



European Commission



Enterprise Directorate-General

**PUBLIC POLICY INITIATIVES TO PROMOTE THE  
UPTAKE OF ENVIRONMENTAL MANAGEMENT SYSTEMS  
IN SMALL AND MEDIUM-SIZED ENTERPRISES**

**FINAL REPORT OF THE BEST PROJECT EXPERT GROUP**

**JANUARY 2004**

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## LEGAL NOTICE

This report is the result of a project carried out under the “Best Procedure” of the Enterprise Directorate-General of the European Commission. The project has been conducted with experts in the field of environmental management systems and SMEs nominated by national authorities.

Although the work has been carried out under the guidance of Commission officials, the views expressed in this document do not necessarily represent the opinion of the European Commission.

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Further information:

European Commission  
Enterprise Directorate-General  
Unit E.1 “Environmental Aspects of Enterprise Policy”  
B-1049 Brussels, Belgium  
Fax: +32-2-2991925  
E-mail: [Entr-Environment-Aspects@cec.eu.int](mailto:Entr-Environment-Aspects@cec.eu.int)  
Internet: <http://europa.eu.int/comm/enterprise/environment/index.htm>

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## EXECUTIVE SUMMARY

This report is the result of a “Best Procedure” (i.e. benchmarking) project carried out by the European Commission’s Directorate-General for Enterprise Policy in close co-operation with an Expert Group made up of governmental representatives together with a representative from the European Association of Craft, Small and Medium-sized Enterprises (UEAPME). The report describes and analyses different good practice examples of public policies, programmes and initiatives (“framework conditions”) to encourage the (voluntary) uptake of environmental management systems (EMSs) in small and medium-sized enterprises (SMEs).

SMEs are important sources of economic growth and employment in the European Union (EU). At the same time, collectively they exert quite significant pressures on the environment. Their adoption of an EMS (which can be of a formal nature – the EU’s Eco-management and audit scheme EMAS and the international standard (EN) ISO 14001 – or of a less formal, “adapted” character) can help address these pressures. In addition, an EMS can also have a positive impact on these companies’ economic viability.

At present, the uptake of both formal and less formal EMSs by SMEs across Europe is low, largely on account of a number of barriers SMEs face in this respect (see *chapters 1 and 2* of this report). Nonetheless, some countries and regions clearly perform better than others. This raises two questions: i) what are the policy options available to public authorities to significantly increase the uptake of EMSs by SMEs?; and ii) what can they learn from successful public policy approaches in other countries and regions?

To answer these questions, *chapter 3* of this report describes and comments on 24 good practice case studies in 13 different European countries, both at national, regional and local level. It does so by distinguishing the following five categories of public policies:

- **Organisational arrangements for EMSs** – e.g. in relation to accreditation, certification/verification, registration, promotion and evaluation.
- **Embedment of EMSs** – the use of EMSs as one tool amongst others in public environmental policy strategies at national, regional, local and/or sector level.
- **Assistance provided to enterprises establishing EMSs** (“push” factors) – for example direct subsidies, information provision, attempts to promote an “SME-friendly” implementation of formal EMSs, sector-specific initiatives as well as the use of horizontal, vertical and multi-stakeholder networks.
- **Initiatives involving less formal approaches to environmental management** – in particular staged, alternative, simplified and integrated EMSs.
- **Benefits offered to enterprises with an EMS** (“pull” factors) – such as raising public awareness and recognition as well as providing material benefits such as access to finance.

The selected good practice examples form the basis for a series of recommendations for the design of relevant policies and programmes, both at national, regional, local and European level (*chapter 0*). Obviously, these recommendations should not be pursued in isolation, but as part of a well-designed and coherent package of measures.

## 0. RECOMMENDATIONS

This report highlights a large number of good practice examples of what public authorities, often together with other stakeholders, can do to help achieve a significantly higher uptake of environmental management systems (both formal and less formal) in small and medium-sized enterprises.

Below, these examples are translated into a series of recommendations which public authorities (both at national, regional/local and EU level) should take into account when designing or reviewing relevant policies, programmes and initiatives. Recommendations are made with respect to each of the five categories of public policies examined in this Best project; they are preceded and followed by some more generic ones. In all cases, reference is made to the individual good practice examples and sections in chapter 3 from which they have been derived.

Ideally, these recommendations should not be pursued in isolation, but as part of a well-designed and coherent package of measures and (pilot) projects. For instance, increased “embedment” of EMSs can go hand in hand with strategies based on horizontal and/or vertical networks, sector-specific initiatives as well as staged approaches to EMS adoption.

### 0.0 INCREASE THE UPTAKE OF EMSs AMONG SMEs (*sections 2.2 and 2.3*)

- Public authorities at all levels should design and implement comprehensive and pro-active strategies to achieve a significantly higher uptake of (both formal and less formal) EMSs among SMEs.
- Efforts to monitor the uptake of formal and less formal EMSs by SMEs (including the collection of sector-, size- and region-specific data) should be stepped up and relevant data should be kept in publicly accessible databases.

