. However, if the limitation was set because of past compliance violations in this regard, then the operator would be subject to cost recovery activities, under the Directive. Finally, it is instructive to note that the limitation period on the recovery of any costs associated with environmental damage is limited to " . . . within five years from the date on which those measures [measures taken in pursuance of the Directive] have been completed or the liable operator, or third party, has been identified, whichever is the later".[69]

The Directive goes on to recognize that "not all forms of environmental damage can be remedied by means of the liability mechanism".[70] Therefore, it specifies the

"requirements" for it to be sufficiently employed:[71]

- There needs to be one or more identifiable polluters;
- The damage should be concrete and quantifiable;
- A causal link should be established between the damage and the identified polluter(s).

In other words, liability under the Directive is perhaps not as straightforward as it might first appear. A clear polluter or polluters must be identified, who are clearly responsible for causing "concrete and quantifiable" damage. Thus, according to this language, if a firm reduces high levels of NOx from its facility, and this reacts with atmospheric conditions to cause acid rain, if a nexus between the acid precipitation and the specific emitting firm cannot be created then, according to the language of the Directive, liability cannot be affixed. Certainly, actions may be attempted, but strictly interpreting the language present seems to preclude the possibility of direct liability.

Although the Directive is certainly ambitious in its scope and goals, some of the details are necessarily left up to the "ideas" of the individual Member States. For example, with respect to restoration of specific environmental damage, "a common framework should be achieved to determine what is effective restoration. In addition, where the extent of environmental damage may not be known at the outset, the competent authority is responsible for determining which "instance of environmental damage is to be remedied first".[72] Bear in mind that, for various reasons, this may not be the most visible damage or even one which is perceived by outsiders to be the most severe.

Beginning with Section 18 of the Directive, we begin to see the "meat" of the program. Section 18 clearly delineates that "... an operator causing environmental damage or creating an imminent threat of such damage should, in principle, bear the cost of the necessary preventative or remediation measures".[73] This clause is particularly interesting, for two reasons. First, it makes a distinction between "damage" and the "imminent threat of such damage". That is, a rupture in a tank containing sodium chlorate solution, which contaminates the environment, is treated in the same manner, under the Directive, as the same tank which has a potential for failure and contamination, but which does not actually do so. Secondly, the phrase "in principle" leaves quite a bit of "wiggle room" in its language. The operator should bear the cost, but is not necessarily *required* to do so under the Directive. The language goes on to say that, in the event that a third party acts to remediate the damage, appropriate measures should be taken by the party to recover the costs from the operator, and also that the individual Member States should provide for what is termed a "flat-rate" calculation in order to recover "administrative, legal, enforcement and other general costs...", within a reasonable timeframe.[74]

Under this Section, and more specifically Article 5 ("Preventive Action"), the respective Competent Authorities shall have the authority to require operators to:[75]

- Provide information on any imminent threat of environmental damage

Or in suspected cases of such an imminent threat:

- Require the operator to take the necessary preventive measures;
- Give instructions to the operator to be followed on the necessary preventive measures to be taken; or
- Itself take the necessary preventive measures.

Thus, the Competent Authorities are given the express permission to act to prevent or to mitigate environmental damage, even absent a direct incident or a request (i.e. from an NGO, as in the following paragraph) from an outside group. The Authority need not wait until another party acts; rather, they may take action directly.

A final interesting aspect of the directive is that "persons" who are "adversely affected or likely to be adversely effected by environmental damage should be entitled to ask the competent authority to take action".[76] In other words, such parties as non-governmental organizations or public interest groups (such as Greenpeace, EDF, Friends of the Earth, etc.) have the at least implicit authority to ask the relevant competent authorities to take action against operators on their behalf, even though they may not actually be directly affected. In theory, this could result in significant bottlenecks in the legal and other processes within the various Member States, depending upon how the NGOs and others attempt to make use of this provision.

With the elements of the Scheme now firmly explored, we can now turn our attention to how the various Member States of the European Union have elected to implement and manage the EMAS program in their respective countries. Although the regulation itself is "cast in stone", it will be instructive—and certainly interesting—to examine the "disparities" among the EU 25 with respect to implementation, support and enforcement.

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CHAPTER 5

DISCUSSION AND EVALUATION OF EMAS IMPLEMENTATION IN EACH OF THE EU-25 COUNTRIES

"The important thing is not to stop questioning. Curiosity has its own reason for existing".
—Albert Einstein

A study conducted in the spring of 1999 by the European Commission's Eurobarometer Unit revealed that 83% of the EU citizens believed that "protecting our environment" should be a priority.[1] Generally speaking,

> Environmental management systems are favored because all companies can implement them, regardless of their current levels of environmental performance. Schemes such as EMAS that are open to all are considered by industry to have a greater potential to make a difference to the environment when compared with selective measures . . . [2]

A 2001 examination of the external benefits of EMAS by Steger et al concluded that these benefits simply did not materialize between 1995 and 2001.[3] "The environmental performance of companies with EMAS did not differ from companies with other EMSs, and the regulation was not only more demanding than expected but also more complicated and difficult to implement".[4]

In this chapter, we will examine, country by country, the state of EMAS in each of the EU-25 countries. The examination will include observations as to the efficacy of the systems in place, opportunities for financial or other incentives to implement the program, obstacles encountered (or persisting) as part of the process, and various other items. In many instances, each country's section has been reviewed by at least one member of the Competent Body for that country, for the purposes of accuracy and completeness.

While each Member State may provide for somewhat different means and criteria for EMAS registration, and/or for the certification of auditors, for example, the Scheme itself sets out some of the fundamental requirements for registration which are common to all 25 Member States. Article 16, "Costs and fees", of 761/2001 expressly provides for the assessment of specific fees in order to register an organization to EMAS, but gives certain latitude to the various Member States as to how and in what amount they shall be assessed, as long as the States inform the Commission. Specifically:

> A system of fees in accordance with arrangements established by Member States may be set up for the administrative costs incurred in connection with the registration procedures

> for organizations and the accreditation and supervision of environmental verifiers and other related costs of EMAS.[5]

Reduced rates, as well as other financial incentives, may be available for SMEs in certain Member States. For a more detailed discussion of this issue, please see Chapter 6.

United Kingdom*

"The UK approach to environmental policy has focused on regulation through negotiation and compromise in practice. It has been contrasted with the practice in other countries . . . of the application of uniform and often rigorous environmental standards".[6] In fact, Carter (1998) has argued that "the establishment of uniform air and water quality standards and the standardisation of pollution control procedures has upset the cosy, 'gentlemanly' British style".[7] In fact, "the risk of being identified as non compliant is considered too high by UK companies".[8]

> The UK government had afforded the [S]cheme considerable support since it was first released as a consultation paper; consequently, under its Presidency from July to December 1992, the government listed it as one of its presidential priorities and made strenuous efforts to achieve its adoption.[9]

However, although the UK government was an initial champion of EMAS, and the first Member State to fully embrace the Scheme, Kähler and Rotheroe (1999) have asserted that EMAS has had less success—as manifested in firms seeking registration—in the UK primarily because the UK focuses on selling goods to the world market, not just to the European Union. As a result, there exists more of a focus on the more "cosmopolitan" standards, such as ISO 14001 and ISO 9001, which are better known in the global marketplace.

Furthermore, as we have seen, British Standard (BS) 7750 "gave birth" to EMAS and ISO 14000 in part, and 7750 had made considerable inroads into UK companies. BS7750 had been available since 1992, and formally in development since 1990; therefore, moving from 7750 to EMAS and ISO 14000 was a relatively straightforward task. Finally, since the ISO 9000 quality standard was already in place with many UK firms, there was a desire to have both ISO certifications, where possible, managed by the same body. As such, the UK tends to prefer ISO 14001, which is more global in its acceptance, over EMAS.[10] "The view seems to be that in the perception of stakeholders there is no major differentiation between ISO 14001 and EMAS".[11]

This is perhaps in contrast to the view held by the UK Environment Agency, as recently as 2002:

> The Environment Agency also gives the highest level of recognition to EMAS, more than ISO 14001, in its risk rating scheme [the Occupational Pensions Regulatory Authority,

* The author is extremely grateful to Mr. Andrew Marlow of the United Kingdom Accreditation Service for his efforts in reviewing this section for accuracy and completeness.

> OPRA] under the Integrated Pollution Prevention and Control regime . . . Government also recognizes the importance of using EMAS to develop a more risk based approach to regulatory inspection and in its advice to the Agency it has directed it to "take account of robust environmental management systems in particular the Eco Management and Audit Scheme and ISO 14001".[12]

Furthermore, British companies are generally not habituated to stringent environmental regulation. Strachan et al (1997) discovered that many firms surveyed in the UK felt that the environmental programs designed were extremely comprehensive, and therefore required a very elaborate EMS to coordinate all aspects: "a bureaucratic minefield".[13] In addition, they found that allocating employees to the different tasks identified in the EMAS program caused significant issues, either due to a lack of knowledge or a fundamental resistance to change.[14] While many firms surveyed reported "significant" financial savings from EMAS implementation, they were not able to specifically quantify them. However, none of the firms evaluated reported an increase in sales which they believed was attributable to implementing EMAS.[15]

Again according to Strachan et al, the initial costs of meeting the EMAS requirements in the UK ranged from £25,000 (approximately €35,600 at press time) to £296,000 (€421,000), with an average cost of £94,600 (€134,600). Ongoing (annual) costs ranged from £3,000 (€4,300) to £25,000 (€35,600), and averaged £10,433 (€14,900).[16] The registration fee at the close of 2003 was €100,442 for SMEs, and €215,232 for multi-site facilities, with re-registration fees ranging from €502 to €1,148.[17]

The United Kingdom's accreditation of EMAS verifiers is carried out by the United Kingdom Accreditation Service (UKAS) [21-47 High Street, Feltham, Middlesex, TW13 4UN, Tel: +44 20 8917 8555, www.ukas.com, e-mail: info@ukas.com], and the Department for Environment Food and Rural Affairs [Department for Environment, Food & Rural Affairs, Nobel House, 17 Smith Square, London, SW1P 3JR, Tel: +44 020 7238 6000, Fax: +44 20 7238 6609, http://www.defra.gov.uk/] functions as the Competent Body, although for practical purposes, this role is contracted to the Institute of Environmental Management and Assessment (www.iema.net). British verifiers are not accredited as individuals, but only as whole organizations.[18] The corresponding lead verifiers must be accredited within an organization, and the individual must either carry out the verification audit or lead a "support staff" of others, each of which has expertise in a different environmental area.[19] A minimum of 5 years of environmental protection-related professional experience is requisite, and practical and theoretical skills must be proven during a witnessed site audit.[20] However, according to McIntosh and Smith (2001), the usefulness of EMAS in the UK was largely dependent upon how qualified and focused a particular verifier was. "The functioning and reputation of EMAS is highly dependent upon the technical qualification and independence of the accredited environmental verifiers".[21]

Erskine and Collins (1996) examined the impact and response of EMAS on 28 paper companies in the UK, France, Germany and Sweden.[22] With respect to the UK

firms, it was revealed that at least five environmental managers had been appointed no earlier than the preceding 2 years.[23] In addition, "companies based in Britain appear to have the least concern about the [environmental] performance of suppliers", according to the study. This could well be due to the perception in the UK that governmental legislation is the most effective method for improving environmental performance.[24] This position stems from the perceptions that legislation creates a level playing field, it is able to be (more) specifically targeted, and is more cost-effective than voluntary measures (because voluntary measures will not, it is believed, be adopted; therefore, they will have to be followed up with costly mandatory legislation).[25]

The UK does not offer subsidies, *per se*, to EMAS registrants, nor does it offer any type of regulatory relief for the same. However, before its dissolution due to poor participation in 1997, the British Department of the Environment had implemented the Small Company Environmental and Energy Management Assistance Scheme (SCHEEMAS), whose objective was to encourage SMEs to participate in EMAS.[26] Grants of up to 50% of the costs to employ outside consultants were made available to SMEs.

Looking forward, the UK Environment Agency and other bodies have established a European Union project known as "remas" (www.remas.info). "[R]emas is a 3-year project designed to examine environmental management systems (EMS) currently in place in business and industry across EU Member States. [R]emas aims to demonstrate that companies and organisations that implement EMS show better environmental performance overall".[27]

The assessment concentrates on industrial sectors which fall under the IPPC Directive, and is being conducted by the Science and Technology Policy Research Unit (SPRU) of the University of Sussex.[28] As of the beginning of 2004, over 50 firms had signed up for this service, and more were being sought.

> Whilst in theory, implementing an EMS should improve a company's environmental performance, there is little data to back this up. Over the next three years, remas will collate data from sites throughout Europe with the aim of documenting the evidence to link the presence of an EMS to environmental performance. In addition, remas will use this information to demonstrate ways of avoiding duplication from the overlap of regulatory process work and that of EMS implementation.[29]

France**

France does provide some financial support to firms of the Member State seeking EMAS registration. This financial support consists primarily of a subsidy given by the environmental agency, Agence de l'Environnement et de la Maitrise de l'Energie (ADEME). France does not provide any fiscal advantages other than a reduction in the general tax on the pollutant activities for the installations of domestic wastes storage. "Instead, there have been various promotional schemes at a local level, which have been supported by various actors. . . . However, one key difference . . . is that financial support

** The author is extremely grateful to Ms. Martine Simon of COFRAC for her efforts in reviewing this section for accuracy and completeness

is usually not specifically directed towards EMAS participation. Other environmental management standards such as ISO 14001 are equally subsidized".[30]

The Competent Body in France is the Ministère de l'Environnement [Direction de la Prévention des Pollutions et des Risques, 20, Avenue de Ségur, F-75302 Paris Cedex 07 SP, Tel: +33 14219 1411, Fax: +33 14219 1467, e-mail: anne.maral@environnement.gouv.fr, http://www.environnement.gouv.fr].

The French government's outlook has traditionally been to view EMAS and environmental regulation in general as distinct, but complimentary, entities. Conformity with the regulation is the minimum required for an organization. According to the point of view of the French government, environmental systems such as EMAS and ISO 14001 are tools allowing the organizations to go further than the strict performances prescribed in the regulation.

According to Steger et al and the Hofstede criteria, the French government is viewed as having a high degree of centralization. French customers do not know very much about EMAS; therefore, firms do not see the real interests and benefits of an EMAS registration, and tend to prefer ISO 14001. Additionally, with little to no financial incentives (subsidizes or otherwise), as well as an avowed lack of regulatory relief, provided by the government, firms are reluctant to step "outside the box" to experience the EMAS model.

As of the date of publication of this text, plans exist to publish a brochure designed to increase awareness of EMAS, as well as a document regarding the approach to set up EMAS in an organization. Moreover, with the recent publication (June 2003) of the French national strategy for sustainable development, the French government affirms its will to develop the systems of environmental management (EMAS and ISO 14001).

The Netherlands***

The Netherlands is part of the "trend" of national governments which do not offer subsidies to EMAS-registered firms. Interestingly, the Dutch decided that the implementation of ISO 14001 in their country should follow the EMAS requirement for the publication of a validated environmental statement.[31] Therefore, firms could not receive a "reprieve" from the environmental statement publication requirement simply by electing to pursue ISO 14001 registration over EMAS, even though the standard technically did not require it.

The "Act on Environmental Annual Reports" has set out a requirement for the 330 'most polluting' Dutch companies to provide an annual report on environmental performance specifically directed toward the public in terms of its language, and must include data on air and water emissions and waste disposal.[32] In addition, the firm must provide a separate annual report for the government, containing the same type of information, but in much more detail.[33] Firms who are registered to EMAS are exempt from these requirements, because of the environmental statement requirement.

*** Members of the competent body for The Netherlands were contacted to review this section prior to publication for accuracy and completeness, but no response was received from the Body.

With respect to regulatory relief, "environmental pro-active enterprises" [read: EMAS participants] are given preferential treatment regarding permitting, monitoring and enforcement.[34] When one considers the permitting of plants, the authorities use "goals" instead of rules to reduce the regulatory burden on the site. However, it is crucial to note that in The Netherlands, "Regulatory relief is not granted for participation in environmental management systems *per se*, but only if companies have a good environmental record".[35] Obviously, though, one way to work strongly toward such a record is by implementing a program such as EMAS. Similarly, as explicitly outlined in a 1989 memo between industry and the authorities, verified EMSs are a valued tool for moving toward decreased regulation and increased private flexibility.

> Until the mid-1980s, Dutch environmental policy focused on laws to control and cure specific pollution problems involving water, air and soil, as well as noise. The poor results led to action based on a more integrated, preventive approach. Instead of bureaucrats laying down the law, the Government experimented with inter-active decision-making involving all the parties talking together at an early stage.[36]

Additionally, The Netherlands makes an important distinction between "formal" and "informal" benefits. Formal benefits allow an EMAS-registered site to receive advantages which are strict: for example, in a law or license. Informal benefits provide an EMAS-registered site with advantages which are *not* formalized; rather, they are more intrinsic or intangible. An example of an informal benefit might be the reduced regulatory reporting efforts a site may have to undergo, because they have reduced or eliminated an environmental issue, such as a hazardous waste stream.

The Netherlands provides the following examples of both formal and informal benefits.[37]

Formal benefits

- Outline license: An outline license is geared toward the emissions of the site as an entity. The outline license gives the maximum "yearload" of the important emissions. It is the responsibility of the company not to exceed these "yearload" limits.[38] Outline licenses give the company significant flexibility if equipment changes need to be made. This type of licensing is only possible for sites which are EMAS-registered and/or EN ISO 14001-certified.[39] In addition, the top 300 polluting sites in the country are legally required to publish a yearly environmental report for the public. Obviously, sites which are EMAS-registered have already fulfilled this requirement by their participation in the program.

Informal benefits

- New licenses may be obtained in a reduced time period, since the organization presumably has a very "transparent" nature of operations, due to EMAS requirements.
- Generally speaking, there should be fewer enforcement inspections, as the regulatory authorities realize that EMAS requires a commitment to continual improvement, and therefore the firm not be problematic.

- An EMAS-registered site tends to receive more leeway from the authorities in the event of incidental breaches of permits, licenses, etc.

The Competent Body in The Netherlands, the Stichting Coördinatie Certificatie Milieuzorgsystemen [Parkstraat 83, Postbox 18505, 2502 EM The Hague, The Netherlands, Tel: +31 70 3623981, Fax: +31 70 3635084, http://www.sccm.nl/index.htm, e-mail: info@sccm.nl] has taken great pains to make local authorities aware of the possibilities available via these means, thereby building confidence in them with Dutch industry. Specifically:[40]

- Numerous publications have been developed regarding the content of management systems and certification/verification process, designed specifically for the authorities;
- Companies are encouraged to invite local authorities to observe audits, in order to make them aware of EMAS and ISO 14001;
- Companies are encouraged to establish and maintain a dialogue with the authorities before the certification process begins, to make the authorities aware of the scope of the application and any potential issues;
- Regulators and enforcement authorities attend workshops to discuss their experiences with ISO 14001 certified and EMAS-registered companies.

At the close of 2003, there was no registration fee applied to firms who wished to pursue EMAS.[41]

Belgium****

Belgium uses one Federal and three Regional bodies to comprise its Competent Body "system", while BELCERT [FPS Economy, SMEs, Self-employed and Energy, Square de Meeûs, 23, B-1000, Brussels, Tel: +32 2 506 51 11, Fax: +32 2 513 29 54, e-mail: secmin.vdb@health.fgov.be, http://mineco.fgov.be] has been chosen for the accreditation scheme.