### 0.1 ORGANISATIONAL ARRANGEMENTS (*section 3.1*)

- Organisational arrangements for EMAS (e.g. in relation to accreditation, verification, registration, promotion and evaluation) should be based on close consultation and, where appropriate, formal involvement of relevant stakeholders, in particular business and SMEs (*good practices 1 and 2*). This will enhance transparency and trust in the scheme and ensure a consistent message about its meaning and value.
- With respect to the organisational arrangements for EN ISO 14001, ways should be explored to ensure close consultation and, where appropriate, formal involvement of relevant stakeholders including public authorities, in particular to ensure the quality of accreditation and certification (*good practice 3*). This will enhance the transparency and credibility of the standard and that of any related standards (e.g. staged and integrated management systems).

- To be meaningful to the business community, EMS-related organisational arrangements (e.g. regarding promotion and registration) should be established as close to the business community as possible, both in administrative and geographical terms (*good practice 1*).
- The involvement of SMEs and their representatives in the development and/or future revision of national, European and international EMS standards as well as in the planned future revision of the EMAS Regulation should be strengthened.

## **0.2 EMBEDMENT OF EMSs (section 3.2)**

- Increased consideration should be given to embedding EMSs as one of the tools in public environmental policy strategies at local (*good practice 4*), regional (*good practice 5*), national and/or sector (*good practice 6*) level, for instance through voluntary agreements. This approach facilitates the achievement of public policy goals and increases the uptake of EMSs by businesses including SMEs.
- An EMS used as part of a broader environmental policy strategy should be clearly defined (i.e. a formal and/or a well-defined less formal and perhaps sector-specific EMS), taking account of enterprise size and sector. It should be ensured that key stakeholders understand the defined EMS.

## **0.3 ASSISTING ENTERPRISES IN ESTABLISHING AN EMS (section 3.3)**

### **0.3.1 Direct Subsidies (section 3.3.1)**

- Increased consideration should be given to using more innovative EMS-related subsidy schemes, e.g. schemes promoting SME networks (*good practices 7 and 8*) and internal capacity-building (*good practice 9*). Such schemes have produced positive results for SMEs and may be more successful than conventional schemes, which tend to fund individual SMEs and rely on assistance by third parties (e.g. consultancy firms).
- The option to link funding for (formal and/or less formal) EMS implementation to financial support for mainstream investments should be explored further and be used more widely (*good practice 10*).
- Subsidy schemes should seek to minimise the administrative burden on SMEs in relation to applications for funding, reporting, etc, by reducing red tape and, where appropriate, shifting administration onto a third party (*good practice 8*).
- Efforts to evaluate the effectiveness of subsidy schemes and draw any lessons from such evaluations should be stepped up.



### **0.3.2 General and Technical Information (section 3.3.2)**

- General EMS-related awareness and promotional campaigns at national, regional or local level should take more account of the specific characteristics of SMEs. This could for instance be achieved by involving SME organisations and/or sector federations in their design and execution, using business language, paying attention to potential economic benefits alongside environmental ones and giving country/region, SME and sector-specific good practice examples.
- Public authorities, in collaboration with relevant stakeholders, should do more to evaluate the uptake and effectiveness, from an SME perspective, of EMS-related technical information tools (e.g. guides, handbooks, toolkits, Internet sources) and to share good practice, both within and between Member States.
- The role that business associations and business support networks and centres can play as possible providers of EMS-related technical information and assistance should be further explored and encouraged.
- Technical information and assistance concerning EMSs should be accompanied by information and support to encourage and facilitate “follow-up” activities (e.g. the introduction of cleaner technologies – *good practice 24*).

### **0.3.3 Promoting SME-Friendly Implementation of Formal EMSs (section 3.3.3)**

- Ways should be explored to make the implementation of formal EMSs more SME-friendly, without compromising the quality and effectiveness of the EMS. This should involve inter alia testing existing staged and simplified methods and tools for EMS implementation, and exploring ways to help ensure that auditors and consultants receive SME-relevant training.
- In relation to the existing EMAS Regulation, action should be taken to ensure improved follow-up to the Commission Recommendation on Guidance to verifiers on the verification of SMEs.
- The need to ensure SME-friendly implementation of EMAS should guide the future revision of the scheme. Possible ways to do this include introducing a staged approach to EMAS implementation (for instance through the use of BS 8555), ensuring an increased focus on its effects in terms of environmental and economic performance, simplifying language and terminology and addressing complaints about the compulsory annual re-validation of environmental statements.
- At national and/or European level (CEN), consideration should be given to issuing guidance on SME-friendly implementation and certification of EN ISO 14001.

#### **0.3.4 Sector-Specific Initiatives (section 3.3.4)**

- The use of sectoral approaches to EMS implementation taking account of the specific characteristics of the sector and its SME population should be further explored and encouraged (*good practices 11 and 12*). Such approaches should be developed and implemented in close collaboration with relevant sector organisations.