Belgium employs the "Ecodynamic Enterprise" ("EE") label in the Brussels Region, in order to officially recognize what it considers to be good practices in environmental management. The "EE" label is available to both public and private organizations, rewarding them " . . . for their environmental dynamism and their improvement in environmental fields such as waste management, energy consumption or the rational use of natural sources".[42]

> The Eco-dynamic label is progressive (3 levels) which makes it possible for an organization to develop their EMAS at their own rate. Following the same logic as EMAS or ISO 14001, it encourages the implementation of an environmental management system and the improvement of the environmental performance. To help organisations to implement an environmental management system, free support is given (workshops and individual

**** Members of the competent body for Belgium were contacted to review this section prior to publication for accuracy and completeness, but no response was received from the Body.

> support). Any company, whether private, public or semi-public, administration or association, from any sector of activity . . . can obtain the Eco-dynamic label, on the condition that it has a site in the Brussels-Capital Region.[43]

Further information on this topic can be obtained from http://www.ibgebim.be/francais/contenu/content.asp?ref=722, or http://www.ibgebim.be/nederlands/contenu/content.asp?ref=902 or via e-mail at ecodyn@ibgebim.be.

Germany+

"Germany is widely perceived to be one of the most environmentally progressive states in Europe, with a more stringent regulatory system and a far greater public awareness of environmental issues . . . "[44] "In Germany action is taken against non compliant companies if notice is received through press and interested parties. The CB [Competent Body] relies on the verifier to give notice . . . "[45]

> However, few French or British business managers displayed [in a study conducted by the paper's authors] any real enthusiasm for the methods adopted by Germany in creating this greener economy . . . as external observers, French and British interviewees often felt any associated costs could be borne by German businesses because . . . consumers in Germany were prepared to pay an environmental premium on goods and services.[46]

German responsibility for accreditation of environmental verifiers related to EMAS is carried out by the *Deutsche Akkreditierungs—und Zulassungsgesellschaft für Umweltgutachter* (DAU). The DAU requires applicant verifiers to pass a comprehensive oral examination and to hold a university degree, along with a minimum of 3 years of environmental auditing experience.[47] Due to an extremely challenging oral examination process instituted at the inception of the EMAS program, roughly 45% of the applicants to the DAU to become accredited environmental verifiers fail the examination.[48]

In Germany, the only Member State in which, as of 2004, EMAS participation is higher than that of ISO 14001, the Bundesländer (the Federal states) are primarily responsible for providing financial support for EMAS involvement.[49] [As of 2000, it was estimated that at least 30% of all EMAS firms received some type of financial support, averaging about 38,000 DEM (approximately €19,400 at press time, although the DEM is obviously no longer legal tender). Subsidies for ISO 14001 firms are also available, but in a much more limited supply and value.]

The registration fee at the close of 2003 was €230 for SMEs, and €880 for larger facilities.[50]

According to Steger et al (2002), when Hofstede's framework of "four cultural dimensions" is applied to German industry, it is revealed that industry and government are viewed as existing on equal footing in that society. As a result, "companies welcome and expect responsibility . . . [and, therefore] EMAS is seen as an opportunity rather

+ The author is extremely grateful to Mr. Hermann Huewels for his efforts in reviewing this section for accuracy and completeness.

than a threat".[51] Steger et al postulate that because Germans as a nation are neither individualistic nor collectivistic, the overarching desire in the society is to conform to the group politic. EMAS serves this "conformity" well. Similarly, a higher-than-average per capita income, coupled with a finite set of resources, has led to a strong "green" identity within the country. As of 1999, there were over 8,000 environmental regulations on the European, national and regional level in Germany.[52]

A study conducted between early- and mid-2002 by Rennings et al concluded "The surveys show a positive influence of EMAS on environmental organizational, process and product innovations".[53]

During 1994–1995, the Hessian Ministry of Trade and Commerce commissioned the University of Kassel to evaluate the EMAS program in the country. The manifest goals were to give Hessian companies exposure to the EMAS system and to weed out any implementation problems which might be noted.[54] The Ministry selected 13 firms in different branches of industry to have their internal and external EMAS implementation costs subsidized. Freimann and Schwaderlapp (1996) evaluated the results of this program in order to summarize the data collected and to evaluate the German EMAS program. Their review noted the following:[55]

- All the companies examined had been involved in environmental protection activities prior to the Ministry's program, though most said it was because they were required to do so by the government, not because of public requirements;
- Most of the measures in place prior to the program were dictated by legal patterns;
- The motives for EMAS participation were mostly due to a corporate desire to appear more "green";
- In addition, most firms stated that the funding provided as part of the program made it much more feasible (especially the smaller firms) to participate.

Freimann and Schwaderlapp concluded that "the environmental management systems (EMSs) were implemented with the main aim of adjusting the achieved status of managerial measures to the legal requirements and of documenting them".[56] In addition, the environmental statement appeared to be the most difficult aspect of EMAS for the firms to implement. "The firms are not used to informing the public of internal facts. Accounting principles such as completeness and reliability are not regarded as important".[57] Finally, "... firms were not used to this openness [the conducting of "eco-audits" and the resultant disclosures required under EMAS] because the traditional environmental law has a totally different character. Tightening the law had been most influential to corporate environmental policy for a long time".[58]

As we have seen, the focus of EMAS is more toward directing the environmental performance (improvements) of a site or of an organization, while ISO 14001 concentrates more on the EMS as a system. The strong legislative culture in Germany, which has long required industry to meet stringent environmental standards via regulation, has laid the groundwork for EMAS acceptance. This course has led to a "results orientation" among German firms, and also makes the publication of environmental performance data more acceptable to them.[59]

> Due to the division of tasks and responsibilities between the federal and regional environment ministries and because of the decentralized Competent Body structure (Germany has over 60 Competent Bodies) support schemes vary a lot from one area to another. A multitude of guidelines has been published targeted at different economic sectors and different kind of organisations . . . [60]

The majority of the individual Federal countries within Germany have a specific structure detailing how enforcement authorities will conduct activities relating to EMAS-registered firms. These structures direct that the authorities give benefits, or "privilege", to EMAS-registered organizations with regard to supervision. "In particular, the frequency of the general supervision may be reduced, reports may be replaced by the environmental statement as far as it has equivalent contents, and measuring obligations are reduced or may be fulfilled by own staff".[61] In addition, some of the federal countries are considering a reduced fee structure for EMAS-registered organizations. Finally, The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety is preparing a federal regulation which will grant privileges for EMAS-registered organisations relative to the supervision of them by enforcement authorities.

With respect to the promotion of EMAS within Germany, in 2001 the German government launched an EMAS public relations campaign, which consists of a website and a series of advertisements published in national newspapers and magazines.

> This campaign—a joint initiative financed by the federal environment ministry, regional environmental agencies, industry, trade unions and environmental organisations—not only presents the scheme and its main objectives but also gives registered organisations the opportunity to personalise the advertising by inserting their logo and text specific to their activity.[62]

Spain[++]

Spain employs the Ministry of Public Works, Transportation and Environment (Ministeriode Obras Publicas Transportes y Medio Ambiente; MOPTMA) as its main and subsidiary Competent Body. Most of the regions (communidades autonomas) that comprise the Administrative Organization of the State have also designated their own competent bodies. Nevertheless, for the accreditation scheme, the only designated Body for the whole country is the Entidad Nacional de Acreditación [ENAC; www.enac.es, Serrano, 240, 7° 28610 Madrid, Tel: 91 457 32 89, Fax: 91 45862 80, e-mail: enac@enac.es]. At the close of 2003, a registration fee was only assessed in one region of the country.[63]

In contrast to Germany, Steger et al has put forth the idea that the cultural conditions in Spain, when viewed through the glass of Hofstede's model, make the acceptance of EMAS less attractive. One company interviewed during Steger's research presented almost circular logic as to why there were not more EMAS registered firms in the country:

[++] The author is extremely grateful to Mr. Edelio Gago for his efforts in reviewing this section for accuracy and completeness.

this was due to firm's competitors not being registered. Once others were accredited, they maintained, these firms would follow suit and pursue registration. Circular logic indeed![64] Steger et al go on to assert that environmental preservation is more important than economic growth in the country, and that stewardship of the environment can be accomplished in ways other than through EMAS registration. Furthermore, since the environment "trumps" growth, there is little incentive for companies to realize potential sales increases through EMAS implementation, also given the fact that most Spanish customers do not seem to prefer validated companies over ones without registration.[65]

> Most of the regional governments with Competent Bodies have set up financial grant schemes aimed at promoting the implementation of an EMS, especially for SMEs. These programs often assign a bigger percentage of financial support for EMAS than for EN ISO 14001. Initiatives to include green requirements in public procurement have started in some regions and many of them also give regulative advantages to EMAS registered companies. In Catalonia for example, EMAS registered sites are exempt to pass controls requested by Law 3/1998 on Comprehensive Intervention of the Environmental Administration (CIEA), because the verification of an EMAS EMS is recognized as a valid control. Various technical guides on the implementation of EMAS have also been published.[66]

THE NORDIC COUNTRIES: FINLAND, NORWAY AND SWEDEN

While the Nordic countries will shortly be examined individually, it is instructive to begin the examination with some general observations relating to commonalities of environmental policy in the region.

The Nordic countries have focused on environmental protection issues for over 30 years, launching this focus with the Nordic Environmental Protection Convention in Stockholm on 19 February 1974. In essence, the convention set out guidelines for "any person who is affected or may be affected by a nuisance caused by environmentally harmful activities in another Contracting State".[67] This person "shall have the right to bring before the appropriate Court or Administrative Authority of that State the question of the permissibility of such activities including the question of measures to prevent damage . . . "[68] While the document does outline the ability of a "person" to bring before the appropriate authority nuisances caused by environmental matters, it stops short of laying out specific means of redress. The close of Article 3 discusses "compensation for damage caused by environmentally harmful activities", but this compensation is simply to recompense, not to address punitive damages or the like. Finally, the document establishes a "supervisory authority" in each state, which is responsible for managing such cases, and details the means by which communications and the like relating to the case will be made available to the public.

The Nordic communities have also formed the Nordic Council, comprised of representatives of the various state governments, and have adopted several environmental

protection plans, such as the Nordic Action Plan Against Air Pollution, the Nordic Action Plan on the Pollution of the Seas and the Nordic Action Plan on Cleaner Technology, Waste and Recycling.[69]

Sweden[+++]

Within Sweden, environmental issues are regarded very highly by the general public. In the late 1980s, the environment was viewed as the single most important political and social issue, with over 60% of the citizens feeling this way.[70] Although that figure has subsequently declined as issues such as health care and unemployment have become more prominent, Swedes in general have always had a strong affinity for environmental protection. In fact, polls have shown that environmental organizations have the strongest credibility, in the eyes of the Swedish population, ahead of university scientists, political authorities and journalists, among others.[71]

In 1967, the Swedish Environmental Protection agency was created, and made responsible for the central supervision and protection of land, water and air. At a secondary level, county administration and local environmental and health protection boards serve a similar, but more localized, role.[72] "Sweden has a long tradition of developing policies and making decisions by some form of consensus, that is to involve the principal interested parties in discussions and negotiations until a solution, acceptable to most of the actors, has been reached".[73]

Sweden utilizes the Ministry of the Environment [SE-103 33 Stockholm, Sweden, Tel: +46 8 405 10 00, Fax: +46 8 24 16 29, e-mail: registrator@environment.ministry.se, http://miljo.regeringen.se] as the Competent Body and SWEDAC [Box 2231, 103 15 Stockholm, Tel: 08-406 83 00, Fax: 08-791 89 29, e-mail: registrator@swedac.se, http://www.swedac.se/sdd/System.nsf/(GUIview)/index.html] for the accreditation scheme. The registration fee at the close of 2003 was €11,034 for firms, and €5,517 for authorities.[74]

All firms sampled in Sweden by Erskine and Collins (1996) had an environmental policy program already in place. Environmental audits were also shown to be commonly undertaken in these firms. A programme entitled "steps to EMAS" specifically for SMEs has been developed, and EMAS registered organizations enjoy a decreased environmental reporting requirements in comparison to companies not registered to the Scheme.

EMAS information activities are regarded as long-term, and include a set of new brochures, advertisements in newspapers, information about the use of the logo and reinforced cooperation with existing EMAS organizations and with current EN ISO 14001 certified companies, since they are seen as the main target group for future EMAS registrations. Also, an extension of the existing website at www.environmarket.com (in English) and www.miljostyrning.se (in Swedish) is foreseen, using the interactive web-services accessible to EMAS registered organizations. This will enable the

[+++] Members of the competent body for Sweden were contacted to review this section prior to publication for accuracy and completeness, but no response was received from the Body.

organizations to disseminate information about their work in "Environment Management Data Sheets" and "Environmental Management Declarations".[75]

Stockholm, which was awarded the European Sustainable Cities Award in 1997, has operated an EMS based on both EMAS and ISO 14001 since that year. As of 2001, all administrations and city-owned companies have an environmental policy in place, and almost 60% of those firms have conducted an environmental review of their area. Again, 60% have established an environmental program connected to the review.[76]

Finland++++

In Finland, the Finnish Environment Institute (SYKE) [Postal address: P.O. Box 140, FIN-00251 Helsinki, Finland, Tel: +358 9 403 000, Fax: +358 9 4030 0190, e-mail: kirjaamo.syke@ymparisto.fi, www.environment.fi/syke] functions as the EMAS Competent Body for registrations. EMAS verifiers in Finland are accredited by the Finnish Accreditation Services (FINAS), [P.O. Box 239, FIN-00181, Helsinki, Tel: 6167 61, Fax: 6167 467, e-mail: timo.hirvi@mikes.fi, www.finas.fi].

Additionally, Finland maintains an EMAS website at www.environment.fi/emas. The registration fee at the close of 2003 was €500 to €1,700, depending upon the number of employees at the site.[77]

Upon receiving an application for EMAS registration, SYKE will ask the Regional Environment Center and other environmental authorities whether the organization fully complies with the environment legislation. If there are no obstacles or objections, the firm will be registered to the EMAS register. As of the close of 2003, Finland had 39 organizations operating in 47 sites registered.[78]

The registration fees for firms in Finland, as in several other countries, operate on a tiered system based upon the number of employees. These fees are listed in Tables 1 and 2.[79]

Table 1. Registration fees for Finnish Organizations

	Number of employees		
	≥50	10–49	Max. 9
Registration fee (Euros) for organizations operating on 1 site	1,800	1,100	600
	≥100	20–99	Max. 19
Registration fee (Euros) for organizations operating on 2–4 sites	2,200	1,700	1,000
	≥250	50–249	Max. 49
Registration fee (Euros) for organizations operating on minimum 5 sites	2,500	2,000	1,500

++++ The author is extremely grateful to Mr. Varpu Rantanen and Ms. Pirke Suoheimo, Senior Advisor, M.Sc., Finnish Environment Institute SYKE, for their efforts in reviewing this section for accuracy and completeness.

Table 2. Fees for EMAS registration in Finland

Annual fee for the first site	€ 250
Annual fee for the each remaining sites	€ 125

Promotion of the EMAS program in Finland has been substantial. In addition to maintaining an EMAS website, a 16 page brochure and an 8 page EMAS newsletter is distributed to the various stakeholders annually. While the brochure focuses on groups such as ISO 14001 certified firms, verifiers and consultants, the newsletter is geared toward current issues with the Scheme, and also provides examples of both public and private sector registrations.

Workshops are also a main means of communication about the Scheme. Ministry of the Environment representatives have met with private industry to facilitate understanding. In addition, advertising campaigns are being considered.

Furthermore, Finland offers two fairly unique means of rewarding firms which excel in the EMAS arena. Beginning in 1996, the Finnish Business and Society created an award which recognizes the best environmental reports, including the best EMAS statement, and the best corporate social responsibility actions of the year.[80] The 2003 contest evaluated 156 firms. A second unusual means of rewards involves an up to 35% reduction in the overall permit fee if the permit authority needs less than a specified amount of work to process the permit. For example, if the standard permit processing time is from 1 to 2 months, and (perhaps because the firm is EMAS registered, and therefore more "appealing" the authorities) the actual permit takes less than 1 month, the permit fee should be reduced by 35%. A grand incentive indeed![81]

Regarding SMEs in Finland: although this will be discussed in more detail later in the text, projects have been established to "strengthen employment, to improve employees' skills, to expand regional industrial bases, and to improve the competitiveness of SMEs . . . improving environmental work has been an important way to achieve these main objectives".[82] Finland has emphasized strengthening relations between the SMEs and the environmental authorities, and this has manifested itself in the provision of access to environmental information, guidelines for implementation of EMAS, and so forth.

Norway•

In Norway, EMAS registration comes under the purview of the Register of Business Enterprises at the Brønnøysund Register Centre. The Centre administers approval and registration of firms which apply for EMAS accreditation. The Ministry of Environment has central responsibility for EMAS in Norway [P.O. Box 8013, Department 0030,

• The author is extremely grateful to Mr. Arve Thendrup for his efforts in reviewing this section for accuracy and completeness.

Oslo, Tel: +47 22 24 90 90, Fax: +47 22 24 95 60, e-mail: postmottak@md.dep.no, http://odin.dep.no/md], and the Norwegian Pollution Control Authority [P.O. Box 8100 Dep, NO-0032 Oslo, Tel: +47 22 57 34 00, Fax: +47 22 67 67 06, e-mail: postmottak@sft.no, http://www.sft.no] is the Competent Body. The registration fee at the close of 2003 was € 602 to € 36,162 annually.[83]

The Norwegian government has been encouraging responsible environmental stewardship for several decades, primarily through the use of environmental taxes. The first specifically "environmental tax" was assessed on sulfur in mineral oil in 1971.[84] The late 1980s and early 1990s brought a several fold increase in the tax base, by encompassing mineral fertilizers, pesticides, lubricant oils, carbon dioxide and so forth.[85] In the country, almost 5% (1.8% of GDP) of all taxes received are derived from environmental and energy taxes.[86] The Green Tax Commission, formally appointed in late 1994, was tasked to determine how to move the tax system toward one which encouraged the use of environmentally sustainable policies and products, thereby increasing the use of renewable resources and the like. From such a beginning, it was natural that Norway would embrace the EMAS program.

Between 1993 and 1996, the Norwegian Research Board conducted a project responsible for testing the eco-auditing concept as part of the municipal planning process.[87] In addition, the Agricultural University of Norway, located in Ås, participated in the "Green State Bodies" program between November 1998 and December 2000. An analysis of the material and energy flows in the university lead to the development of an Action Plan with 20 individual programs.

A pilot project entitled "Green Government" was implemented in 10 governmental institutions between 1998 and 2001. Four main areas of focus have been defined as a result: procurement, waste management, energy and transport.[88] According to the project, two main goals have been identified:

1. All institutions of the Norwegian government will, by the end of 2005, have introduced environmental management systems [but not necessarily EMAS] "as an integrated part of the organization's management system".
2. The various Ministries of Norway will serve as champions of the program, and will begin by implementing their own such programs in 2002.