#### **0.3.5 Network Approaches (section 3.3.5)**

- The use of horizontal (*good practices 13 and 14*), vertical (*good practice 15*) and/or multi-stakeholder (*good practices 16 and 17*) networks should be further explored and encouraged. Networks require clear goals and effective leadership as well as offering benefits for all participants.

### **0.4 LESS FORMAL APPROACHES TO ENVIRONMENTAL MANAGEMENT (section 3.4)**

#### **0.4.1 Staged, Simplified and Alternative EMSs (sections 3.4.1 and 3.4.2)**

- Recognition should be given to the fact that the large and increasing variety of less formal EMSs reflects both a need amongst SMEs for entry-level tools to environmental management and a demand by customers in the supply chain for evidence of environmental actions by their suppliers, often SMEs (*good practices 18, 19, 20 and 21*). At the same time, consideration should be given to concerns about possible confusion in the market as a result of this proliferation and to questions related to the credibility of less formal EMSs.
- Taking account of these concerns, consideration must be given to the possibility of standardising less formal EMSs at EU level (e.g. within CEN) in particular in relation to a staged approach to EMS implementation.
- In the planned future revision of the EMAS Regulation consideration should be given to the possibility of incorporating a staged approach to EMAS registration into the Regulation.
- When considering the introduction of a staged approach to EMS implementation at European level, the advantages and disadvantages of introducing a system of external recognition for the intermediate steps should be examined in more detail (e.g. effects in terms of higher motivation versus higher *total* costs).
- Initiatives to test staged approaches to EMS implementation should be stepped up.

#### **0.4.2 *Integrated Approaches (section 3.4.3)***

- The potential benefits of and practical experiences made with integrated management systems (i.e. those combining, for example, environment, health and safety, quality, or social aspects) should be further explored and such systems should be encouraged, where appropriate (*good practice 22*).
- To facilitate the implementation of integrated management systems and make it less costly, adequate training should be provided to ensure that individual consultants, auditors and certifiers can address the large variety of issues covered by such systems.
- The ongoing development of integrated management standards at national level (e.g. Denmark) should be monitored and, if appropriate, considered at European level (e.g. within CEN).

### **0.5 OFFERING BENEFITS TO COMPANIES WITH AN EMS (section 3.5)**

#### **0.5.1 *Increasing Public Awareness and Recognition (section 3.5.1)***

- Further evaluation should be undertaken of the (relatively scarce) initiatives by public authorities and other actors to raise general awareness of the meaning and value of an EMS, and to increase the recognition for the efforts made by companies/SMEs (*good practice 23*).
- Awareness raising initiatives on the meaning and value of EMSs at national, regional and local level should not only be directed at the public at large, but also, and more importantly, at specific audiences, in particular customers within the supply chain, banks, insurance companies and permitting authorities.
- Public administrations should be encouraged to adopt their own EMS and communicate the reason for this adoption in order to help raise general awareness of the value of an EMS.

#### **0.5.2 *Material Benefits (section 3.5.2)***

- The scope for stepping up initiatives by public authorities and other actors to offer material benefits (“pull factors”, such as lower insurance premiums and improved access to finance) to companies/SMEs with an EMS should be explored, and such initiatives should be further encouraged (*good practice 24*).
- The use of EMS-related provisions in tender specifications should be carefully monitored to ensure that SMEs are not disadvantaged and potentially put out of business.

### **0.5.3 Regulatory Relief/Deregulation (section 3.5.3)**

- Taking account of ongoing work in this area (e.g. the Dutch ENAP and the UK REMAS projects), Member States and the EU Institutions should explore the scope for stepping up initiatives to connect EMSs with permitting, inspection and enforcement activities (e.g. by providing forms of “regulatory relief”). At EU level this should in particular be done in the context of the planned future revisions of the IPPC Directive and the EMAS Regulation.

## **0.6 OTHER RECOMMENDATIONS**

- Consideration should be given to launching pilot projects (e.g. at local and regional level) to test and replicate the good practice examples described in this report.
- It needs to be examined how available financial means (e.g. the EU Structural Funds, pre-accession assistance, the EU LIFE Programme or the DG Enterprise Multi-Annual Programme for Enterprise and Entrepreneurship) can be used to help implement the recommendations made above. This requires, amongst other things, that the provisions governing such types of expenditure (e.g. the Structural Funds in the post-2006 period) allow for relevant initiatives (e.g. strategies based on networks and staged approaches to EMS implementation) to receive funding.
- Ways should be explored to intensify contacts and exchange experiences between persons and organisations in charge of relevant policies, programmes and initiatives at national and regional/local level (e.g. through seminars, visits, dedicated websites).
- The Commission should feed the identified good practices into the DG Enterprise “Business Support Initiatives” Good Practice Database and keep this up-to-date by adding relevant good practice examples that emerge in the future.
- Within one year after the formal adoption of this report, members of the Expert Group and the Commission should report back to the Group on the action taken in response to the above recommendations.