Furthermore, "government institutions shall introduce a simplified system for environmental management. This system is based on the principles formulated in ISO-14001 and EMAS and institutions shall:"[89]

1. Identify the organization's impacts on the environment. This shall include, as a minimum, procurement, waste, transport and energy;
2. Define an environmental policy and environmental objectives;
3. Propose activities to reduce the environmental load and make an action plan for implementing these;
4. Integrate environmental considerations into routines and processes;
5. Integrate environmental management into the organization's existing management systems;

6. Carry out an annual internal audit of the environmental activities and define objectives for improvement;
7. Report on the progress of environmental activities to their respective ministry.

Greece••

Within Greece, the Ministry for the Environment [Hellenic Ministry of Environment, Physical Planning and Public Works; 17 Amaliavos Street, 11523 Athens, Greece, Tel: 01 6401590, Fax: 01 6401591, e-mail: minister@minenv.gr, www.minenv.gr] has been designated as both the Competent Body and the accreditation system for EMAS.

Historically, environmental policy in Greece has been a command-and-control one. "Indeed, it can be argued that the overriding characteristic of environmental policy in Greece is its normative, legalistic and mandatory profile. Nevertheless, despite formal rigidity, everyday administrative and societal practices suggest greater flexibility, even widespread discretion in the policy making system".[90] Article 24 of the Greek Constitution of 1975 was the first government document to make environmental protection a duty of the state. However, as recently as the mid-1980s, there existed no specific legal or institutional means to implement the duty.[91] The 1980s saw the creation of Law 1650/1986, the first broad legislation relating to the environment, chiefly as a result of the Single European Act.[92]

Environmental protection in Greece is incorporated as a public sector activity at all levels, with the Ministry for the Environment, Spatial Planning and Public Works (YPEHODE) serving as the main body for implementation. However, almost all other Ministries within the country, such as those responsible for industry, energy, tourism and regional policy, have a role in forming and implementing environmental policy. This, coupled with a lack of coordination among the entities, has led to the characterization of the YPEHODE as weak.[93]

EMAS was essentially the first environmental auditing program in Greece. During the initial few years of the EMAS program, Greek industry was reluctant to fully embrace the system. According to Georgia Giannakourou of Panteion University of Social and Political Sciences, Greek environmental policy had been unable to demonstrate that it could influence activities and change societal behavior.[94] Therefore, in Giannakourou's view, EMAS was behind from the start, because Greek society did not substantial faith in government being able to effectively implement or enforce the Scheme.

The National Accreditation Council (ESYD) was created in 1994 under Law 2231/1994 to accredit and supervise Greek verifiers.

In May 1998, a review of the first 30 companies' efforts to implement EMAS was conducted. Many of the firms involved cited a lack of technical and entrepreneurial competence, a lack of financial resources and a lack of training as significant hurdles to the program.[95] The review also indicated that the larger the firm was and the more

•• Members of the competent body for Greece were contacted to review this section prior to publication for accuracy and completeness, but no response was received from the Body.

heavily it exported product, the more likely EMAS was to be accepted. As of the close of 2003, there were only 9 firms registered to EMAS in Greece, only one of which was a member of the original pilot group of 30 sites.

Luxembourg•••

The EMAS program in Luxembourg is administered by the Ministère de l'Environnement [Ministère de l'Environnement, 18, Montée de la Pétrusse, L-2327 Luxembourg, Tel: +352 478 68 24, Fax: +352 40 04 10, http://www.environnement.public.lu]. Extensive research has failed to discover any additional information with regard to EMAS in the country.

Austria••••

"The overall record of Austria's environmental policies is ambiguous. For twenty years [as of 1994], the environmental policy had scarcely progressed beyond fluctuating promises and reforms".[96] Beginning in 1972, as a result of the UN Conference on Human Environment, the Federal Ministry of Health and Environmental Protection was established. Ten years later, "direct and intrusive measures affecting privacy and property rights were regarded as necessary for the protection of the environment".[97] Items such as environmental taxes were considered, and the Austrian Federal Environmental Agency (*Umweltbundesamt*) was created.

Austria utilizes the Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit, or the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, [Alexanderplatz 6, D-10178 Berlin, Tel: +49 1888 3050, Fax: +49 1888 305 4375, e-mail: service@bmu.bund.de, http://www.bmu.de] as both the Competent Body and the accreditation system for EMAS. The registration fee at the close of 2003 was € 50,871.[98]

In 1995, the Austrian Ministry of Environment developed, together with Österreichische Kommunalkredit AG, a promotion programme to introduce EMAS to SMEs. Currently, over 80% of EMAS registered sites in Austria have less than 250 employees.[99] The participating enterprises were designed to be multipliers for the EMAS-system and to introduce a "snowball effect", thereby encouraging registrations. The highest amount of support provided by the Ministry was around € 21,800 per site.

The majority of Austrian EMAS registered sites were involved in this program, and the promotion program gradually passed over in a permanent EMAS promotion program called "Recognition of an EMAS environmental management system as a preliminary work of funding measures", where the fundable measure directly depend from the results of the EMAS environmental program.

••• Members of the competent body for Luxembourg were contacted to review this section prior to publication for accuracy and completeness, but no response was received from the Body.

•••• Members of the competent body for Austria were contacted to review this section prior to publication for accuracy and completeness, but no response was received from the Body.

> A key elements [sic] of Austrian EMAS promotion in the future is the creation of added value for EMAS organisations in terms of regulatory control. Therefore the new Federal Act in Austria according to the EU Community Eco-Management and Audit Scheme will also regulate (in addition to the accreditation and supervision of environmental verifiers and the maintenance of a list of organisations) possibilities for EMAS registered organisations in terms of regulatory control. For example it will be only necessary to notify the intended improvement of the installation by the authority ("Anzeigeverfahren für Anlagenänderungen") under different conditions including a valid EMAS registration of an organization and a binding statement of an environmental verifier. Other main points of the new national law are for example the consolidation of license notification ("Konsolidierter Genehmigungsbescheid") and cancelling [sic] some specific supervisions and registration duty's ("Wegfall von Kontroll- und Meldepflichten").[100]

In connection with the EMAS registration of the Federal Ministry of Agriculture, Forestry, Environment and Water Management—site "Stubenbastei 5"—it is also considered to include EMAS as one aspect of public procurement policies. The environmental team of this site has developed a questionnaire form regarding environmental issues. This form also includes questions regarding the environmental management systems according to EMAS or EN ISO 14001, the environmental statement or the environmental policy of tenderers.[101]

For information purposes, an internet platform for environmental management was recently set up. At www.umweltmanagement.at enquirers can access databases of EMAS, EN ISO 14001 and ÖKOPROFIT companies and receive information on projects, institutes and consultants in the field of environmental management".[102]

"Short term agreements on the refurbishment of non compliance is accepted in [Austria] (if the breach occurred before the EMAS implementation".[103]

Denmark°

Within Denmark, the Danish Environmental Protection Agency (EPA) [29 Strandgade, DK-1401 København K, Tel: +45 32 66 01 00, Fax: +45 32 66 04 79, e-mail: mst@mst.dk, http://www.mst.dk] functions as the Competent Body, while DANAK [The Danish Accreditation and Metrology Fund, Dahlerups Pakhus, Langelinie All 17, DK-2100 Copenhagen Ø, Tel: +45 77 33 95 00, Fax: +45 77 33 95 01, e-mail: danak@danak.dk, http://www.danak.org] serves as the accreditation body. The registration fee at the close of 2003 was €26,912 for 1–3 sites, €53,842 for more than 3 sites, and €1,346 to €26,921 annually.[104]

> Since 1995 some 1000 polluting companies have to publish yearly an obligatory environmental report (a green account). The EMAS Environmental Statement is recognized as an equivalent and can therefore be submitted instead in order to avoid duplication of work. The supervision fee, which all industries must pay to the local or regional environmental authority, is reduced by 50 percent for EMAS organisations. The Environmental

° Members of the competent body for Denmark were contacted to review this section prior to publication for accuracy and completeness, but no response was received from the Body.

Competence Scheme provides financial support to SMEs implementing an environmental management system including EMAS.[105]

Italy[○○]

Relative to many of the other Member States within the European Union, Italy is extremely advanced in its actions with respect to the EMAS program.

Some provisions on EMAS promotion are included into national legislation with the involvement of the Central Government (Ministry of Environment, Industry and Parliament), whereas specific support actions are mainly performed at local level (Regional Legislation). Local Authorities in agreement with Industrial Associations, Chamber of Commerce and other local actors have also carried out different pilot projects for new EMAS applications. The EMAS Competent Body, the Comitato Ecolabel Ecoaudit [Via V. Brancati, 65, 00144, Rome, Italy, Tel: +39 06 5007 2435, Fax: +39 5007 2439, e-mail: ecocom@apat.it, http://www.minambiente.it/Sito/home.asp], is involved in the EMAS registration process and in the promotion policies with the role of guide and co-ordination. The Comitato is also responsible for the accreditation of EMAS verifiers.

The National Agency for the Protection of the Environment and for Technical Services (APAT) [Via Vitaliano Brancati, 48, 00144 Rome, Tel: 0039650071, Fax: 0039650072916, urp@apat.it, www.apat.it], has been assigned the role of technical support organization to the Comitato by decree of the Minister of Environment (no. 413/95) [Via Vitaliano Brancati, 48, 00144, Rome, Italy, Tel: +390 650 072 066, Fax: +390 650 072 078, e-mail: emas@apat.it; www.sinanet.apat.it/certificazioni], for both the function of EMAS registrations and for the accreditation of environmental verifiers.

Under various Italian laws, EMAS-registered firms are given certain advantageous treatment as a both a reward for their certification and as an incentive for other firms to earn registration as well. Some examples of these, provided by the European Commission, are as follows:[106]

- Law 152/99—Conservation of water resources: EMAS registered and UNI EN ISO 14001 certified companies are preferably considered in the assignment of permits for use of water for industrial purposes where hydro sources have limited capacity.
- Decree 344/99—Seveso II Directive implementation: In the notification document, the EMAS registration can be annexed and considered by the competent authority.
- Decree 372/99—IPPC Directive implementation: The normal IPPC permit expires after 5 years. For EMAS registered companies the duration is of 8 years.
- Law 93/2001—Provisions in the Environmental Sector: For the renewal of authorizations in the fields of IPPC (Decree 372/99), waste management (Decree

[○○] The author is extremely grateful to Mr. Paolo Molinas, Brunella Panciroli and Drs. Lucchesi for their efforts in reviewing this section for accuracy and completeness.

22/97), water pollution (Decree 152/99), and air pollution prevention (Decree 203/98), EMAS registered companies can substitute the request of renewal of authorization with a self-declaration which includes the EMAS certificate.

In addition to the above, there exist several specific financial incentives for firms to adopt the EMAS program, again as provided by the Commission:[107]

- Law 488/92—Incentives for enterprises in the economically less developed areas: Companies seeking to reach EMAS registration or ISO 14001 certification get additional scores for the final classification and evaluation in order to be financed.
- Laws 341/95, 266/97, 449/97, 133/99—Containing incentives for EMAS: For SMEs applicants, costs for technical assistance in the implementation of EMAS can be considered as eligible costs and admitted to be financed. Fiscal facilitation for EMAS registered is also considered.

From a lending perspective, several Italian financial firms and other institutions have begun to formally recognize EMAS in terms of providing discounted rates and so forth to EMAS registered firms:[108]

- UniCredito: The Ministry of Environment and UniCredito have signed an agreement for providing financial loans at low rate to SMEs, supporting their costs of EMAS implementation.
- MPS BancaVerde (former Istituto Nazionale di Credito Agrario—INCA): The Ministry of Environment and MPS BancaVerde have signed an agreement to provide financial loans at low rate to agricultural and agro-food SMEs supporting their costs of EMAS implementation.
- The Ministries of Environment and Industry, Local authorities (Region, Province, Municipality, and Regional Environmental Agency), National Competent Body and APAT have signed an agreement concerning a project to achieve the EMAS registration of industrial areas and industrial districts related to several sectors (ceramics, textiles, etc.) where SMEs mainly operate their businesses in limited geographical regions.

Around 30 different initiatives concerning EMAS and EN ISO 14001 promotion at local level have been identified in a study carried out by the Italian Competent Body. These initiatives concern the introduction of regulatory benefits, financial assistance, pilot projects, and EMAS publications. Almost all of the Italian regions are involved. The main sectors of intervention are industrial districts and areas (e.g. Ceramic Industrial District of Sassuolo—Modena, Chemical Industrial Area of Ravenna), tourist district (e.g. Bibbione Area—Venice) and local authorities (e.g. Municipality of Camerino, Cavriago Municipality, Province of Viterbo and Potenza). The initiatives are carried out by local actors with the assistance, in some case, of national bodies.[109]

Portugal[○○○]

The Portuguese EMAS competent body Instituto Português de Ecologia (INPECO) [Apt. 89 8550, Monchique, Portugal, Tel: +351 282 95189, Fax: +351 282 913816, Mobile: +351 931 813891, e-mail: inpeco@mail.telepac.pt, www.inpeco.pt] considers interested parties concerning registration, refuses registration, deletes or suspends organizations from registration if they do not comply with legal and other requirements. The Competent Body is responsible for the registration of EMAS organizations and controls the entry and maintenance of organizations on the register.[110] As of the close of 2003, Portugal had three EMAS-accredited verifiers.

Decree Number 142/2002 of 20 May 2002 initiated the development and application of EMAS in the country. In addition, "[a] new programme has been created to provide companies with financial support and which will give specific advantages to EMAS registered organisations".[111]

As with Finland, among others, the Portuguese competent body consults with other more localized environmental organizations, such as Inspection for the Environment, Waste Institute, Air Quality Department, Local Authority for the Environment and Local Authority for Industry in the specific area in which the applicant firm is located.[112] Generally speaking, organizations registered to EMAS will receive fewer inspections, a form of regulatory relief, under an agreement between the Competent Body and the General Inspection for the Environment. "As there is a better knowledge of their environmental performance some of the environmental inspections will not be necessary".[113]

Again similarly to Finland, the members of Institute for the Environment often participate in meetings with industries in order to communicate environmental and EMAS information. Plans are in place to promote EMAS events throughout the country in 2004, but to date budget constraints have delayed such implementation. The registration fee at the close of 2003 was € 74,487 for SMEs, and € 223,461 for large facilities.[114]

Portuguese law no 687/2000, issued on 31 August 2000, introduced the Economy Operational Program (EOP). The goal of the EOP was to provide a series of incentives which would effectively modernize SME's performance. "The law establishes that the organizations have to comply with all the legal requirements for their activity . . . so, the organisations interested in implementing an environmental management system, will have financial support for the investment to bring up to date their performance".[115]

Ireland[○○○○]

Since 1978, when the Irish Ministry of the Environment was given responsibility for environmental protection, Ireland has had in place an "Environment Action Programme"

[○○○] The author is extremely grateful to Maria Gorete Sampaio, Portuguese EMAS Competent Body, Institute for the Environment, for her efforts in reviewing this section for accuracy and completeness.
[○○○○] The author is extremely grateful to Mr. Brid Burke for his efforts in reviewing this section for accuracy and completeness.

to formulate environmental targets and policy objectives.[116] At the close of 1994, a commitment to adopt both the precautionary and polluter pays principles was published at the Ministerial level, and 1997 saw the development of a "Sustainable Development Strategy" as the overarching force for the country environmentally.

Ireland adopted the EMAS regulations, designating the Irish National Accreditation Board (INAB) [Wilton Park House, Wilton Place, Dublin 2, Tel: 01 607 3003, Fax: 01 607 3109, e-mail: nab@nab.ie, http://www.nab.ie] as the Competent Body for the country. Uptake of the regulation in Ireland has increased recently; however, a relatively small number of sites are registered (nine as of February 2004), in comparison with the number of sites registered to ISO 14001. INAB is also the accreditation body for EMAS verifiers, and Ireland expects to have at least one verifier accredited in 2004. This may also lead to an increased interest in the EMAS regulation, as this certification body markets its services within Ireland. The registration fee at the beginning of 2004 was € 1,250, with a re-registration fee of € 640.

Enterprise Ireland has also established a funding scheme for SMEs in Ireland. This funding is available to those companies wishing to implement an international/EU standard. Funding is provided to these companies, mostly for third party consultancy services, to assist in the development of the management systems required, and funding is granted to the company upon successful certification to ISO 14001 and/or EMAS.

The Environmental Protection Agency (EPA) in Ireland supports the EMAS regulation, and also is a participating member of the UK REMAS study. It is envisaged that a successful outcome of this study will lead to greater cooperation between environmental legislators and EMAS verifiers, and by inference increase the uptake of the standard in all countries.

"ACCESSION COUNTRIES"

The process of enlargement of the European Union to the candidate countries is now complete, and the EU-25 is in place. However, a recent inquiry into the progress of the new Member States toward fulfilling the EU's environment targets showed that progress is being made, but that much still needs to be done. Because of these issues, as well as their relatively late, but also relatively recent, accession into the EU—and consequently potentially to its EMAS program—the 10 new countries will be examined separately from the "original" EU Member States.

A survey conducted between February 1999 and July 2000 concluded that "[a]wareness and knowledge of EMAS appeared to be generally low outside of the CEE [Central and Eastern European] countries furthest along in their negotiations with the EU for accession (Czech Republic, Estonia, Hungary, Poland and Slovenia".[117]

According to the European Environment Agency, as of mid-2003:

> The total investment needed to meet the EU environmental directives is estimated to be roughly EUR 120 billion, or 32% of the current GDP of the 10 central and eastern

> European accession countries . . . When spread over 20 years such costs will require annual investment of around 1.5% of the current GDP. Additionally, operating costs may require another 2.5% of GDP annually.[118]

As an illustration, with respect to the foregoing, after the collapse of Communism in Eastern Europe in 1989, "economists estimated that environmental degradation [was] costing Poland 10 to 20 percent of its gross national product (GNP) every year and Czechoslovakia [now the Czech Republic and Slovakia] 5 to 7 percent".[119] As such, these States are operating from a significantly lower position than perhaps others accession countries are, with respect to coming up to the EU standards on environmental protection and management.

> The environment sector is one of the most challenging chapters in this process and one which will impact upon all, citizens, companies, local and regional authorities, NGOs, etc. The governments of countries preparing for accession are required to set out environmental policies that will integrate EU policies and to develop institutional structures to manage compliance with EU environmental requirements. The EU Eco-Management and Audit Scheme is part of this and will be directly applicable upon accession. The development of sound institutional structures, implementation mechanisms and verification procedures is therefore a prerequisite for these countries.[120]

The 10 countries which joined the EU on 01 May 2004, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, The Slovak Republic and Slovenia, receive environmental assistance mainly through the Phare Programme, where environmental approximation and implementation are supported through each country's National Programme (NPAA). "In addition, the EU Technical Assistance Information Exchange Programme (TAIEX) has organized several events geared towards the implementation of EMAS and DG Environment itself is also providing assistance through the Life Programme and by co-financing individual projects".[121]

Since 2000, many of the Accession Countries had attended the meetings of Competent Bodies, and Article 14, ensuring that the various countries are aware of upcoming developments, has been implemented and communicated. However, the state of preparation varied significantly from one state to another, even with this assistance.[122] In this regard, a November 2003 article in the Swedish newspaper *Dagens Nyheter* reviewed the progress to date by the accession countries:[123]

> One list [of two informal lists within the EU Commission Head of Unit, Enlargement and Neighbouring Countries] shows how far the countries have progressed through 26 steps, defined as measures demanded by the EU and carried through, in the area of environmental improvement. Slovenia tops the list with 20 steps, followed by Latvia and Slovakia, scoring 16. At the bottom of the list is Malta with 10 steps, followed by Poland (11) and Cyprus (12). The other list shows how much EU legislation the countries have incorporated in national legislation. At the bottom of this list is Estonia and, surprisingly, Slovenia. Slovakia emerges as the winner, while Poland and Malta are to be found somewhere midway.[124]
>
> According to [Hans-Roland Lindgren, director of the Swedish Environmental Protection Agency] Poland is among the countries having the greatest problems on

environmental issues, despite the country's progress in the area of legislation, while Slovenia is a country that has really endeavored to comply with the environmental targets and deserving of the top rating on the first list.[125]

Cyprus*

In Cyprus, the Competent Body is the Ministry of Agriculture, Natural Resources and Environment [CY-1411, Nicosia, Cyprus, Tel: +357 22 303859, Fax: +357 2 781156, e-mail: xenia@logosnet.cy.net, rocperiv@cytanet.com.cy, http://www.managenergy.net/actors/A2297.htm]. The Accreditation Body is the Cyprus Organization of Standards and Control of Quality [A. Araouzos St., 1421 Lefkosia (Nicosia), Tel: +357 22867100, Fax: +357 22375120, e-mail: mci-cys@cytanet.com.cy, http://www2.cytanet.com.cy/cys/].