## 1. INTRODUCTION

### 1.1 THIS REPORT: OBJECTIVE AND MAIN CONTENTS

This report is the result of a “Best Procedure” (i.e. benchmarking) project (hereafter referred to as the “Best project”) carried out by the European Commission’s Directorate-General for Enterprise Policy, in close co-operation with an Expert Group made up primarily of governmental representatives. The report describes and analyses different good practice examples of public policies, programmes and initiatives (“framework conditions”) to encourage the (voluntary) uptake of environmental management systems (EMSs) in small and medium-sized enterprises (SMEs).

SMEs are important sources of economic growth and employment in the European Union (EU). At the same time, collectively they exert quite significant pressures on the environment (use of scarce resources, pollution, waste). Their adoption of EMSs can help address these pressures and may also have a positive impact on these companies’ economic viability.

However, at present the uptake of both formal and less formal EMSs by SMEs in all European countries is low (see section 2.2), largely on account of a number of barriers that SMEs face in this respect. At the same time, some countries clearly perform better than others. This raises two essential questions, which this report tries to answer: i) what are the policy options available to public authorities to significantly increase the uptake of EMSs by SMEs?; and ii) what can they learn from successful public policy approaches in other countries?

Following a methodological introduction (chapter 2), the report describes and compares 24 examples of good practice in public policy initiatives from 13 countries to encourage the introduction of EMSs by SMEs (chapter 3). Based on these good practices, the report makes a number of recommendations for the design of future public policy in this area (chapter 0).

It is important to note that the report is not limited to policy initiatives at national level or to initiatives related to the encouragement of formal EMSs (i.e. the international standard ISO 14001<sup>1</sup> developed by the International Organisation for Standardisation (ISO) and subsequently adopted as a European standard EN ISO 14001<sup>2</sup> as well as the European Eco-Management and Audit Scheme, EMAS<sup>3</sup>). It also looks at good practice at *regional and local level* and it covers other, *less formal* EMSs, which can be stepping stones to more formal systems.

In preparation of the report, extensive information on relevant public policies and initiatives in a large number of European countries was collected. The collected information was then structured into different categories and analysed against a number of agreed selection criteria, in order to single out good practice examples. Where relevant, these good practices are accompanied by a description of particular conditions for success.

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Work was carried out by the Environment Unit of the European Commission's Enterprise Directorate-General and a group of governmental experts nominated by national authorities (see Appendix 1 for a list of Expert Group members). Their work was supported by a team of consultants (see Appendix 2 for further details), who were responsible, in particular, for selecting good practice examples among the numerous existing initiatives, and drawing specific lessons from them.

## **1.2 BACKGROUND**

The challenges faced by SMEs in addressing their environmental impacts have attracted the attention of policy-makers at EU level on several occasions. For instance, in April 1997 an informal Environment Council on SMEs and the Environment was held, which asked the Commission to examine the possibility of presenting a comprehensive strategy on the matter, put forward possible solutions, and suggest further action to improve the environmental performance of SMEs. In November 1999, the Industry Council also paid attention to the issue, recognising that, in the context of the integration of sustainable development into industry policy, special attention had to be paid to SMEs. In line with this, the Industry Council conclusions of 14-15 May 2001 called on the Commission to use the Best Procedure in order to foster integration of sustainable development into Enterprise policy, notably within the Multi-Annual Programme for Enterprise and Entrepreneurship, which itself has a special focus on SMEs.

The call for an environment-related Best project was echoed by the Directors-General of Member State Ministries of Economic Affairs/Industry (Enterprise Policy Group – EPG) at its meeting of 29 June 2001. Following this, the matter was examined in more detail by the EPG Sustainable Development Working Group, which discussed a number of specific options for such a Best project at its meetings on 17 October and 30 November 2001. Confirming the importance of choosing an SME-related subject, the Working Group recommended that this should focus on public policies to encourage the take-up of both formal and less formal EMSs.

Among the policies and programmes that countries in Europe (Member States, acceding and accession countries and EFTA members) have put in place to help SMEs improve their environmental performance, initiatives to encourage the introduction of EMSs constitute a specific category. As such initiatives take a wide variety of forms, and there is considerable scope for learning from good practices, they were considered to offer a promising subject for a Best project.

## **1.3 SMEs AND THEIR IMPACTS ON THE ENVIRONMENT**

In the context of this Best project, the concept of SMEs refers to private enterprises (both in manufacturing industry and the service and trade sectors) with fewer than 250 employees.<sup>4</sup> Within the overall SME population a further categorisation can be made by distinguishing between micro (0-9 employees), small (10-49 employees) and medium-sized (50-249 employees) enterprises, with large enterprises being defined as having more than 249 employees. In the EU, 99 per cent of the more than 20 million (non-primary sector) private

enterprises are SMEs; the overwhelming majority of these (19 million) employ fewer than 10 people. SMEs account for two thirds of the 122 million jobs in private enterprises.<sup>5</sup>