Chiefly due to its status as a relatively new member of the EU, little information is available with respect to the status of EMAS in the country. The Competent Body should be contacted for further information.

Czech Republic**

The Czech Republic, which has been extremely proactive in adopting the provisions of the Scheme, instituted a National program for implementing EMAS via Resolution Number 466 on 01 July 1998 ("466/1998"). 446/1998 set out the following for the Republic:[126]

- Issued detailed rules setting out the responsibilities for applying for EMAS program registration;
- Setting up an EMAS Council, responsible for administering all aspects of the program. The EMAS Council includes: Ministries of Environment, Industry & Trade, Local Development, Agriculture, Health, Transport & Communications and Finance; representatives of industry, of the financial sector, of NGOs and of companies presently implementing an EMS, among others;
- Establishing an accreditation body ("competent authority") for the EMAS program, which was responsible for approving EMAS verifiers, among other aspects The responsible agency for registering Czech organizations to EMAS is the EMAS Agency at the Czech Environmental Institute [Kodaňská 10, 100 10 Praha 10, Tel: +420 271 740867, e-mail: sekretariat@ceu.cz, http://www.ceu.cz/].
- The organization responsible for the registration of verifiers is the Czech Accreditation Institute [Opletalova 41, 110 00, Praha 1—Nové Mésto, Tel: +420 221 004 501, e-mail: mail@cai.cz, http://www.cia.cz];

* Members of the competent body for Cyprus were contacted to review this section prior to publication for accuracy and completeness, but no response was received from the Body.

** The author is extremely grateful to Dr. Alena Labodova, Senior Lecturer, The Institute of Environmental Engineering, Faculty of Mining and Geology, Technical University Ostrava, for her efforts in reviewing this section for accuracy and completeness.

- Establishing an "EMAS Agency", which provides guidance and resources, such as technical resource consultation, related to implementation of the EMAS program.

Within the Czech Republic, development of the EMS is secured on a civil law basis. That is, the State is responsible for creating and implementing the enabling legislation which allows the EMAS program to function at the national level.[127]

> Emphasis is placed on the construction of the EMS according to the EMAS partly in order to increase the competitiveness of the organisations within the individual internal markets (in Germany and Austria, where two thirds of the Czech Republic's exported goods to the EU were sent in 2000) . . . and partly also because the implementation of the EMS according to the EMAS provides a greater degree of information and the public is therefore able to be active in the protection of the environment in those places where the organisations are active.[128]

The Czech Republic supports organizational participation in the EMAS program, especially related to SMEs, by streamlining the access to information and public funds, and by supporting and providing technical implementation assistance, which may include free consultancies at certain stages of the program's development. Interestingly, the funding for the EMAS program in the Czech Republic comes from the budgets of the Ministries involved with the EMAS Council, *and from no other areas*. This aspect dovetails with the European Commission Project Number ENV.1/SER/2000/0017, the "Programme for the Promotion of EMAS in the Czech Republic", or CHEMAS. Organizational EMAS implementation will come from the funds of the companies involved, as with the majority of all other EMAS registrations globally, except as noted below.

Other funding avenues were created in 1999 (Resolution 366, 21 April, which provided for investment incentives for using environmentally friendly systems), and in 2000 (Directive 108, 13 April, by the Ministry of Trade, which announced the intention of acquire investment incentives).

The Republic has created two specific avenues to support SMES in the registration effort. The State Environmental Fund (SEF), in concert with the foregoing, supports EMAS implementation in SMEs, the health care and the services sector. "The support is designated as a contribution to the costs associated with the implementation of the EMS, including education up to the phase of the verification of the environmental statement. The support may reach up to 50% of the costs . . . "[129] In addition, the MARKET Programme, administered by the Ministry of Trade and Industry, is designed to help SMEs (less than 250 employees) by granting up to 50% of the cost of specialty consultant services for EMAS.

Estonia***

The Estonian Ministry of Environment [Environmental Management and Technology Department, Rävala pst 8, 10143 Tallinn, Tel: 6273 050, 050 666 10, Fax: 6604 793,

*** Members of the competent body for Estonia were contacted to review this section prior to publication for accuracy and completeness, but no response was received from the Body.

e-mail: henn.parnamets@ekm.envir.ee, http://www.envir.ee/index.html] is responsible for implementing EMAS in Estonia. In April 2002, the Estonian Ministry of Environment and the Finnish Environment Institute began negotiations about a cooperation project called "Implementation of EMAS in Estonia". The draft project plan is currently under preparation.

"At the moment, more than 47 companies have an ISO 14001 certificate. EMS projects are also being carried out in co-operation with the Danish Agency for Trade and Industry . . . "[130] Tauw, an international Dutch consulting and engineering company, has been contracted to work with the Estonian government on EMAS development. "The project will run from 1 January 2004 through 31 December 2005 and aims to assist the Estonian government (Ministries of Environment and Economic Affairs) with the set-up of the official bodies and the training of the personnel required to execute the EMAS regulations".[131]

> The project includes components such as training of personnel of the Estonian accreditation organization and of a Competent Body that will be established for the registration of companies wanting to participate in EMAS. In addition, the project also includes training of companies that are interested in EMAS, the realization of two pilot projects and a national promotional campaign for EMAS. Tauw will give advice on 'incentives' the Estonian government could implement to promote participation in EMAS among companies. Examples are economic incentives but also concessions such as simplified environmental licences.[132]

Hungary****

Government Decree 74/2003 established the Competent Body in Hungary. The Hungarian Accreditation Board [1119 Budapest, Tétényi út 82, Tel: +36 203 3981, Fax: +36 204 5075, e-mail: nat@nat.hu, http://www.nat.hu/index.html] is responsible for the accreditation of EMAS verifiers, while the Ministry of Environment and Water [1011 Budapest, Fö Street 44-50, 1394 Budapest, Pf.: 351, Tel: +36 457 3300, e-mail: kozonsir@mail.ktm.hu, http://www.kvvm.hu/index.php] is the Competent Body.

Chiefly due to its status as a relatively new member of the EU, little information is available with respect to the status of EMAS in the country. The Competent Body should be contacted for further information.

Republic of Latvia+

Latvia is the first country in Europe to have a Green Party member as Prime Minister.[133] The State Environmental Impact Assessment Bureau, part of the Ministry of Environmental Protection of the Republic of Latvia [Rūpniecības iela 23, Rīga, LV 10-45, Latvia, Tel: + 371 7321173, Fax: + 371 7321049, e-mail: ivn@ivn.gov.lv;

**** Members of the competent body for Hungary were contacted to review this section prior to publication for accuracy and completeness, but no response was received from the Body.

+ Members of the competent body for Latvia were contacted to review this section prior to publication for accuracy and completeness, but no response was received from the Body.

http://www.varam.gov.lv/ivnvb/default.htm], is the Competent Body, as well as the Accreditation Body. This establishment is detailed in the Latvian regulation "On Environmental Protection".

"Latvia's efforts to achieve accession to the European Union are bringing about dramatic change in the country's environmental laws".[134] Latvian environmental law will be implemented via the "Environmental Protection Policy", which is currently being amended from the original 1995 version. Latvia has three main laws which contain direct—albeit implicit—references to EMAS and its requirements. The "Framework Law on Environmental Protection", amended in 2000, includes a chapter entitled "Rights of the Public to Receive Environmental Information and Participate in Decision Making on Environmental Protection Matters".[135] The October 1998 "Law on Environmental Impact Assessment" included EC regulations 85/337/EEC and 97/11/EC), and the "Directive on the Freedom of Access to Information on the Environment" (90/313/EEC) has been fully incorporated into Latvian law as well.[136]

One other significant regulation in the country is the "Law on Pollution", which regulates pollution from certain industries and mandates risk management. These industries must obtain a permit from their Regional Environmental Board in order to conduct operations. "Integrated permitting is now required for new installations and for existing installations that have undergone substantial changes. Permits for all existing installations will be phased in gradually, from now until 2007".[137]

Lithuania[++]

The EMAS program in Lithuania is somewhat unusual, as responsibilities are relatively fragmented: the Lithuanian Ministry of Environment [A. Jaksto 4/9, LT-01105 Vilnius, Tel: +370 5 2663661, Fax: +370 5 2663663, e-mail: info@am.lt; http://www.am.lt] is in charge for the overall supervision of EMAS. A separate organization, the Lithuanian Ministry of Economy [Gedimino Ave. 38/2, LT-01104 Vilnius, Lithuania, Tel: +370 5 2622416, Fax: +370 5 2623974, e-mail: kanc@ukmin.lt; http://www.ekm.lt] is responsible for the information management and the promotion of the scheme.[138] There exists an EMAS "help site" in the country for firms seeking to implement the standard. This site, available only in Lithuanian, is available at http://aaa.am.lt/EMAS/EMAS%20internet/index.htm

In 1996, environmental expenditures in Lithuania amounted to USD 31.1 million, or 0.4% of GDP.[139]

The Governmental Resolution on EMAS implementation in Lithuania was adopted on 10 October 2002.

In addition, the Competent Body is the Lithuanian Environmental Protection Agency [Juozapaviciaus 9, LT-09311, Vilnius, Tel: +370 5 2723202, Fax: +370 5 272273, e-mail: aaa@gamta.lt, http://aaa.am.lt], and the Accreditation Body is the National Accreditation Bureau [Algirdo 31, LT-03219, Vilnius, Tel: +370 5 2136153, Fax: +370 5 2136153, e-mail: i.mikelioniene@nab.lt; http://www.nab.lt].

[++] The author is extremely grateful to Mr. Valeras Kildisas for his efforts in reviewing this section for accuracy and completeness.

A project on "Implementation of EMAS in Lithuania" was conducted in the year 2001 by the Finnish Environmental Institute and the Center for Environmental Policy (Lithuania) with the bilateral support of the Finnish Ministry of Environment. The main beneficiary was the Lithuanian Ministry of Environment. During the project, experiences made by certain EU Member States were presented, and a seminar on the development of the national EMS program and the promotion of EMAS was organized.

"... EMS Implementation in Lithuania II: Raising Awareness and Interest in EMAS in Lithuania" started end of 2002. The project [was] implemented by the Finnish Environmental Institute and the Center for Environmental Policy. The overall objective of the project [was] to increase interest in EMAS and ensure a sufficient level of knowledge about it among relevant user groups by disseminating information and communicating about EMAS with key stakeholders. The project goal [was] to train the National Accreditation body, environmental authorities and the Competent Body to perform EMAS-tasks and to implement the National EMAS Program.[140]

Malta[+++]

Malta has been involved with the EMAS program since 1998, through a project of 18 months duration, substantially financed by the LIFE Programme. LIFE is the Financial Instrument for the Environment, introduced in 1992, and is one of the spearheads of the European Union's environmental policy. It co-finances projects in three areas: nature, environment and "Third countries". After vetting some 300 industrial firms, 50 were chosen to undergo the "EMAS treatment". Since the overall goal of the project was "awareness raising", it was believed that the participating firms would serve as showpieces, providing a high visibility profile for the advantages to be gained from the adoption of environmental management systems.

At that time, the Maltese government was encouraging industry to embark on a restructuring process, and so it was propitious to align the application of new technologies and novel managerial methods with innovative (environmental) norms which, while still pursuing wealth-creating objectives, competition and cost-effectiveness, also responded to the challenges of sustainable development.

An internal list compiled by the EU Commission Head of Unit, Enlargement and Neighboring Countries, showing how far the accession countries have progressed through 26 steps, defined as measures demanded by the EU and carried through, in the area of environmental improvement, stated that Malta had completed only 10 of the steps.[141]

In November of 2003, The Malta Tourism Authority's Product Planning and Development Directorate organized a training program on environmental management systems for Maltese hotels. The representatives, who have been designated as eco-coordinators, received training on the implementation and legal implications of EMAS. The Scheme awards hotels which show a commitment toward reducing their impact on the environment. Reducing energy and water consumption, managing waste, promoting local culture and training employees all feature as main criteria for certification.[142]

[+++] The author is extremely grateful to Dip. Ing. Francis E. Farrugia, MIEE, MIQA, Eur. Ing, Chairman—Malta Standards Authority, for his efforts in reviewing this section for accuracy and completeness.

Malta had initially asked for a 1 year "phase in" period before adopting the IPPC regulation, in order to give industries time to adapt with regard to water pollution and the discharge of industrial effluent. "However, this was later withdrawn because of a transition period obtained with respect to the disposal of dangerous substances into the sea. This transitional period applies until 2007".[143]

STM Microelectronics and Sol Melià were two of the first EU-based organizations to become registered to EMAS, in 2001.

The Malta Standardisation Authority (MSA) [2nd Floor Evans Building, Merchants Street, Valletta VLT03, Malta, Tel: +356 21242420 / +356 21255548, Fax: +356 21242406, http://www.msa.org.mt/] is the agency responsible for administering both the EMAS program and the European Eco-Label Project. NAB-MSA, the accreditation division within the MSA, is responsible for the accreditation of verifiers. NAB-MSA is also the accreditation authority for all certification activities.

Poland++++

In 1991, Poland adopted the "National Environmental Policy", also known as NEP-1. "The document was based on the fundamental principles of environmental protection and recognized sustainable development as the main goal of the management of the environment".[144] Early on in its "reunification" with Western Europe, Poland was already looking toward EU membership. As a result, one of the key aspects of NEP-1 was the tightening and strengthening of Polish environmental standards to that of Western, specifically EU, environmental regulations.[145] NEP-1 was largely successful, resulting in the creation and implementation of the "National Environmental Policy Programme to the Year 2000" in 1994. The "NEPP"'s manifest purpose was to focus on the "mid-term goals" of NEP-1, which was to improve the overall state of the Polish environment.

The Second National Environmental Policy, NEP-II, was adopted by the Polish government in June 2000.

> The intention was to make the second document a political and strategic document setting the guidelines of the state action in the field of environmental protection for the upcoming decades. The second strategy should in a new way define the principles of environmental policy and included all issues, which had not been clearly identified in the first strategy . . . . In the drafting of the second strategy, the NEP II, it was very important to underline the priority given to work towards full integration of the environment in other sectors like for instance the economic and the social sector. This means that the environmental considerations also would play an important role when it comes to e.g.: industry, energy, transport, agriculture, tourism, fishery, building, trade, municipalities, health and social welfare, the labor market, [and] the educational sector.[146]

In contradiction to a number of the other accession countries, Poland has not managed to implement a "quasi-EMAS system" at present. Accession countries such as the Czech Republic, Hungary and Slovakia, where a number of organizations have come

++++ The author is extremely grateful to Mr. Robert Pochyluk, Project Manager of www.eko-net.pl, a professional, web-based service for environmental managers, for his efforts in reviewing this section for accuracy and completeness.

through the verification procedure based on the EMAS regulation, have implemented such systems. Currently, the new Act regarding EMAS implementation is in the final phase of Parliamentary review, and is expected to come into force in the spring of 2004. This Act will ultimately determine who will adopt the critical EMAS roles, such as the Competent Body.

According to the current version of the Act, the Ministry of Environment [Wawelska 52/54, 00-922, Warsaw, Poland, Tel: +48 22 5792900, Fax: +48 22 5792224, e-mail: minister@mos.gov.pl; www.mos.gov.pl] will act as the EMAS Competent Body. The Ministry will employ 16 Provincial Departments for Environmental Protection, to administer provincial EMAS registers. The data from the provincial registers will form the National EMAS register. The Polish Accreditation Center (Polskie Centrum Akredytacji—PCA) [23A Klobucka Street, Ent. B., 02-699 Warsaw, Tel: +48 22 5488000, Fax: +48 22 6471301, e-mail: secretariat@pca.gov.pl / pca@pca.gov.pl; www.pca.gov.pl] will take on the role of the EMAS Accreditation Body. PCA is working on the procedure which will allow individuals and institutions to be accredited. "The PCA replaced the Polish Centre for Testing and Certification (PCBC), previous national body for testing and certification, which will be further responsible for its present scope of activities, including training of auditors and verifiers, but excluding all accreditation issues".[147]

Slovak Republic•

The Slovak Republic has established the Slovak National Accreditation System (SNAS) [Slovenska narodna akreditacna sluzba, P.O. Box 74, Karloveska 63 840 00 Bratislava, Tel: +421 2 6541 2963, Fax: +421 2 6542 1365, e-mail: snas@smu.gov.sk; www.snas.sk] as the National Accreditation Body for EMAS.

> People in Slovakia do not tend to talk much about the environment outside of serious problems in the form of catastrophes or higher prices. However, the issue is becoming more urgent, as Slovakia must bring the state of its environment into harmony with EU standards. This will not happen overnight and the process will cost Slovakia over Sk188 billion (€4.6 billion).[148]

Chiefly due to its status as a relatively new member of the EU, little information is available with respect to the status of EMAS in the country. The Competent Body should be contacted for further information.

Slovenia ••

The Republic of Slovenia has a general environmental code covering all the most important fields of the environment and environmental activities. This is the Environmental

• Members of the competent body for the Slovak Republic were contacted to review this section prior to publication for accuracy and completeness, but no response was received from the Body.

•• Members of the competent body for Slovenia were contacted to review this section prior to publication for accuracy and completeness, but no response was received from the Body.

Protection Act (enacted in 1993; Official Gazette of RS, No. 32/93). The emphasis of the legislation (that is, on the elements of the environment and on the complex protection of the environment) is enacted in the Environmental Protection Act of 1993.[149]

The Ministry of the Environment, Spatial Planning and Energy [Dunajska 48, SI-1000, Ljubljana, Slovenia, Tel: +386 1 478 7302, Fax: +386 1 478 7425, e-mail: samo.kopac@gov.si] functions as the Competent Body in the country.

Chiefly due to its status as a relatively new member of the EU, little information is available with respect to the status of EMAS in the country. The Competent Body should be contacted for further information.

LATER TERM ACCESSION COUNTRIES

As of press time, the following three countries were working toward accession into the EU: some in 2007 and some beyond. For that reason, as well as the fact that many of the programs which the countries are required to have in place before being accepted for full membership are missing, these countries will be examined separately from those in the EU-25.

Romania*

The country of Romania is unique in that, along with Bulgaria, it is not scheduled for accession to the EU until 2007. The Romanian Association for Accreditation (RENAR) [Bucharest, Gral Berthelot street, no. 24, District 1, Tel: +4021 310 22 74, Fax: +4021 310 13 90, e-mail: renar@renar.ro; http://www.renar.ro/] has been selected as the National Accreditation Body, while the Ministry of Agriculture, Forests, Waters, and Environment [Bucuresti, B-dul Carol I, nr. 24, sector 3, codul postal 020921, oficiul postal 37, Tel: 0040 21 307 23 00, e-mail: comunicare@maa.ro; www.maap.ro] is responsible for accrediting environmental verifiers.

Chiefly due to its status as a potential future member of the EU, little information is available with respect to the status of EMAS in the country. The Competent Body should be contacted for further information.

Bulgaria**

The estimated investment costs necessary for Bulgaria to comply with EU environmental legislation ranges from 7 to 10 billion Euros.[150]

Bulgarian environmental policy was essentially defined by the 1991 Environmental Protection Act (EPA). Article 3 of the EPA laid out a system of fines for environmental degradation, and specifies the apportionment of such fines among various bodies. The

* Members of the competent body for Romania were contacted to review this section prior to publication for accuracy and completeness, but no response was received from the Body.

** Members of the competent body for Bulgaria were contacted to review this section prior to publication for accuracy and completeness, but no response was received from the Body.

EPA makes clear that "Such funds shall be used for financing environmental protection activities alone".[151]

Interestingly, two Articles of the EPA function to meet the "Environmental Statement" requirement of EMAS. Article 4 requires that "The Council of Ministers shall prepare and submit to the National Assembly a report on the state of the environment once a year. After its approval the report shall be published as an Annual Book on the state of environment [sic]".[152] Similarly, Article 9 mandates that "All persons and the state and municipal authorities shall have the right of access to the available information concerning the state of the environment".[153]

The "Annual Book" must include the following:[154]

- Data concerning the state of the environment components;
- Data about the results of activities that bring or may bring about pollution or damage to the environment or its components;
- Data concerning activities and actions undertaken for protection and restoration of the environment.

Of further interest is that Article 20 essentially mirrors the "environmental assessment" aspect of EMAS, as it requires certain cases to conduct mandatory assessments either "periodically" or at least once every 5 years (for large polluting facilities).[155]

Turkey***

"The reports of UNEP and of OECD show that there is considerable environmental legislation in Turkey, but there is not an efficient enforcement of it".[156]

As of the date of publication of this text, a date for the accession of Turkey to the EU has not been established.

Chiefly due to its status as a potential future member of the EU, little information is available with respect to the status of EMAS in the country. The Competent Body should be contacted for further information.

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CHAPTER 6

DISCUSSION ON ENVIRONMENTAL MANAGEMENT SYSTEMS. EVALUATION OF EMS' IMPACTS ON SMEs

"It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change".

—Charles Darwin

As with virtually any type of business decision, which arguably the decision to implement an EMAS program is, cost is the penultimate driver in the system. In this chapter, we will examine the various opinions which exist with respect to the viability, primarily from financial and organizational efficacy standpoints, of implementing an EMAS system in the corporate environment. "The number of environmental management systems (EMS) in Europe grew by 160% between 1999 and 2002 . . . the EU accounts for almost 50% of these certificates [ISO 14001 and EMAS] worldwide".[1]

Various opinions exist in the corporate world relating to environmental management systems, or EMS, such as the fact that there is "little correlation between environmental management systems and performance".[2] Others have contended that EMAS implementation teams " . . . often get mired in the paperwork. The standard requirement to 'go through the process' can make it quite difficult to focus less on the details and develop an EMS with a strategic environmental direction".[3]

Kraus (2004) has discussed the costs involved in implementing an EMS at the corporate level:

> Implementing an environmental management system implies the expenditure of substantial resources for all organizations which elect to do so. Over 95% of this real economic cost is attributable to the time inputs from personnel working within the organization on program development (drafting policies, procedures and the like), training (most personnel will be trained) and auditing (internal and maybe 3rd party).[4]

Kraus points out, that several studies undertaken in both the U.S. and Europe in recent years (several of which will be discussed later in this chapter) "have concluded that environmental management systems do not give rise to meaningful performance improvement".[5] He goes on to cite two central reasons why "traditional, document-focused approaches to EMS implementation", which EMAS may certainly be considered, "cannot yield meaningful performance improvement":[6]

1. It [such a system] focuses on *conformance* [emphasis the original]—with the standards—rather than the achievement of *performance outcomes* [emphasis the original] or an organization's real ability to deliver same; and

2. The document-focused model that underpins the traditional approach is at odds with the way that managers actually deliver results.

Due to the nature of EMAS, each of these points will be examined individually.

To be sure, EMAS as a whole is a type of Environmental Management System. However, as we have seen earlier, it differs in its direction and its overall goal from programs such as ISO 14001. Recall that EMAS focuses upon performance, while ISO 14001 (among others) focuses on conformance. EMAS mandates that an organization be in compliance with all relevant permit requirements, environmental regulations and so forth. ISO 14001 does not expressly require this aspect, only that there is a continual improvement. Thus, when Kraus' first statement is applied to ISO 14001, it is in fact valid. However, it falls short of the mark when applied to EMAS. Because EMAS expressly mandates compliance, it necessarily must yield "performance outcomes", when implemented properly. In the abstract, maintaining compliance with all applicable environmental regulations, although perhaps expensive to do so, will ultimately result in decreased or eliminated fines by the responsible authorities, as well as potential citizen or other lawsuits for damages which may occur from compliance failures.

With regard to the second point, it is believed that—in most organizations—results are achieved by managers either by setting and reaching goals directly, and/or by teams working together to accomplish these goals. Being "hemmed in" by a document-focused system can indeed be challenging, in that it *may* stifle the flexibility and creativity of personnel employed by the organization. In theory, they may be reluctant to change a process or to implement a new and more effective way of managing a particular issue, due to the constraints (approvals, document changes, retraining, etc.) imposed by a document-heavy system. This is indeed a valid point. But realize that EMAS, like ISO 14001 and others, is not required to be structured in this way. Indeed, flowcharts may be used, for example, instead of cumbersome documents, to define and describe processes and procedures. Kraus' point is certainly a valid one, but firms need not be constrained by managing their programs only in this manner.

Certainly, any environmental management scheme, be it BS 7750, ISO 14001, EMAS or others, must demonstrate a tangible return on investment (ROI) in order to be fully embraced and pursued by firms as viable. Ruth Hillary (1998) linked EMAS to the idea of "market based instruments" in her text *The Eco-Management and Audit Scheme: a Practical Guide* by declaring "[d]esigned to internalize external environmental costs, market-based tools alert both producers and consumers to the need to use natural resources responsibly and minimize or avoid pollution and waste".[7] In addition, related to the EMAS program, Hillary provides an excellent summation, stating "Essentially, market based tools are about 'getting the prices right' so that environmentally friendlier products and processes are rewarded in the market place".[8]

"The total administrative effort (for companies and society) in applying and running a typical company EMAS is between 0.7 and 1.2 person-months of work per year . . . around 20% of the costs are borne by the companies".[9] Ulrich Steger (2000) quantified this idea somewhat more precisely, in terms of Euros, when he concluded the cost estimate for EMAS implementation to range between ˚ 15,000 and ˚ 2 million,

clustering around ˚ 50,000–˚ 100,000.[10] This contrasts with his findings as to the range of costs for ISO 14001 registrations, ˚ 50,000–˚ 100,000. Furthermore, institutions such as Deutsche Bank have bestowed upon EMAS registered sites "favorable rates of interest . . . because [Deutsche Bank] regards EMAS validation as a clear signal of reduced environmental risks".[11]

However, this ROI need not be examined in purely financial terms, such as by calculating the reduction in energy costs achieved by employing EMAS, for example. Firms must also consider items which have more economically intangible benefits, such as the goodwill which may be generated between regulatory bodies and the company, thereby potentially reducing the frequency and intensity of inspections, which could most certainly save costs. Furthermore, this goodwill could translate into the marketplace, to consumers who are more inclined to buy products from "green" firms, thereby again increasing revenue. By the same token, the marketplace may provide a strong means for influencing the further development of EMAS. "As a few retailers can affect the choices of a much larger number of consumers, a few large firms can induce change in their entire web of suppliers below them. For example, Volvo has announced that it will favor suppliers that are EMAS certified".[12]

Nevertheless, the economic cost–benefit analysis data related to EMS/EMAS is fragmented and contradictory. "In Austria, for example, environmental consultants estimated the (economic) cost of EMS, especially EMAS, to be only one third of the companies' estimates".[13] Additionally, without a common set of terms across which to compare EMAS costs, the results obtained via surveys will necessarily vary considerably. "Some companies only [count] the cash cost, others included the follow-up actions triggered by a discovery in the process of establishing the EMS".[14] Finally, although the initial (implementation) costs of the EMAS program may be readily quantifiable, such as consultant fees, document preparation, registration fees and costs, etc., the majority of the benefits of the program (such as more positive public perception, etc.) are both long-term and inherently difficult to quantify economically. Certainly, if a firm realized a 5% increase in its sales volume after becoming EMAS registered, it is conceivable, but not definitive, that the increase may have resulted from the registration. Such an increase could also be attributed to a boost in market share due to a competitor leaving the market, the introduction of a popular new product, favorable currency exchange rates and so on.

Clausen et al. (1999) have attempted to quantify where the resources are spent when preparing for EMAS (Figure 1).[15]

Clausen et al.'s survey results appear to postulate that the largest portion, almost one third of the overall costs expended by organizations to become EMAS registered, is attributable to what they term "external qualification". That is, the external audits and verifications necessary to coalesce the EMAS program into existence. The second largest expense, almost one quarter of the costs, is for "miscellaneous". These charges may be such things as the printing of the environmental statements, public relations or publicity (advertising of the EMAS program, etc.), capital and other expenditures necessary to bring the organization "into line" so that it can successfully pass the EMAS registration audit (such as upgrading a wastewater treatment system so that the

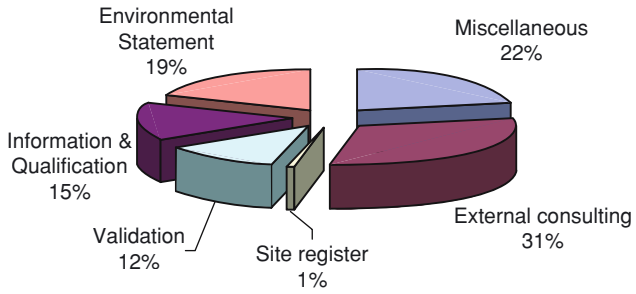

Figure 1. Resource allocation for EMAS implementation.

contaminant levels in the effluent are within permit requirements), and so forth. The findings of Clausen et al. appear to state that, of the total costs of EMAS implementation, over half (53%) are merely "prepatory" items for the process of earning and maintaining registration, at least from an infrastructure point of view.

Although specific to ISO 14001, a recent UK survey of 349 firms by the Institute of Environmental Management and Assessment (IEMA) which had attained certification "believe that the presence of an EMS provides the platform to improve beyond what would otherwise be accomplished".[16] IEMA manages the application of EMAS in the UK. The survey found that 67% of the respondents believed an EMS was a positive feature outright, while 16% said it made no real difference, and 17% believed that it made an initial difference, but that difference was difficult to sustain over time. Of those 349 firms, 63%—perhaps ironically almost the exact percentage of firms which believed an EMS was of significant value—were registered to an environmental standard such as ISO 14001, and an additional 20% were in the process of implementing ISO 14001 or EMAS.[17]

By contrast, and merely as a reference point, a similar U.S. study by the University of North Carolina at Chapel Hill concluded that simply having an EMS in place does not provide a consistent outcome. In other words, if one compares two firms which have earned ISO 14001 certification, for example, their comparative "quality" may not be the same.[18]

While not the case with EMAS, which mandates continual improvement and compliance with relevant environmental regulations, some have contended, as we have seen earlier with Kraus' views, that having an EMS may actually contribute to a *lack* of performance.

> Proceduralizing any business activity tends to minimize strategic thinking. In many respects, ISO 14001 and EMAS illustrate one of the worst trends in environmental management. They may create the illusion to executive management that all is well because the process is in place; management's attention may shift from improving performance goals to completing a procedure and getting the box checked. Essentially, environmental concerns are reduced to a binary question, "Are we certified or not"?[19]

Martin Baxter of IEMA has suggested that because there are so many reasons as to why firms choose to implement EMSs, there will necessarily be a variety of "outcomes" of the EMS.[20]

However, other organizations take the converse view of the topic, contending that EMS, as manifested in programs such as EMAS, among others, have a profound benefit on organizational competitiveness and success in the marketplace. In their 2002 publication *The Pinnacle of Environmental Management*, the International Network for Environmental Management's (INEM) Department for Environment, Food and Rural Affairs (DEFRA) suggested the following list of ways in which EMAS may benefit a firm:[21]

1. Make more sustainable use of resources;
2. Show your stakeholders you are managing your environmental risks responsibly;
3. Improve your relations with environmental regulators;

As a side note, in the same vein, a 2003 report by the European Environment Agency cited "achiev[ing] better relationships with regulators and clients" as one of the main reason for installing ISO 14001 or EMAS in companies as well.[22]

4. Comply with regulations, environmental laws, and voluntary or contractual agreements;
5. Use EMAS to your advantage in the marketplace;
6. Demonstrate that you're a well managed company to investors and insurers;
7. Respond to growing expectations and pressures for environmental reporting;
8. Communicate more effectively with stakeholders;
9. Modernise your management;
10. Enhance the quality of your products and services;
11. Make validated green claims about your products, services and activities;
12. Enrich the process of environmental innovation and hasten the move to more sustainable means of production and consumption;
13. Motivate staff and involve employees in delivering the environmental management system;
14. Improve individual and public health.

THE IMPACT OF EMAS ON SMALL AND MEDIUM-SIZED ENTERPRISES

Thus far, we have examined the means by which large(r) firms have quantified their implementation of environmental management systems, such as EMAS, from a business point of view, as well as examining the authorities' and other interest groups' as to the efficacy.

However, one constituency which cannot be overlooked with regard to the EMAS program is that of small and medium-sized enterprises (SMEs). SMEs are unique, in that

Table 1. Comparison among micro, small and medium-sized enterprise definitions

	Medium-sized	Small	Micro-enterprise
Max. number of employees	250	50	10
Max. turnover (in million ECU)	40	7	–
Max. balance-sheet total (in million ECU)	27	5	–

although the SME sector accounts for 70% of the gross national product globally, these firms typically have fewer than 250 employees and are at a competitive disadvantage when it comes to applying resources to environmental management systems.[23]

In its Commission Recommendation of 03 April 1996, the European Commission established formal definition and criteria for SMEs, which are summarized in Table 1.[24]

To be classed as an SME or a micro-enterprise, an enterprise has to satisfy the criteria for the number of employees and one of the two financial criteria, i.e. either the turnover total or the balance sheet total. In addition, it must be independent, which means less than 25% owned by one enterprise (or jointly by several enterprises) falling outside the definition of an SME or a micro-enterprise, whichever may apply. The thresholds for the turnover and the balance sheet total will be adjusted regularly, to take account of changing economic circumstances in Europe (normally every 4 years).[25]

> . . . in the EU . . . 93% of all businesses employ less than 10 persons and 99.9% less than 250. The problem with SMEs and environmental considerations is that not all instruments that are effective in promoting sustainable development in large companies are equally effective when applied to small and medium sized ones. This means that the EU needs to adapt these instruments to the particular circumstances of SMEs. In order to better assess the situation in EU Member States, a questionnaire was sent to the national governments. Their replies have been analysed in a report, which can be accessed on the following page: http://europa.eu.int/comm/environment/sme/smestudy.pdf.[26]

As previously stated, the majority of EMS have been undertaken and implemented by firms of size: that is, with more than 250 employees. Such large(r) firms have more resources, be they financial, human or other, to design and effectively implement an EMS. Necessarily, then, small and medium-sized enterprises are at a disadvantage in these areas. "Lack of time, resources and qualified personnel are often mentioned as the main reasons why SMEs are prudent about investing in an EMS".[27]

Although the issue of specific organizations and resources available to SMEs will be examined in detail later in the chapter, it is instructive to provide an overview here of the various obstacles SMEs face when attempting to implement an environmental management system, such as EMAS, so that the reader can better interpret the efficacy of the resources outlined later.

SME participation in "formal" and "less formal" EMS across the EU is relatively low.[28] A "formal" EMS is loosely defined as one which meets all of the criteria set out in a recognized standard, such as EMAS or ISO 14001. A "less formal" EMS is

loosely defined as one which incorporates some elements of the foregoing but has not been formally certified by a competent authority or by an independent verifier. In many countries of the EU, less formal EMS are pursued more actively than formal EMS, if for no other reason then that they are more cost effective, in theory, considering that the majority of EU firms are of the SME range.[29]

Hillary (1999) determined four "internal barriers to EMS adoption", and three "external barriers of EMS adoption", as follows:[30]

1. The lack of human resources rather than financial ones is the major internal barrier to EMS implementation and becomes increasingly important as the size of the company decreases.

Interestingly, but perhaps not surprisingly, SMEs have indicated that the primary barrier to EMAS implementation appears to be a dearth of personnel to facilitate the Scheme, rather than necessarily the cost of the program itself. This may be due to the subsidies offered in many cases (see further in this chapter), however.

2. EMS implementation is an interrupted and interruptible process in SMEs.

Based on the previous statement, this idea is a logical corollary. With a relatively small staff available to be utilized, SMEs necessarily must make use of personnel who have other positions in addition to those related to the Scheme. For example, a large firm may have the luxury, from a staffing point of view, to employ an individual whose sole responsibility is to administer the Scheme, and who has authority for all items relating to it. He or she need not be necessarily concerned with production quotas, sales figures, and so forth. In SMEs, however, the organization may well have one person who manages production, functions as the site Safety Health and Environmental Officer, is responsible for coordinating the transportation of goods and raw materials, and even handles some administrative work. Thus, EMAS issues are necessarily subordinated to other priorities in the workload. So they are not only interrupted by other activities taking place, but the Scheme itself is "interruptible", in that it can be put on hold for a time being and then returned to as the situation allows.

3. Practical problems with EMS implementation exists and includes how to determine environmental aspects and assign significance and how to achieve internal auditor independence in small and micro firms.

This section is largely self-explanatory, but with a key issue. Many firms may not have the ability, due to staffing numbers, to fully implement the EMAS system. In addition, depending on the levels of training and familiarity with the Scheme, there may be significant issues in determining the environmental aspects associated with the organization and their corresponding significance. For that reason, it is useful to take advantage of the SME resources available by the applicable Member States.

In addition, the key issue of internal auditor independence is one which most of the international systems (ISO 9000, ISO 14000, etc.) have struggled with as well. How does a member of a 25 person firm conduct an internal audit impartially, when one of the areas he or she must audit is one which they are chiefly responsible for? One

way that firms in general have chosen to adapt to this requirement, and which most auditors or verifiers have agreed with (provided they are notified in advance) is to have a second auditor/person who is responsible for auditing the area in "question". While not perhaps the perfect solution, it is certainly a viable alternative.