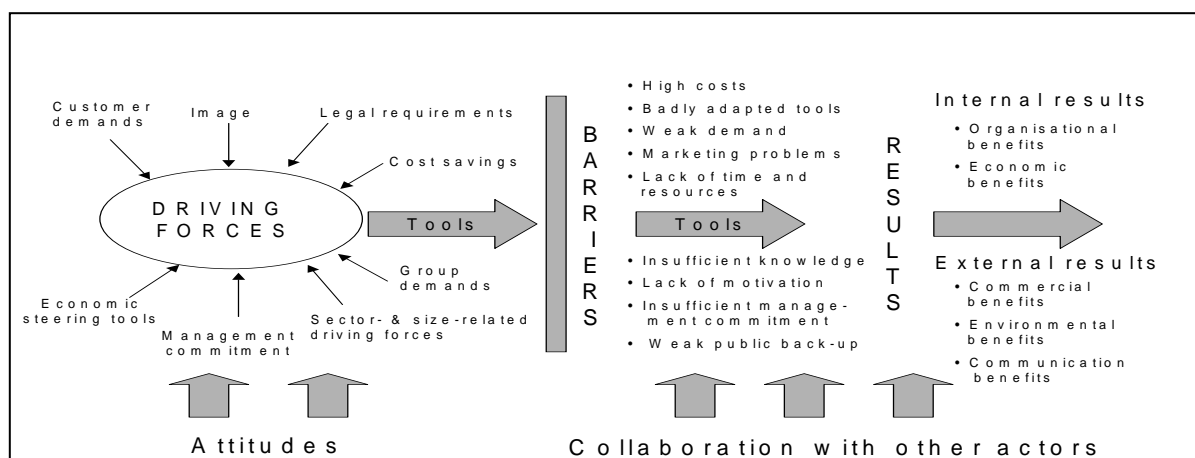
It is important to bear in mind that SMEs form a very heterogeneous group and that large differences exist between individual companies, both in terms of sector and size. Thus, in many respects a medium-sized enterprise employing some 200 people may have more in common with a large company than with a micro enterprise. Obviously, public policies (e.g. in relation to the environment) directed at SMEs should take account of this heterogeneity.

Although precise data are scarce, there is general agreement within relevant literature that SMEs exert considerable pressures on the environment. This is not necessarily because individual SMEs are big polluters (although some of them may have important impacts on the local environment), but rather because of the environmental effects they have collectively. A frequently quoted (albeit largely unsubstantiated) estimate is that SMEs, taken together, could be responsible for up to 70 per cent of all industrial pollution. Among the most environmentally significant SME-dominated manufacturing sub-sectors are metals; textiles, leather and clothing; plastics; timber, woodworking and furniture; printing; electronics; specialist chemicals such as dyes, paints and varnishes; as well as food, drink and tobacco.<sup>6</sup>

SMEs themselves are often unaware, or not fully aware, of their environmental impacts, and they are not always well informed about their obligations under environmental legislation.<sup>7</sup> Evidence suggests, however, that there is a correlation between a company's size and its environmental engagement: the bigger the company, the more likely it is to have a pro-active environmental policy.<sup>8</sup>

#### 1.4 IMPROVING THE ENVIRONMENTAL PERFORMANCE OF SMEs: TOOLS, DRIVERS, BARRIERS AND EFFECTS

Key factors influencing the environmental efforts of SMEs (like those of large companies) include the tools at their disposal to reduce environmental impacts, the pressures ("driving forces") exerted on them to use these tools, and the barriers they face in trying to do so. In a recent report by the Swedish Business Development Agency NUTEK, these and other parameters and the way in which they are linked are visualised as follows<sup>9</sup>:





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The following paragraphs detail the three key factors (“tools”, “drivers” and “barriers”), as well as the results (effects) of EMS implementation.

***EMSs as a key tool to help reduce environmental impacts and achieve sustainable production patterns***

Environmental management systems – both formal and less formal – are amongst the most well-known and most important voluntary tools used by enterprises to improve their environmental performance, and help ensure compliance with environmental legislation. Examples of other instruments in this area are eco-labels, life-cycle-assessment tools, environmental reports and benchmarking initiatives.

An EMS helps companies integrate environmental considerations into their overall activities, and make progress towards more sustainable production patterns in a systematic way, on the basis of a plan-do-check-act (PDCA) model. It requires them, amongst other things, to develop an environmental policy, establish environmental objectives and targets, define the necessary procedures and responsibilities, monitor conformance with the established objectives and targets, carry out periodic audits of the system, and review it at regular intervals.<sup>10</sup> A company can choose to have its EMS examined and certified (or verified) by a third party (a certification or verification body), but it can also opt to establish a non-certified EMS.