4. SMEs are largely ill-informed about EMS, how they work and what benefits can be gained from their implementation.

At the time of Hillary's observation, 1999, EMAS II was only in the very formative stages. Thus, there were no express provisions for implementation in SMEs. However, as will be shown Article 11 of 761/2001, the issue of SMEs has been clearly addressed and delineated. In addition, the European Commission has published several guidance documents related specifically to EMAS implementation in SMES.

External barriers include:

1. SMEs face inconsistencies in and barriers from the certification and verification systems and complain bitterly about the high costs associated with being certified to ISO 14001 and registered to EMAS [*author's note: bear in mind this finding/statement was made in 1999, 2 years before 761/2001 allowed for ISO 14001 registrations to be "linked" to EMAS*].
2. Many SMEs experience insufficient drivers for EMSs [sic] adoption and are uncertain about the market benefits of such systems. This dovetails with item #4 above.
3. SMEs need support and guidance to implement EMS but experience difficulties gaining consistent quality information and experienced consultants of good quality. The lack of sector specific guidance and material tailored to different sizes of firms is an added problem.

Once again, at the time of Hillary's statements, EMAS was in its relative infancy. Numerous resources now exist for both SMEs, and firms in general, to implement the Scheme and to find consultants and verifiers within the various Member States.

Having recognized that there were potential shortcomings related to SME implementation and resources in the original incarnation of EMAS, 761/2001 contains specific aspects designed to give advantages to SMEs looking to pursue EMAS registration. These may be found in Article 11, "Promotion of organisation's participation, in particular of small and medium-sized enterprises", among other places. The specific language is as follows:

> In order to promote participation of SMEs, including those concentrated in well-defined geographical areas, local authorities, in participation with industrial associations, chambers of commerce and interested parties may provide assistance in the identification of significant environmental aspects. SMEs may then use this in defining their environmental programme and setting the objectives and targets of their EMAS management system. In addition, programmes designed to encourage the participation of SMEs, such as a step by step approach which will eventually lead to EMAS registration, may be developed at regional or national level [sic]. The system shall operate with the objective of avoiding unnecessary administrative burden for participants, in particular small organisations.[31]

While resources are made available in the various Member States and via the European Commission and its "subsidiaries", some specific items applicable to the development of EMAS itself, these agencies also offer specific guidance on the creation of the environmental management system itself.

Maxwell (2004) has identified seven means of assisting SMEs in developing an EMS:[32]

1. Direct subsidies

Direct subsidies involve granting direct funding to the SMEs, in order to assist them with the financial aspects of developing an EMS. In addition, internal networks of resources for the SMEs may be developed, thereby creating a "support network" for the firms and minimizing the administrative burden involved.

2. General and technical information

This aspect involves raising awareness throughout the organization of the benefits and requirements of EMS, and involving the SME organizations themselves in "development and execution" of the EMS. The central idea in this regard is to "talk to the SMEs in a language they understand"—that is, from a business perspective. "Business language" is employed to sell the benefits of EMS adoption to the firm. Further, examples of how other SMEs and firms in a similar sector of the economy have implemented EMS may be cited, as may the commercial and environmental benefits of adopting the program.

3. Promotion of SME friendly formal EMS implementation

Here, the objective is to make the implementation steps for EMAS as "palatable" as possible to the groups involved. It is a direct effort to tailor the process to the needs and concerns which SMEs incur, such as streamlining documentation, employing language and terminology which are specific to the industries of the SMEs, and assisting with environmental reporting, auditing and verification requirements.

4. Sector specific initiatives

This aspect is similar to the foregoing one, in that it "encourages sectoral EMS approaches tailored to meet sectoral and SME characteristics". This involves development and use of specific guides, tools and training, among other items.

5. Encourage network approaches

"SMEs establish networks with other actors, to facilitate EMS preparation and implementation". These networks can be either "horizontal"—SMEs in the same geographic area, or "vertical", such as companies involved in the same aspect, such as in a supply chain.

6. Less formal approaches to EMSs

This involves "promoting environmental performance in line with the plan-do-check-act" model", which can be converted to a formal EMS if required. Three examples of these "less formal" EMS types or approaches are staged approaches (BS 8555), alternative or simplified approaches, and integrated approaches, which "integrate environment, health and safety, quality, social" and other aspects into the EMS process.

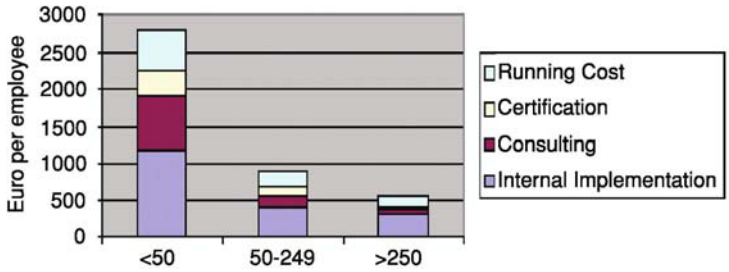

Figure 2. EMAS implementation costs (1999).

7. Offering benefits to companies with an EMS

Areas proposed or under consideration here involve initiatives for awareness and recognition of EMS. These are targeted at specific audiences, such as customers in a supply chain, banks, insurers and regulatory authorities, among others, as well as promoting EMS "uptake" in public authorities. The benefits may take the form of easier access to financing, lower insurance rates, and the perennial "regulatory relief/deregulation".

> One strategy of making the adoption of EMAS easier for SMEs are [sic] networks or groups of SMEs, in which a number of SMEs participate and cooperate during the process of implementation. An external advisor is acting on behalf of the whole group which reduces the cost of external advice significantly. In addition, arising problems may be discussed and solved with the other firms and certain documents may be developed for the use of all participants. This strategy is known to have been successfully applied in projects in Sweden and Germany . . . [33]

By the converse, however, even with all of the advantages afforded to SMEs, many such firms are still reluctant to participate in the Scheme, largely due to *perceived* cost and resource demands. One study (1999) concluded that, excluding external implementation costs, such as consultants, etc., "that firms of up to 50 employees invest about ˚ 850 per employee, firms with up to 500 employees invest about ˚ 350 per employee, and firms with more than 500 employees invest ˚ 25 per employee" (Figure 2).[34]

These firms believe that their costs, both fixed and variable, to implement and maintain the system will be a larger percentage of their overall operating budget and income, and will require excessive manpower and resources which, *de facto*, they do not have. Again, however, as we will see shortly, there are various programs in place to reduce or eliminate such perceived burdens.

To this end, 761/2001 specifically provides a vehicle and a mechanism for the consideration of SMEs, in that it seeks to have their perceived lack of resources (for environmental auditing) specifically addressed. Section 10 of 761/2001 states:

"It is important that small and medium-sized enterprises participate in EMAS and that their participation should be promoted by facilitating access to information, to existing support funds and to public institutions and by establishing or promoting technical assistance measures".[35]

While Section 11 notes:

"The information provided by Member States should be used by the Commission to assess the need for developing specific measures aimed at greater participation by EMAS in organisations, in particular small and medium-sized enterprises".[36]

Researchers Vittorio Biondi, Marco Frey and Fabio Iraldo at the Istituto di Economia delle Fonti di Energia, Bocconi University in Milan (the "Biondi Study") conducted a survey of 39 firms between 1995 and 1997, in an attempt to determine the primary obstacles faced in EMAS implementation at small and medium-sized enterprises (SMEs).[37] The large industrial firms, such as Bayer, Akzo Nobel and others, were pursuing EMAS registration for a variety of reasons, such as customer demand and public perception. However, the SMEs, generally lacking the depth of resources that these larger firms had, were much more reluctant to bear the burdens of EMAS registration.

As perhaps was to be expected, financial costs were central. Specifically, costs relating to guaranteeing the improvement of environmental performance (a requirement of EMAS), costs incurred as a part of EMS implementation, and also the costs involved with obtaining third-party verification of the system (also mandated under EMAS).[38] As an aside, Mr. Frank Verouden of KPMG, a consulting firm, noted in late 1998:

> Companies that have not attempted any form of eco-audit must spend between 50,000 and 100,000, Euros per site before certification is received. Those that already have staff retained to address environmental issues may need to spend an extra 25,000 Euros to handle the administrative costs that compliance with EMAS standards entails.[39]

Also ranking high on the list of obstacles was technical expertise and management time. The technical expertise primarily centered on analyzing the environmental impacts of the company's operations and deciding how to best manage and improve upon them, while the management time aspect focused on training personnel at all levels involved with the EMAS.[40]

The Biondi Study further revealed that there was a fairly significant lack of environmental management skills among the SMEs. Aspects such as this made it difficult for the firms to comprehend and meet some of the EMAS requirements (such as measuring/how to measure continual improvement).[41]

A third finding of the Biondi Study was that SMEs have great difficulty in defining their environmental policies (statements) and programs. "Fixing specific environmental objectives and defining programs for achieving them is an entirely new way of operating for many SMEs . . . "[42] In other words, the SME may have the goal of becoming registered to EMAS, but may well lack the technical expertise to bring it to fruition.

As early as 1997, "In Belgium, France, and other European countries, Emas [sic] [was] losing the battle against ISO 14000", and the Italian chemical federation Federchimica " . . . reached the conclusion that ISO 14001 is the standard for its members to follow".[43]

In contrast, however, in late 1997, the number of sites registered under EMAS was increasing, albeit slowly. The one glaring exception to the hesitation among EU countries to wholly embrace EMAS was Germany. The German State of Saxony entered into an agreement with local industry that promised reduced permit application and regulatory reporting procedures for EMAS registered firms.[44]

A survey by Environmental Data Service in 1997 indicated that Germany had 825 sites registered to EMAS, representing a 39% increase since earlier that year.[45] However, by July 31, 1998 there were 1,734 sites registered to EMAS, with fully 75% of them in Germany. While this was a relatively impressive number, it must be put into the context of the 1.7 million industrial enterprises in the EU as a whole.[46]

As a contrast, Belgium had 130 sites registered to ISO 14000 in September 1999 and only 9 registered to EMAS. The gap between ISO 14000 and EMAS was narrowing by this point (5,315 to ISO 14000 and 3,005 to EMAS) however. In parallel, the UK's Chemical Industries Association had 21 sites ISO 14000 registered in early 1997, with 80 registrations pending. Of those 21 sites, approximately 33% also had EMAS certification.[47]

As a note, in 2000, the number of registrations to EMAS had reached 3,076, an 11.5% increase over 1999. Again Germany led the way with 2,124, followed by Austria, Sweden, Denmark and Spain.

SME RESOURCES

A lack of time, resources and qualified personnel are frequently cited as reasons why SMEs are financially prudent when it comes to incurring EMS costs.[48] Recognizing the unique issues which SMEs face with regard to implementing EMAS, two main supporting instruments and guides have been developed.

Networks

"One strategy of making the adoption of EMAS easier for SMEs are [sic] networks or groups of SMEs, in which a number of SMEs participate and co-operate during the process of implementation".[49] This strategy, already in place in countries such as Sweden and Germany, employs an external advisor who assists the entire group in their efforts, which reduces the overall cost of external advice. Furthermore, this cooperative effort allows all firms to share issues and concerns with one another, greatly enhancing the opportunity to have them solved at an early stage.[50]

Staged Implementation

A second strategy which may be employed by SMEs is the "staged implementation", in place in Ireland, the United Kingdom, Germany, Spain and Hungary, among others. This strategy "allows SMEs to fulfill EMAS requirements in a number of consecutive steps, but also enables them to establish less ambitious and less formal EMS".[51]

SME SUPPORT PROGRAMS

As discussed earlier, virtually all of the various Member States of the EU have developed some type of means of assistance, financial or otherwise, for SMEs who wish to pursue EMAS registration. These are as follows:

Austria

Austria has developed a website, http://www.emas.gv.at/, which "aims to increase awareness of EMAS and ease entry into the scheme for interested organisations [particularly SMEs]".[52] In addition, the Austrian Federal Environment Agency functions as the central contact point for environmental information. This information may be obtained at http://www.umweltbundesamt.at/umwelt/uvpsupemas/umweltmanagement/

Belgium

"The Brussels Enterprise Agency advises and guides at no cost every start-up, SME or foreign investor who wants to set up or develop its enterprise in the Brussels Capital Region. The Agency advises about financial support for which SMEs can apply when they are implementing an environmental management system".[53] The Enterprise Agency site may be reached at www.abe.irisnet.be.

Furthermore, the Brussels Region offers the "ecodynamic enterprise" label, discussed in the previous chapter, which is granted to both public and private organizations, rewarding them for their environmental "dynamism" and improvement in environmental fields.[54] The label is progressive, over three levels, following the same logic as EMAS or ISO 14001, and encouraging the development. Free support, such as workshops and individualized assistance, is provided to organizations wishing to implement an EMS. Further information can be found at: http://www.ibgebim.be/francais/contenu/content.asp?ref=722, or by e-mail at: ecodyn@ibgebim.be.

"In the Brussels Capital region, Public [sic] financial support [is] available for the implementation of EMAS in SMEs: [at a] max. [of] 50% of the total costs of consultancy".[55]

Contact:

Mr. Jean-Paul Rihoux
Cellule Aides à la consultance et à la formation
Administration de l'Economie et de l'Emploi
Ministère de la Région de Bruxelles-Capitale
Boulevard du Jardin Botanique, 20
BE-1035 Bruxelles
Tel: +32 2 80034 62 or 63
Fax: +32 2 80038 06
E-mail: jprihoux@mrbc.irisnet.be

Cyprus

The competent body in Cyprus should be contacted for further information on support programmes for SMEs in the country:[56]

Contact:

Ms. Eleni Stylianopoulou
Environment Officer
Ministry of Agriculture, Natural Resources and Environment of the Republic of Cyprus
Louki Akrita Avenue
Nicosia 1411
Cyprus
Tel: +357 2230 3865
Fax: +357 2277 4945
E-mail: estylianopoulou@environment.moa.gov.cy

At present, there are no specific funding programs to assist SMEs in implementing EMAS in Cyprus.

Czech Republic

The competent body in the Czech Republic should be contacted for further information on support programmes for SMEs in the country:[57]

Contact:

Ministry of the Environment of the Czech Republic
Environmental Strategy Department
Vr_ovická 65
100 10 Prague 10
Czech Republic

Ms. Dagmar Sucharovova
Tel: +420 2 6712 2784, 7274 0749
Fax: +420 2 6731 0340, 6712 2731
E-mail: dagmar_sucharovova@env.cz

EMAS Agency, Czech Environmental Institute
Koda_ská 10
Praha 10, 100 10

Mr. Pavel Ruzicka
Tel: +420 2 6722 5312
Fax: +420 2 7174 2306
E-mail: pavel.ruzicka@ceu.cz

In the framework of implementation of environmental management systems (ISO 14001 and EMAS), Czech enterprises can obtain a subsidy for introduction of EMS from three possible sources:[58]

1. The Programme of Support for Small and Medium-Sized Enterprises entitled MARKET (TRH);
2. A contribution from the State Environmental Fund (SEF);
3. Regional programmes of support.

- The MARKET Programme (Programme TRH)[59]

The MARKET Programme is a programme of support guaranteed by the Ministry of Industry and Trade in the framework of which the Czech-Moravian Guarantee and Development Bank provides financial support to small and medium-sized enterprises located in the territory of the Czech Republic, for the purposes of

- payment of interest on credit intended for acquisition of tangible or intangible investment property;
- implementation of a Quality Management System or Environmental Management System (ISO 9000, ISO 14001 and EMAS);
- acquisition of the label of accordance with the CSN TEST standard.

Conditions for obtaining the support are:

- the enterprise must meet the criteria for a small or medium-sized enterprise;
- the enterprise must not have any outstanding debts in relation to the state bodies and authorities (e.g. the tax authority);
- the project must be implemented in the territory of the Czech Republic;
- the project must have the character of industrial, construction or craft production, services, trade or public transport of a regional importance (except for taxi service);
- the certification authority must have valid accreditation for the relevant activity by the date of issuing the certificate.

CONTRIBUTION TO PAYMENT OF INTEREST[60]

This contribution can be obtained by small and medium-sized enterprises that own a certificate pursuant to ISO 9000 or ISO 14000 standards or have introduced EMAS. It applies to payment of interest on credit intended for acquisition of tangible or intangible investment property (in particular land, buildings, structures, machines and equipment, means of transport and know-how).

The contribution is provided in the amount of 5% interest on bank credit and is paid gradually in connection with paying-off the credit (with a maximum of 4 years). The total amount of the contribution may not exceed 5 mil. CZK.

CONTRIBUTION FOR ACQUISITION OF MANAGEMENT SYSTEM CERTIFICATION[61]

In the framework of the MARKET Programme, small and medium-sized enterprises can also obtain a contribution for the acquisition of a certificate pursuant to ISO 9000 or ISO 14000 standards or the introduction of EMAS. It applies to fees, payments for advisory and training activities, legal, environmental, energy and other audits connected with issuing a new certificate or introducing EMAS. The certificate is not provided for the payment of costs connected with renewal of certificates.

The contribution may be provided only after acquiring the certificate or implementing EMAS, as appropriate, and submission of documents on costs for its acquisition or introduction, as appropriate. The contribution may be provided for up to 50% of the costs; however, it may not exceed 200,000 CZK. In introduction of an integrated system pursuant to both ISO 9000 and ISO 14000 standards, this limit is increased to 300,000 CZK.

Contact:

Ministry of Industry and Trade
Na Frantiku 32
CZ-11015 Prague 1
E-mail: mpo@mpo.cz
Website: http://www.mpo.cz
Ing. Ladislav Spacek, CSc.
Department for Sustainable Development
E-mail: spacek@mpo.cz

- Contribution by SEF—State Environmental Fund[62]

In the framework of implementation of EMS/EMAS, a contribution may be provided by the State Environmental Fund for implementation and certification of

- EMS pursuant to ISO 14001;
- EMAS;
- EMS pursuant to ISO 14001 and EMAS;
- Integrated management system, QMS (pursuant to ISO 9000 standards) and EMS (pursuant to ISO 14001);
- Integrated management system, QMS (pursuant to ISO 9000 standards) and EMAS;
- Integrated management system, QMS (pursuant to ISO 9000 standards) and EMS (pursuant to ISO 14001 and EMAS).

Support is intended as a contribution to payment of costs connected with a project of implementation and certification of EMS. Successful certification is an essential

condition for a subsidy to be provided, so applicants, who want only to implement but not to certify EMS, will not be granted.

Support is provided in the form of a subsidy, that may not exceed 50% of the costs in the case of ISO 14001 and 60% in the case of EMAS. (The conditions for the provision of specific individual assistance are always laid down in the Agreement on provision of assistance.)

Criteria applied by SEF in selection of undertakings eligible for assistance are:

- specific investment costs per a unit of pollution (environmental benefit is expressed in monetary units as the degree of avoided payments for pollution);
- size of the enterprise with assignment of priorities according to size
  - 25–500 employees;
  - 0–25 employees;
- regional priorities of environmental protection

Contact:

State Environmental Fund
Kaplanova 1913/1
CZ-14800 Prague 11
Ing. Ivana Stríchlová
Department of Technology, Waste and Alternative Sources
E-mail: istrichlova@sfzp.cz
Website: http://www.sfzp.cz

Denmark

The competent body in Denmark should be contacted for further information on support programmes for SMEs in the country, although there is some information available at the Agency's website, http://www.mst.dk:[63]

Contact:

Danish Environmental Protection Agency
Industrial Division
Strandgade 29
DK-1401 Copenhagen K

Ms. Ulla Ringbaek
Mr. Morten Gammelgaard Nielsen
Tel: +45 3266 0100
Fax: +45 3266 0479
E-mail: emas@mst.dk

At present, there are no specific funding programs to assist SMEs in implementing EMAS in Denmark.

Estonia

The competent body in Estonia should be contacted for further information on support programmes for SMEs in the country:[64]

Contact:

Estonian Environment Information Centre
Mustamäe tee 33
EE10616 Tallinn
Estonia

Ms. Katre Liiv
Tel: +372 673 7570
Fax: +372 673 7571
E-mail: katre.liiv@ic.envir.ee

Ms. Tiia Laurend
Tel: +372 673 7581
Fax: +372 673 7571
E-mail: tiaa.laurend@ic.envir.ee

At present, there are no specific funding programs to assist SMEs in implementing EMAS in Estonia.

Finland

Various projects have been carried out to help SMEs develop their environmental management systems. Most of these projects have been partly funded by European Union structural funds. The main objective of these projects have been to strengthen employment, improve employee skills, expand the regional industrial base, and improve the competitiveness of SMEs either nationally or internationally.[65]

The SME portion of the country's EMAS website can be viewed at http://www.ymparisto.fi/.

Contact:

Ministry of the Environment
Visiting address: Kasarmikatu 25, Helsinki
Postal address: P.O. BOX 35, 00023 Government, Finland
Tel: +358 9 160 07
Fax: +358 9 1603 954

At present, there are no specific funding programs to assist SMEs in implementing EMAS in Finland.

France

The competent body in France should be contacted for further information on support programmes for SMEs in the country. The contact information for Le Portail des Chambres de Commerce et d'Industrie may be found at: http://www.entreprise. cci.fr/Groups/thematiques/Vie_Entreprise/Developper_son_entreprise/Manager_environnement/thematique_front_viewSPANIN%0d.[66]

This site also contains information on financing programs available to SMEs who implement EMAS.

Germany

The Staatsministerium für Landesentwicklung und Umweltfrager should be contacted for further information on support programmes for SMEs in the country. The contact information for the Staatsministerium may be found at: http://www.umweltministerium.bayern.de/agenda/wirtsch/wirtsch.htm.

Within Germany, the various länders are responsible for individualized promotion of the EMAS program, which includes provisions, where applicable, for SME financing resources. Further information on this topic, for the various länders, can be obtained by contacting:[67]

Contact:

Bundesministerium für Umwelt,
Naturschutz und Reaktorsicherheit
Referat Öffentlichkeitsarbeit
D-11055 Berlin
E-mail: service@bmu.bund.de
Website: http://www.bmu.de

Greece

The competent body in Greece should be contacted for further information on support programmes for SMEs in the country. The contact information is:[68]

Contact:

Ministry for the Environment, Physical Planning and Public Works
Department of International Relations and the EU
15, Amaliados Street
GR-115 24 Athens

Ms. Eleni Ioannidou
Tel: +30 210 646 5762
Fax: +30 210 643 4470
E-mail: e.ioannidou@minenv.gov

At present, there are no specific funding programs to assist SMEs in implementing EMAS in Greece.

Hungary

The competent body in Hungary should be contacted for further information on support programmes for SMEs in the country:[69]

Contact:

Directorate General for Environment, Nature Protection and Water Management
Department for Integrated Pollution Prevention and Environmental Assessment
H-1113 Budapest, Aga utca 4
Hungary

Ildiko Babcsanyi
Zsolt Molnar
Tel: +36 1 209 1000
E-mail: babcsany@kgi.ktm.hu
E-mail: molnar.szolt@kgi.ktm.hu

At present, there are no specific funding programs to assist SMEs in implementing EMAS in Hungary.

Ireland

"Enterprise Ireland offer [sic] financial support toward the costs of engaging independent consultant [sic] to install a certified EMS to ISO 14001 or EMAS for the Irish industry and foreigners investing in Ireland".[70]

A new free environmental information portal from Enterprise Ireland, designed specifically to enhance environmental awareness in Irish industry, with particular emphasis on small and medium enterprises (SMEs). Envirocentre's aim is to improve your business through the environment and to assist Irish companies to increase profitability and competitiveness through improved environmental performance and/or the development of products or services related to environmental protection.[71] Envirocentre's web site can be viewed at: http://www.envirocentre.ie/.

In addition, Ireland has established the "Cleaner Greener Production Programme" which encourages SMEs in particular to adopt a high standard of environmental practices. This is accomplished by:

> . . . adapting or improving business practices in order to minimise negative impact on the environment. There is financial support for investigating prevention opportunities, staff training, capital investment and publicity activities—if related to cleaner greener production. Participating companies will have the opportunity to exchange their experiences in workshops and training sessions with the other participants. Successful projects will be publicised, enhancing the reputation of the participants.[72]

Enterprise Ireland's Environment Unit provides financial supports to improve the environmental performance of industry. Two financial support initiatives are currently available.[73]

- Environmental Management Systems (EMS): Grant Scheme

Under this initiative suitable applicants may receive grant support toward the costs of engaging independent consultants to install, in full or in part, a certified Environmental Management System (EMS) to ISO 14001 or the EU 'Eco-Management and Audit Scheme' (EMAS) standard.

The initiative is aimed at improving the strategic capability of SMEs in the management of their environmental issues and to develop and exploit the market opportunities that improved environmental performance can provide.

Contact:

Mr. Liam Curran
Enterprise Ireland
Town Centre
Shannon
Co. Clare
Tel: +353 61 361499
Fax: +353 61 361979
E-mail: liam.curran@enterprise-ireland.com

Italy

The following authority should be contacted concerning support for SMEs in Italy:

Contact:

ANPA-Unità di supporto EMAS
Responsabile Ing. Rocco Ielasi
Via Vitaliano Brancati, 48-00144 Roma
Tel: 06/50072066
Fax: 06/50072078
E-mail: emas@anpa.it

Comitato Ecolabel e Ecoaudit
Sezione EMAS Italia
c/o ANPA-Via Vitaliano Brancati, 48-00144 Roma
Segreteria
Tel: 06/50072578
E-mail: ecocom@anpa.it

At present, there are no specific funding programs to assist SMEs in implementing EMAS in Italy.

Latvia

The competent body in Latvia should be contacted concerning support for SMEs in the country:

Contact:

Environmental Impact Assessment Bureau
23 Rupniecibas Street
LV-1045 Riga
Ms. Iveta Jegere
Tel.: +371 7770818
Fax: +371 7321049
E-mail: iveta.jegere@ivn.gov.lv

At present, there are no specific funding programs to assist SMEs in implementing EMAS in Latvia.

Lithuania

The competent body in Lithuania should be contacted concerning support for SMEs in the country:

Contact:

Environmental Protection Agency
Vilnius
Ms. Maryte Kuodyte
E-mail: marte.kuodyte@gamta.lt

At present, there are no specific funding programs to assist SMEs in implementing EMAS in Lithuania.

Luxembourg

The competent body in Luxembourg should be contacted concerning support for SMEs in the country:

Contact:

Ministère de l'Environnement
18, Montée de la Petrusse
L-2918 Luxembourg
Website: http://www.environnement.public.lu/guichet_virtuel/emas/
Mr. Henri Haine
Tel: +352 478 6816
Fax: +352 4004 10
E-mail: henri.haine@mev.etat.lu

At present, there are no specific funding programs to assist SMEs in implementing EMAS in Luxembourg.

Malta

The competent body in Malta should be contacted concerning support for SMEs in the country:

Contact:

Malta Standards Authority
Evans Building, Floor 2
Merchants Street
Valletta
Malta VLT 03
Ing. Francis E. Farrugia
EMAS/EUEB Co-coordinator
Tel: +356 21242413
Fax: +356 21242406
E-mail: fefarr@msa.org.mt

At present, there are no specific funding programs to assist SMEs in implementing EMAS in Malta.

The Netherlands

The competent body in The Netherlands should be contacted concerning support for SMEs in the country:

Contact:

SCCM
Postbus 18505
NL-2502 EM Den Haag
Website: http://www.sccm.nl
Mr. Frans Stuyt
Tel: +31 70362 3981
Fax: +31 70363 5084
E-mail: f.w.stuyt@sccm.nl

At present, there are no specific funding programs to assist SMEs in implementing EMAS in The Netherlands.

Norway

Within Norway, the Norwegian Pollution Control Authority (SFT), located under the Ministry of the Environment, has been delegated the goal of promoting sustainable

development. The SFT may be reached via www.sft.no, or at:

Contact:

Norwegian Pollution Control Authority (SFT)
PO Box 8100
Dep NO-0032
Oslo, Norway
Phone: +47 22 57 34 00
Fax: +47 67 67 06
E-mail: postmottak@sft.no

"Norway reduces the control/inspection fee for the facilities that have EMAS or ISO 14001, by 50%. Norway does not offer other financial support".[74]

Poland

The competent body in Poland should be contacted concerning support for SMEs in the country:

Contact:

Ministry of the Environment
52/54 Wawelska Street
00-922 Warsaw, Poland
Ms. Anna Kicinska
Tel.: +48 22 579 2642
Fax: +48 22 579 2795
E-mail: anna.kicinska@mos.gov.pl

At present, there are no specific funding programs to assist SMEs in implementing EMAS in Poland.

Portugal

The Direccau Geral do Ambiente is responsible for the coordination of SME resources related to EMAS in the country. The Direccau can be reached via the internet at http://www.iambiente.pt/, or:

Contact:

Instituto do Ambiente
Rua da Murgueira 9/9A
2610-124 Amadora
Tel: +21 472 82 00
Fax: +21 471 90 94

> Portuguese law no 687/2000, of 31/08/2000, provides companies the possibility of making contracts of continual improvement of environmental performance, which provide the companies financial benefits from the government, under an Economy Operational Program. The aim of this law was to implement an Incentive System in order to modernize SMEs' performance. This law establishes that the organisations have to comply all the legal requirements for their activity, for instance their licensing situation must be in accordance with the specific legal requirements.[75]

The EMAS companies will have more 5% [sic] financial benefits than those with ISO 14001, it means that the organisations with ISO 14001 that want to reach EMAS will receive 5% more of financial support.[76]

There are already contracts with:

- Glass packing industry—these companies have the commitment to be registered to EMAS by 2003.
- Cement industry—these companies have the commitment to be registered to EMAS by 2004.
- Transport sector (involving 30 companies)—these companies have the commitment to be registered to EMAS by 2006.[77]

Slovak Republic

The competent body in the Slovak Republic should be contacted concerning support for SMEs in the country:

Contact:

Slovak Environment Agency
Department of Environmental Management
Pazitna 82
917 01 Trnava
Slovak Republic

Mr. Andrej Rácik
Tel./Fax: +421 33 5907 813
E-mail: racik@sazp.sk

The Slovak Republic does offer some financial assistance to SMEs: The Scheme is designated to support[78]

- purchase of innovative technologies—up to 60%/3.5 mil. SKK
- external consultation and training (implementation of QMS, EMS and 'other standards')—up to 50%/100,000 SKK
- external certification process—up to 50%/120,000 SKK

The following sectors, however, are prohibited from obtaining financial EMAS assistance:

- agriculture,
- fishing,
- water management,
- transport,
- steel industry,
- and some others.

Contacts:

Ministry of Economic Affairs
National Agency for Development of SMEs
Tel: +421 2 5341 7328/7333
Fax: +421 2 5341 7339
E-mail: agency@nadsme.sk
Website: http://www.nadsme.sk

Slovenia

The competent body in Slovenia should be contacted concerning support for SMEs in the country:

Contact:

Ministry of the Environment, Spatial Planning and Energy
Dunajska 48
SI-1000 Ljubljana
Slovenia
Dr. Samo Kopac
Tel: +386 1 478 7302
Fax: +386 1 478 7425
E-mail: Samo.Kopac@gov.si

The European Investment Bank granted to Nova Ljubljanska banka a credit line amounting to 100 million EUR . . . which will serve for financing of SMEs and projects in the field of environmental protection, infrastructure, health, education and rational use of energy.[79]

Contact:

Nova Ljubljanska banka d.d.
Trg republike 2
1520 Ljubljana, Slovenia
Tel: +386 1 425 0155
Fax: +386 1 425 0331
E-mail: info@nlb.si
Website: http://www.nlb.si

Spain

Spain is perhaps unique among the EU 25 in the sheer amount of information and resources which it provides relative to SMEs. Non-financial support to SMEs is managed by IHOBE, "a publicly owned environmental management agency, i.e. the Environmental Performance Agency of the Basque Government".[80] IHOBE may be contacted via the internet at http://www.ihobe.net/.

Contact:

Environmental Performance Agency of the Basque Government
Ingurumen Jarduketarako Sozietate Publikoa
Sociedad Pública de Gestión Ambiental
IHOBE
Ibánez de Bilbao 28-8° planta
48009 Bilbao
Spain
Tel: +34 94 423 0743
Fax: +34 94 423 5900
E-mail: info@ihobe.net

The EMAS competent body in Madrid has offered financial support, since 1999, to SMEs implementing EMS. At present, the body finances up to 100% for EMAS implementations, giving priority to EMAS over ISO 14001 in funding provision. Organizations which have implemented EMAS are exempt from legal requirements such as waste legislation, among others, and may receive preference in earning public contracts.[81]

Contact:

Ms. Silvia Gonzalez Lopez
DG de Promocion y Disciplina Ambiental
Consejeria de Medio Ambiente
Princesa 3, 2 planta
E-28008 Madrid
Tel: +34 91 580 1649
Fax: +34 91 420 6682
E-mail: silvia.gonzalez@madrid.org
Website: http://www.madrid.org

Sweden

The programme 'On the way to EMAS with ISO 14000' was developed to support and facilitate the implementation of EMS in SME's [sic] and organisations in the private and public sector by providing information about and present those companies and organisations participating in the programme through an official register on the Internet and to give a summary of the results of their work.[82]

Further information, can be obtained at the Environmental Management Market website: http://www.environmarket.com/pvme/pvme_info.asp.

At present, there are no specific funding programs to assist SMEs in implementing EMAS in Sweden.

United Kingdom

The UK offers quite a bit of information and resources with specific regard to the United Kingdom.

The EMAS organization in the UK should be contacted concerning support for SMEs in the country. Information can be obtained from the following website: http://www.emas.org.uk/.

At present, there are no specific funding programs to assist SMEs in implementing EMAS in the United Kingdom.

The final chapter of this text will examine the future directions of the EMAS program within the European Union, including suggestions and opportunities for further improvement and development of the program, given the evolutions which the Scheme has gone through since its inception almost 10 years ago.

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CHAPTER 7

EVALUATION AND DISCUSSION OF THE CURRENT STATE OF EMAS, WITH A LOOK TOWARD THE FUTURE OF THE SCHEME

"Changing paradigms is only done effectively by providing experiences to people".
—Doug Englebart

Prior to the fall of the Berlin Wall in 1989, which was a watershed moment in the beginnings of political change in the region, the former members of the Communist bloc countries had given little thought to environmental protection within their borders. "The East Europeans. . . are virtually unanimous in the opinion that the command method of rule, or what East Europeans commonly call 'real socialism' was the root cause of the environmental problems of their country".[1]

Perhaps due in large part to the repressive political history of many of these countries, it has been noted that there is a significant lack of knowledge and skill sets with respect to environmental management.[2] Citizens of these countries have perhaps tended to be unaware of the significant health risks which arise as part of the environmental problems inherent in their countries. As Gower and Redmond have noted, with respect to the 10 members who joined the Union on 01 May 2004:

> Environmental policy is a major challenge for the candidates. While the adoption of the Union's environmental rules and standards is essential, none of the candidate countries can be expected to comply fully with the *acquis* [the developed bodies of laws] in the near future, given their present environmental problems and the need for massive investments.[3]

Until these items are made as significant as possible at all levels of public and governmental awareness, they will remain considerably lower on the political and social agendas.[4]

The road to the European Union for the 10 new Member States has been a contentious one, with significant negotiation and occasionally even confrontation at various levels of government.

Conceptually, the EU roughly doubled in size, adding over 100 million new citizens. Fraser Cameron has asserted that the enlarged EU will carry more weight on the global stage, as the Single Market is extended to just under 500 million consumers, which will increase economic growth and give new opportunities to businesses in the EU.[5]

From a business perspective, five key changes took place in the EU on 01 May 2004:[6]

1. Customs and other border formalities [were] swept away, giving companies from new member states unfettered access to Europe's single market;

2. Last restrictions on agricultural exports to the existing European Union member companies [were] abolished, opening up fresh markets for farmers from the new countries;
3. Citizens of the 10 new member states [were] free to travel throughout the EU using just their identity cards rather than passports. They [are] allowed to pass through speedy EU channels at border crossings;
4. New members [may] send their own European Commissioners to Brussels for the first time, getting a direct influence on policymaking;
5. More EU funds [became] available to new members for infrastructure projects, environmental improvements, and schemes designed to increase competitiveness.

In the past, countries joining the EU have been broadly similar to the existing membership, in terms of criteria such as per capita income, human rights issues, environmental protection regulations, etc. Most of the countries which joined on 01 May are very different: they do not have a recent history of Western-style democracy; they lack the bureaucracies and organizational systems to carry out the obligations of EU membership; they are poor, economically weak and in the process of economic transition.[7]

> Recall that the Treaty of Rome (1957) specifically stated that the Member States signing the document were "determined to lay the foundations of an ever closer union among the peoples of Europe".[8] In June 1993, the European Council, meeting in Copenhagen, reached the consensus that countries in Eastern and Central Europe who wished to become members of the EU would be permitted to do so. The "Copenhagen Conditions" set out specific metrics for candidate countries to attain, in order to be admitted to the Union.

The requirements for membership in the EU, as set out June 1993 by the Copenhagen European Council, were as follows:[9]

1. That the candidate country has achieved stability of institutions guaranteeing democracy, the rule of law, human rights and respect for the protection of minorities;
2. The existence of a functioning market economy, as well as the capacity to cope with competitive pressure and market forces within the Union;
3. The ability to take on the obligations of membership, including adherence to the aims of political, economic and monetary union.

In July of 1997, the Intergovernmental Conference issued its opinion on the readiness of the various applicant countries. "It suggested that, along with Cyprus, five of the CCEE [Countries of Central and Eastern Europe] satisfied the criteria for the opening of negotiations: the Czech Republic, Estonia, Hungary, Poland and Slovenia".[10]

An inherent difficulty to the ascension of new countries to the EU has its roots in the Treaty of Rome. As discussed earlier, the Treaty set forth a system designed for only the initial six countries. The future size of the Commission and the Parliament could grow to unmanageable proportions, unless an amended structure is created.[11] As recently as 2000, Gower noted that "The EU already has behind it the experience of

no less than eleven successfully concluded accession negotiations, which have led to nine accessions that have taken place in four successive waves of enlargement".[12] In addition, none of the candidate countries "will be net contributors to the EU budget", due to their relatively small size.[13] Recall also from earlier in the text that "The EU seeks to achieve harmonization of environmental regulation in order to eliminate any trade distorting effects".[14]

On 15 July 1997, the Commission presented to the Council and the European Parliament "Agenda 2000: for a Stronger and Wider Union" ("Agenda 2000"). On 30 March 1998, an ascension process, which involved the ten candidate countries, was begun, culminating in the 01 May 2004 membership ceremony.