EMSs can take many different forms. They often appear in their internationally recognised, formal nature, but they can also take a number of less formal, “adapted” forms. The two formal EMSs are the international standard EN ISO 14001 and the EU’s Eco-Management and Audit Scheme (EMAS) formalised in the form of an EU Regulation. Both approaches, which have many features in common, set out the specific requirements that an EMS must fulfil. Whilst EN ISO 14001 forms a key building block for EMAS, in a number of respects EMAS is a more ambitious scheme. This stems for instance from specific requirements with respect to compliance with environmental legislation, continual improvement of environmental performance, and employee involvement. Moreover, unlike EN ISO 14001, EMAS requires organisations to publish an external environmental report (“statement”). Finally, and also in contrast to EN ISO 14001, the EMAS Regulation articulates what administrative structures Member States have to establish to allow the scheme to operate. An EMS established in accordance with EN ISO 14001 can be certified by an (accredited or unaccredited) certification body, but in most countries there is no central registration. EMSs implemented in line with the EMAS Regulation are verified only by accredited verifiers and centrally registered.

An important premise of this report is that a formal EMS does not necessarily represent the optimal and most cost-effective solution for all companies, in particular micro and small enterprises. This is reflected by the fact that in addition to the internationally recognised, formal EMSs, such systems also appear in a large number of less formal forms. Amongst such less formal EMSs, this report will distinguish between “staged”, “alternative”, “customised” and “simplified” EMSs. Management systems integrating different aspects (environmental, health, safety, quality) form a specific category; they can be both of a formal and of a less formal nature.



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*Staged* approaches have in common that the establishment of an EMS is divided into a number of clearly distinguishable, consecutive steps. One of such approaches (the so-called UK “Acorn model”) has recently been translated into a new British Standard (BS 8555<sup>11</sup>). *Alternative* EMSs are based on the attribution of alternative, environment-related logos or labels according to the specific requirements of the scheme in question. Examples include the Norwegian “Eco-lighthouse” (*Miljøfyrtårn*) scheme, the Austrian “Eco-profit” (*ÖKOPROFIT*) model and the German “QuH”-label (*Qualitätsverbund umweltbewusster Handwerksbetriebe*) for small craft companies in Bavaria. *Customised* (or tailor-made) EMSs are designed by a company in accordance with its own wishes and needs; they can – but not necessarily – take the form of a *simplified* EMS.

Less formal approaches tend to share the basic characteristics of formal EMSs (environmental policy, planning, implementation and operation, checking and corrective action, management review). Provided that such EMSs are properly designed and implemented, they can in principle be equally effective as formal systems and – in some cases – be even more sophisticated. However, implementation of a formal system can give higher credibility to the EMS and increase transparency. This is in particular the case for EMAS owing to the interaction with the public through the environmental statement and its requirements in relation to compliance with environmental legislation.<sup>12</sup>

### ***Drivers behind and barriers to EMS uptake by SMEs***

Several studies have attempted to map the drivers behind and the barriers to environmental pro-activeness and, more specifically, EMS implementation by SMEs. A good example is the frequently quoted overview study by Ruth Hillary<sup>13</sup>, which summarises the results of 33 separate studies on this subject published between 1994 and 1999.

The overview study identifies the most important stakeholders driving (formal) EMS implementation by SMEs as customers, the local government and community, regulators and employees, followed by insurers, the general public and suppliers, and gives a detailed description of relevant barriers. In this connection, it makes a distinction between internal and external barriers. Internal barriers include the lack of human resources rather than finance, frequent interruptions in the implementation of an EMS in SMEs, the lack of information about EMSs and their benefits, as well as attitudes and company culture. The key external barriers identified by the study are problems and dissatisfaction with the certification/verification process, high implementation and certification costs<sup>14</sup>, insufficient drivers and uncertainty about market benefits, as well as a lack of good quality consultants and sector-specific guidance. The study concludes that internal barriers, which act as an initial stumbling block to getting engaged in environmental work, are more important than external ones.

### ***The effects of EMS implementation***

The overview study not only examines barriers to EMS implementation. It also identifies a large number of internal and external benefits as well as some “disbenefits” that SMEs have experienced in establishing a formal EMS. Observed internal benefits include general

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organisational improvements, costs savings (although these vary widely), increased employee motivation and enhanced skills. Important external benefits are related to gaining new and satisfying existing customers, improved environmental performance, better legal compliance, as well as better communication with stakeholders and regulators. Amongst the disbenefits, the study mentions higher than expected staff and certification costs, unexpected capital expenditure, a lack of market rewards, too much emphasis on paper work instead of environmental improvements, and the overall complexity of the approach.

In line with this and other studies<sup>15</sup>, the assumption underlying this report is that EMSs (either formal or less formal, depending on the size and type of the enterprise at hand) provide both environmental and economic benefits. It assumes that – on average – an EMS improves a company's environmental performance, can help increase its regulatory compliance rate, and may also entail a number of net economic advantages. Whilst this general assumption about the positive effects of EMSs seems to be widely (albeit not unanimously<sup>16</sup>) shared, the extent to which (different types of) EMSs produce these effects is still subject to discussion and research<sup>17</sup>.