As of the date of publication, the European Union's Eco-Management and Audit Scheme is rapidly approaching 10 years old in its implementation, and exceeds that period in terms of its initial conception and discussion. The Scheme itself has already gone through one revision, resulting in EMAS II in 2001. As we look toward the future, many organizations, rightly so, are examining the benefits which the program offers, as well as taking into account its inherent limitations—such as that the program is only applicable within the European Union.

In order to adequately examine the future of the Scheme, we should first examine the trending in registrations which has occurred since the Scheme has been implemented (Figure 1).

As the data clearly illustrates, the EMAS program experienced strong initial success, increasing the number of registered sites by a factor of 7× between 1995 and 1996, a factor of almost 3× between 1996 and 1997, and almost doubling again between 1997 and 1998. The number of organizations registered under EMAS peaked in 2001, before beginning a slow, but steady, decline which continues to the present.

Several ideas have been advanced to explain this almost "normal distribution" curve for the registrations. Foremost, and perhaps the most common, is that when EMAS

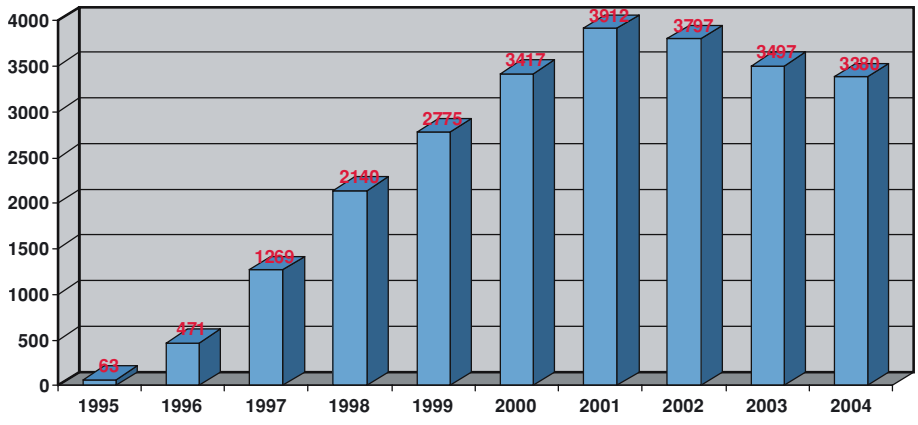

Figure 1. EMAS Registration Trends, 1995–2004 (YTD).

was introduced in 1995, ISO 14000 did not exist: that program came into place—effectively—in 1996. As a result, EMAS had essentially a captive market in the EU. Granted, there were various individual Member States' standards, such as BS 7750, but they were just that—individualistic. There was no overarching program which would essentially level the environmental (auditing) playing field for all Member States.

When ISO 14000 was introduced, understandably, there was a growth period which resulted as organizations examined the new standard and began to implement it. This trend continued for some time, and began to pick up speed in the later 1990s and early into this century. It has been postulated that the reason for the relatively rapid growth of ISO 14000, both compared to EMAS and as a stand-alone standard, is due in large part to the global applicability and recognition of the ISO standard. Unlike EMAS, ISO 14000 is not limited to any particular country or geographic region or industry sector. The American Chemistry Council's (ACC) Responsible Care Program, in its initial form, was limited—essentially—only to (1) chemical companies who (2) were members of the ACC. While the Program was extremely ambitious in its scope, requiring for example that all companies undertaking it (which the ACC mandated that all of its member organizations must do) implement such programs as Community Awareness and Emergency Response, Product Stewardship (programs) and so forth, it was very limited in scope. This is perhaps part of the reason that, at press time, the ACC is in the progress of re-examining the Responsible Care program, with an eye toward some significant changes.

As ISO 14000 grew in popularity, many organizations—seeing the apparent dovetailing between it and EMAS, made the business decision to follow the ISO standard, especially if the firms were multinational in scope. In addition, with the publication of 761/2001, which allowed firms who were already registered to ISO 14000 to apply a large portion of that effort toward the EMAS program, EMAS registrations became somewhat secondary in the organization's eyes. From their points of view, the international standard was the one to pursue. Granted, EMAS could be achieved with relatively little additional cost and effort, but especially in a declining economy, budgets were being tightened and little extra monies were available for such things. As such, EMAS began its downturn.

Why then, one may reasonably ask, are there still almost 3,400 firms with EMAS registrations? Four prime reasons jump to the forefront in this regard. First, a large portion of these registrations may be several years old. Having invested the time, money and personnel resources in establishing EMAS, firms may be reluctant to cast it aside. Secondly, if the Scheme is "working", in that it has helped organizations stay within their permit requirements, has engendered goodwill between the authorities and the firm, or has helped the organization earn a high degree of public opinion, trust or confidence, it may be to their business advantage to retain the Scheme. Third, in an economy which has been in a downturn for the early years of this century, firms—as previously discussed—may be reluctant to spend the extra time and resources on another environmental management scheme, such as ISO 14000, irrespective of how well-known it might be. Finally, of the 3,380 firms registered to EMAS as of the date of publication, 2,218 of them, or approximately 66%, are German. As noted earlier,

Germans collectively have a very strong commitment to and appreciation of the natural environment. It is highly conceivable, although it will not be examined here, that the decline in registered organizations is occurring primarily outside of the German firms, which is why the decline is relatively slow—only about 15% from the peak number of registrations in 2001.

Where, then, is the future of EMAS? For an opinion on that, we must examine two central areas: the efficacy of environmental statements (which are the prime focus of EMAS), and also EMAS' interrelation with ISO 14001.

EFFICACY OF ENVIRONMENTAL STATEMENTS

Jürgen Freimann (1997) has postulated that voluntary environmental statements are essentially a part of corporate public relations, in that the firms which decide to publish them are able to effectively "massage" the data released.[15] "They allow room for the company making a report to do so according to their attitude towards environmental protection and its importance for corporate policy".[16] Conversely, since the content and structure of a mandatory environmental statement is determined by legal standards, the data included is necessarily more "refined" and more carefully vetted.

As of the date of publication, the member bodies of the ISO Technical Committee 207 are preparing a new document, ISO 14063, known as "Environmental Management—Environmental Communications—Guidelines and Examples", which is slated for release in 2005. Begun in July 2001 in Kuala Lumpur, ISO 14063 is being designed to give companies specific examples on how to communicate to various stakeholders and interested parties the information contained in their EMS. According to W. Gary Wilson of the United States, part of the group working to draft the document, "We're trying to write a standard that says if you need to communicate on your environmental issues, this is a way to go about doing it".[17] Wilson goes on to note that ISO 14063 will be designed to meet the needs of SMEs as well: ". . . there are also other things that are environmental communication [aside from reports]. It could be open houses. It could be plant tours. It could be posters. It could be a help desk. It's an almost endless list open to the imagination of the company".[18]

Experts believe that ISO 14063 is necessary because of the disproportionate amount of environmental communications coming from large firms. Existing models which have gained prominence, such as the Global Reporting Initiative (GRI), have been somewhat discounted because they are directed toward large multinational companies established in developed nations.[19] In addition, it is perceived that the GRI approach is much more proscriptive than perhaps it needs to be, and therefore does not allow for flexibility for SMEs. According to Paul Scott, "The GRI aims to set a flexible framework for reporting and to set the scene for various degrees of sophistication according to the extent a company wishes to adopt the guidelines".[20]

In sum, while environmental statements are a central part of EMAS, some organizations and others doubt their efficacy. They are viewed by some simply as grandiose public relations material, which have very little practical value. While certainly not

completely the case, there is a valid argument to be made in this regard. As we have seen earlier, continual improvement is required by the standard, but the scale (i.e. timeframe and amount) is not adequately addressed. Thus, an organization might commit to prevention of pollution, while being considerably outside of their permit limitations. They must work toward compliance, and ultimately be in compliance with the permit, but the scale is somewhat "negotiable" between the organization and the verifier. Therefore, the environmental statement may be misleading. However, generally speaking, such is the exception rather than the norm.

EMAS VS. ISO 14001

This is, so to speak, the "$64,000 question": which environmental management program is "better"—EMAS or ISO 14001? Depending upon whom one asks, the replies will understandably vary. However, there are some definitive and objective thoughts on the issue.

IRIS 2000 finds that "EMAS registered companies seem to achieve a better environmental performance than companies with only ISO 14001".[21] In that study, it was also revealed that "EMAS firms achieved on average 80% results, while 'ISO-only' firms achieved only 57%", where "results" were defined as a defined set of responses on an assessment parameter test.[22]

Another concern in the "EMAS v. ISO 14001" issue is the costs involved with the programs:

> But some companies still do not strive for EMAS. The most common reason stated for not registering for EMAS is cost. . . . The reason for fearing high EMAS cost might well be based on reporting cost which, according to BMU/UBA 1999, accounts for about 19% of the total implementation cost.[23]

This aspect has been addressed several times elsewhere in the text, and as such will not be comment on further here.

A third concern in the "contest" between the two programs is the aspects which each contain. According to Hillary (1999), "the environmental statement 'frightens SMEs', who in general have no reporting practice in other fields".[24] That is, such firms look at the depth and breadth of information which they are required to provide—and make publicly available—in the environmental statement, and many decide that the end [EMAS registration] simply does not justify the means [steps taken to develop the data and achieve registration].

Recall that EMAS requires the publication of an environmental statement, which ISO 14000 does not. In addition, compliance with applicable environmental regulations is mandatory within the Scheme. Neither of these two aspects are technically part of the ISO program. Organizations, as has been discussed earlier, may elect not to pursue EMAS because of these two additional items. With respect to the former, firms may not want their organizations, for whatever reason, exposed to the level of public scrutiny which the environmental statement provides. Regarding the later, it is theoretically

possible that, under ISO 14000, a firm might be out of compliance with an environmental regulation—such as an air permit limitation—and the responsible authorities may not be aware of it. Under EMAS, this would be revealed, either during an internal audit or during an external verification audit, and would be required to be rectified. ISO 14000 does not specifically require the compliance aspect, and firms may determine that this facet is to their advantage.

Erskine and Collins also postulate that most consumers are doubtful that industry is being wholly forthcoming when it presents its environmental reports to the public, and therefore it is critical to use an independently-verified third party scheme, such as EMAS, to enhance this credibility.

The fourth concern when choosing between the two standards is the proverbial 800 pound gorilla: the fact that EMAS is only applicable within the EU, while ISO 14001 is a global standard. This would seem to be an insurmountable hurdle for EMAS, for a firm which has any sort of substantial operation outside of the EU. Interestingly, however, a 1999 study seems to refute this thinking. "The geographical limitation of EMAS to the EU seems to have been of *no real importance* for deciding against EMAS [emphasis added]. The degree of globalization (outside EU) of firms did not vary between the EMAS and ISO 14001 groups".[25] However, bear in mind that this statement was made a mere 3 years after the introduction of ISO 14000. EMAS had a 1 year (in application) and 3 year (in concept) advantage on the ISO system, so it is reasonable to assume that there was a "ramping up" time for the ISO program, during which time EMAS enjoyed an advantage. If this same study was conducted in 2001 or even 2002, the results and opinions might be markedly different.

"A final concern when selecting either EMAS or ISO 14001 is the 'fear of de-registration for minor breaches of legislation', which makes EMAS an unattractive proposition for many firms".[26] Recall the instance cited in an earlier chapter where Bradford, UK chemical company AH Marks had their EMAS registration revoked by the UK Environment Agency for a solvent release. While steps may be taken to regain the certification (in general), at least for a period of time the certification is revoked by the authorities.

FUTURE DIRECTIONS FOR EMAS

As of late 1995, countries outside of Europe were beginning to show interest in the EMAS system, particularly Asian countries such as Japan and Korea.[27] However, while EMAS is gaining in some countries of the world, it is losing ground in parts of the main area in which it was created—Europe.

As an example, Demark-based Coloplast, a medical device and medical care products company, announced on 25 November 2003 that it was standardizing its environmental management system globally.[28] As a result, even though the firm is located in an EU Member State, it would actually be dropping the EMAS program. Approximately 98% of Coloplast's operations are outside of Denmark, which was a major factor in the decision. Coloplast stated in a press release that "Since 1997 Coloplast's Danish

sites have held ISO 14001 environmental certificates. In addition, the sites have, since 1998, held approval under EMAS, the European Eco-Management and Audit System. Coloplast now leaves the EMAS system".[29] Among other reasons, Coloplast stated that moving to ISO 14001 from EMAS allowed a focusing of resources on one more widely recognized system, instead of the two previously maintained. "According to plan, all Coloplast manufacturing sites will by 2006 have obtained certification according to the ISO 14001 standard for the environment. . . ".[30]

Jørgen Fischer Ravn, Corporate Environmental Manager for the firm, has said that the company has no significant financial or market pressure to retain EMAS.[31] "Germany is the main market for EMAS. Our German subsidiary, however, said it makes no difference whether we use 14001 or EMAS in our communications with our customers".[32] Furthermore, although Ravn acknowledges that Denmark provides a 50% reduction in regulatory fees for EMAS registered firms (see Chapter 6), this would amount to only about $8,000 USD for all of Coloplast's facilities (approximately € 6,300), or 0.008% on 2002 revenue.

Ravn also noted that, in the view of Coloplast, the environmental statement, one of the few aspects of EMAS that does not correspond to ISO 14001, did not address a *specific* stakeholder *need* [emphasis mine]. "With the environmental statement, we didn't care actually [if the statement met a stakeholder need or not]. We just wrote the statement to live up to the EMAS requirements".[33] As an aside, at the time of publication, the ISO 14063 guideline is expected to provide information about corporate environmental communications.

Ravn gives voice to a theme which is becoming increasingly more vocal, not just through EMAS, but through ISO 14001 and beyond as well: the idea that an eco-management system is only as beneficial as the "flesh" (specifics) put on the "skeleton" (the program). The United Kingdom Accreditation Service (UKAS) has announced that it will begin reviewing competencies and performances for environmental management systems verification firms.[34] The UKAS has acknowledged that environmental stakeholders are striving to increase the prominence which legal compliance and environmental protection are given under ISO 14001 and EMAS.[35] Roger Brockway, external affairs director for UKAS, has recently noted that "[a certified EMS] is a reasonably expensive tool which isn't being used as well as it should be".[36]

Another question which arose early on in the implementation of the system, and which continues to be a topic of discussion today is whether EMAS functions as a barrier to trade internally or externally to the EU in any manner. Initially, it was believed that "EU customers could ask their non-EU suppliers to satisfy EMAS requirements in the full knowledge that they were ill-equipped to do so. This could result in such suppliers being dropped from the supply chain, as has happened with the ISO 9000 series".[37] However, standardization firms such as BSI and CEN have argued that EMAS was (and is) a voluntary scheme, so there is no reason for firms outside the EU not to implement something similar.[38] In other words, external EU firms are not precluded from establishing an EMAS-type program, so any trade barriers which may be perceived exist only in the mind of the companies citing them. In addition, the two firms have postulated that since EMAS is site-specific in its registration aspect, it would not

necessitate an EMAS registered firm from breaking-off a relationship with an existing (non-EMAS registered) supplier. Such decisions are generally taken at the corporate level, so the registration of a few sites to EMAS would be expected to have little impact.

In spite of its perceived shortcomings, the EMAS program is clearly still a viable entity, filling a niche in the environmental protection arena that no other formal and independent auditing program does. In this regard, Ms. Catherine Day, Director-General, DG Environment, European Commission, has recently cited a major success of the EMAS program to date: the extension of EMAS to new sectors, such as public administrations, health and social services, education, tourism, wholesale and retail, among others. As of mid-2003, over 500 registrations had taken place in the public services sector, encompassing public administrations, health and social services, and education.[39]

On 16 October 2003, TOROC, the Turin Olympic Organizing Committee, presented the first environmental report relating to the 2006 Winter Olympic Games in Torino, Italy.[40] Prior to the Games, TOROC established the "Environmental Strategic Evaluation". TOROC is attempting to earn the ISO 14001 and EMAS certifications before 2005, thereby becoming the first Olympic Games organizing committee to do so.[41]

While EMAS is still a viable entity, organizations and corporations are continually reevaluating their individual environmental compliance strategies, focusing on the most effective way to achieve their agreed-upon goals and targets, but continually reexamining the vehicles and means by which to reach them.

> Corporate environmental strategies are increasingly widely used, but there is plenty of room for the further development and implementation of environmental measures. The paper industry [as an example] is evidently concerned about its environmental image and is anxious to project a favorable image to stakeholders. . . The use of company-specific environmental management systems is also likely to increase over the next couple of years, especially now that an international standard (ISO 14000) [exists] and companies are showing considerable support for such systems.[42]

Article 15 of 761/2001 requires the Commission to ". . . review EMAS in the light of the experience gained during its operation and international developments no later than five years after the entry into force . . . and shall, if necessary, propose to the European Parliament and Council the appropriate amendments".[43] In addition, the Commission shall evaluate, along with the various Member States, the "use, recognition and interpretation . . . of the EMAS logo", and determine if such must be either revised or have its use reexamined.[44] Only Annex V, "Accreditation, Supervision and Function of the Environmental Verifiers", is precluded from such a review.[45] This review is scheduled to take place in 2006.

At that time, it will be open for discussion as to whether the European Union's Eco-Management and Audit Scheme has adequately fulfilled the goals under which it was established, in 1993/1995, and of the revisions and amendments in 2001. Whether the Scheme will survive, either in its present, or in some other, form, or will be discarded entirely will be determined by a variety of parties and interest groups, from all sides of the "EMAS efficacy debate". However, one aspect of EMAS remains paramount:

it has functioned as a revolutionary, and often controversial, means of environmental compliance auditing for the better part of a decade. Whether that functioning has been a hindrance to corporate environmental policy and business management, or a boon to the global environmental protection arena, will undoubtedly be debated for many years to come.

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APPENDIX A

LIST OF COMPETENT BODIES[1]

Competent Bodies are responsible for the registration of EMAS organisations

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Note: The Environment service of French Federation of Chambers of Commerce (ACFCI) ensures the follow-up of the demands and the maintenance of the French register of EMAS organisations.

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Website: http://www.sinanet.apat.it/certificazioni

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NOTE

1. *Competent Bodies*. Retrieved 11 August 2004 from http://www.europa.eu.int/comm/environment/emas/tools/contacts/competent_en.htm

APPENDIX B

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NOTE

1. *EU register of EMAS accredited verifiers*. Retrieved 11 August 2004 from http://www.europa.eu.int/comm/environment/emas/tools/contacts/verifiers_en.htm

About the Author

Michael Wenk is the Manager of Regulatory Affairs for Eka Chemicals North America, a sub-business unit of Akzo Nobel's Chemicals group., in Atlanta, GA. Mr. Wenk focuses on compliance issues related to the firm's North and South American operations, with special emphasis on the Toxic Substance Control Act (TSCA), The Canadian Environmental Protection Act's (CEPA), New Substances Notification (NSN) regulations, and the Food and Drug Administration's (FDA) Food Contact regulations.

Mr. Wenk received his B.S. in Human Ecology from Rutgers University, and his M.S. in Environmental Science from the New Jersey Institute of Technology. He is currently pursuing his MBA degree at the University of Maryland.

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