In this Best project report, an EMS is viewed as a useful tool for companies wishing to systematically address their environmental impacts and, by doing so, reap a number of additional (e.g. economic) benefits/rewards. However, the environmental and economic effects of an EMS are partly dependent on how individual companies apply such a system (internal effectiveness) and on the extent to which they are in a position to capitalise on their EMS in their relations with other stakeholders (external effectiveness). Such effects depend, for instance, on the company's ambitions regarding its internal environmental policy and objectives, the human and financial resources needed to implement the EMS, and the extent to which the EMS is beneficial in terms of relations with public authorities (such as permitting and inspection bodies) or with customers.

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## 2 METHODOLOGY

### 2.1 INTRODUCTION

The general objective of all Best projects conducted by the Commission's Enterprise Directorate-General is to compare and benchmark public policies in a well-defined area of enterprise policy. However, such projects vary regarding the extent to which genuine benchmarking based on quantitative indicators is possible. Whereas some Best projects lend themselves to numerical comparisons between Member States and other countries (e.g. the Best projects on business start-ups or incubators<sup>18</sup>), others (e.g. on education for entrepreneurship or support measures for women entrepreneurs) do so to a more limited extent and are based on a more *qualitative* approach.

This Best project on EMSs in SMEs belongs to this latter category. Whilst some quantification is possible (see section 2.2 below), notably regarding the number of enterprises with a formal EMS, this must be complemented by a more qualitative analysis. The reason for this is twofold: the incompleteness of quantitative data and the difficulty of establishing causal links between relevant initiatives by public authorities and EMS uptake by SMEs.

A qualitative approach involves the selection and description of a number of particularly innovative and promising initiatives under different categories of public policies (i.e. a number of well-defined "framework conditions"<sup>19</sup> – see section 2.3) on the basis of clearly defined selection criteria (see section 2.4).

An important question is whether such initiatives should be labelled "best" or "good" practices. Identification of *best* practice requires the availability of quantifiable and objective elements, which would allow such practices to be benchmarked. However, quantitative data in this area (e.g. on the uptake of formal and less formal EMSs by SMEs) are scarce. Furthermore, as stated above, even where data do exist, it is often difficult to establish a clear and direct relationship between specific public policies and EMS uptake. For these reasons, this report identifies *good* rather than best practice. Obviously, the description of good practices in this report is not – nor has the pretension to be – exhaustive, and additional good practice examples can be added in the future.

### 2.2 QUANTITATIVE INDICATORS ON THE UPTAKE OF EMSs

When examining possible quantitative indicators, account was taken both of what is desirable and of what is feasible on the basis of available data.

#### *Wish lists*

As this Best project is mainly concerned with public policies towards *private enterprises* (rather than to "organisations" or "sites" at large<sup>20</sup>) an obvious first indicator would be the *number of private enterprises with a formal EMS* as a percentage of the total number of private enterprises in a country:

1. Percentage of private enterprises<sup>21</sup> with a formal EMS (EN ISO 14001 or EMAS) for EU (15) as well as for the acceding and candidate countries and Norway.

Starting from this overall indicator, further distinctions could then be made for specific sectors, size class, regional spread and time trends:

- 1.1 Percentage of enterprises in the manufacturing sector<sup>22</sup> (or “industrial activity”<sup>23</sup> as defined in EMAS I) with a formal EMS per country.
- 1.2 Percentage of enterprises in different sub-sectors of the manufacturing industry/industrial activities (e.g. food, paper, basic metals, textiles) with a formal EMS per country.
- 1.3 Percentage of SMEs (with sub-division into micro, small and medium-sized enterprises) with a formal EMS per country.
- 1.4 Regional spread within countries<sup>24</sup>.
- 1.5 Trends in time (increases, decreases).

Secondly, given the scope of this Best project, an indicator related to the number of SMEs with a *less formal EMS* would also be relevant:

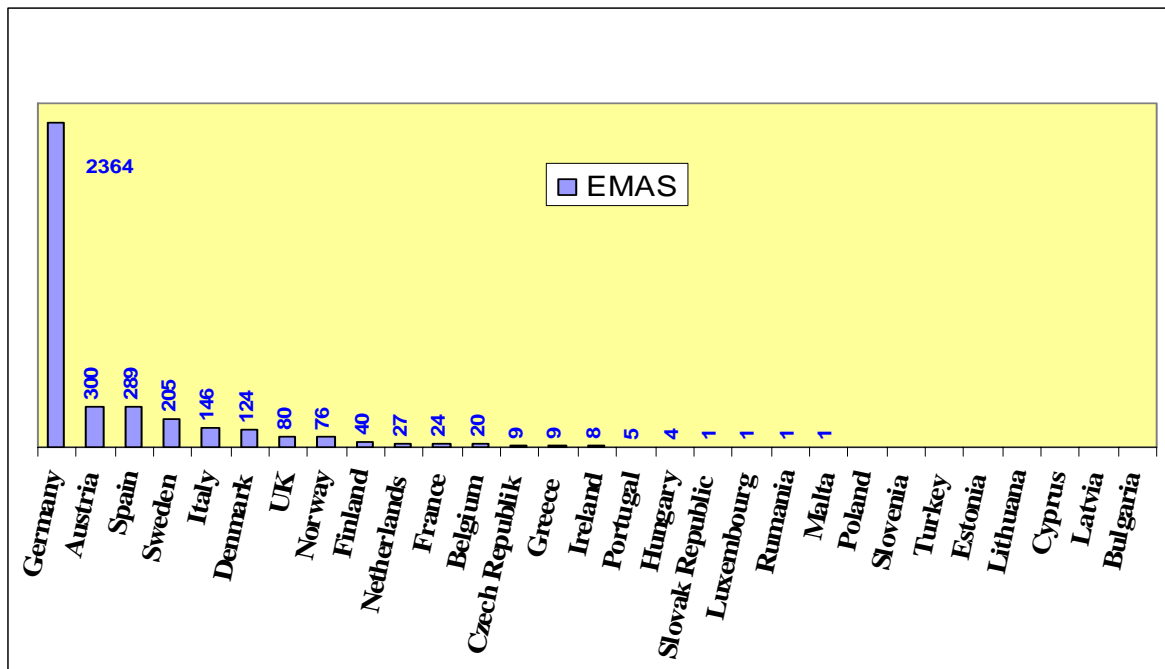
2. Total number of SMEs with a less formal EMS as a percentage of the total number of SMEs for EU(15) as well as for the acceding and candidate countries and Norway.

### ***Data constraints***

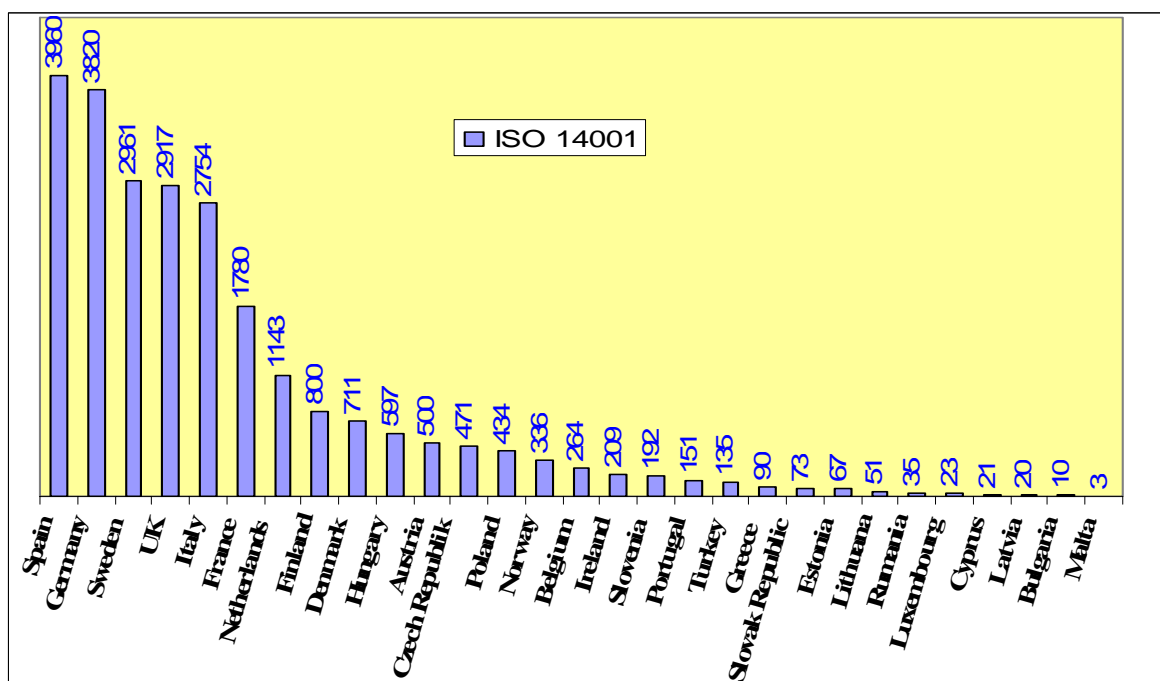
Unfortunately, data constraints impose clear limits on what is possible in terms of quantitative indicators in the context of this Best project. For instance, although overall numbers of EMAS registered sites/organisations per country are readily available, on the basis of the available data it is much more difficult to make further distinctions (notably in terms of size-class<sup>25</sup>). This difficulty applies a fortiori to EN ISO 14001 certifications.<sup>26</sup> Finally, any meaningful, *EU-wide data* on less formal EMSs do not seem to exist at all.<sup>27</sup>

For the reasons set out above, only a rough estimation can be given of differences between countries in Europe. This is done, first of all, by giving the total number of organisations (both public and private) registered to EMAS and certified to EN ISO 14001 per country<sup>28</sup> and, secondly, by relating these overall numbers to the total number of non-primary private enterprises per country<sup>29</sup> (see graphs 1, 2 and 3 below):

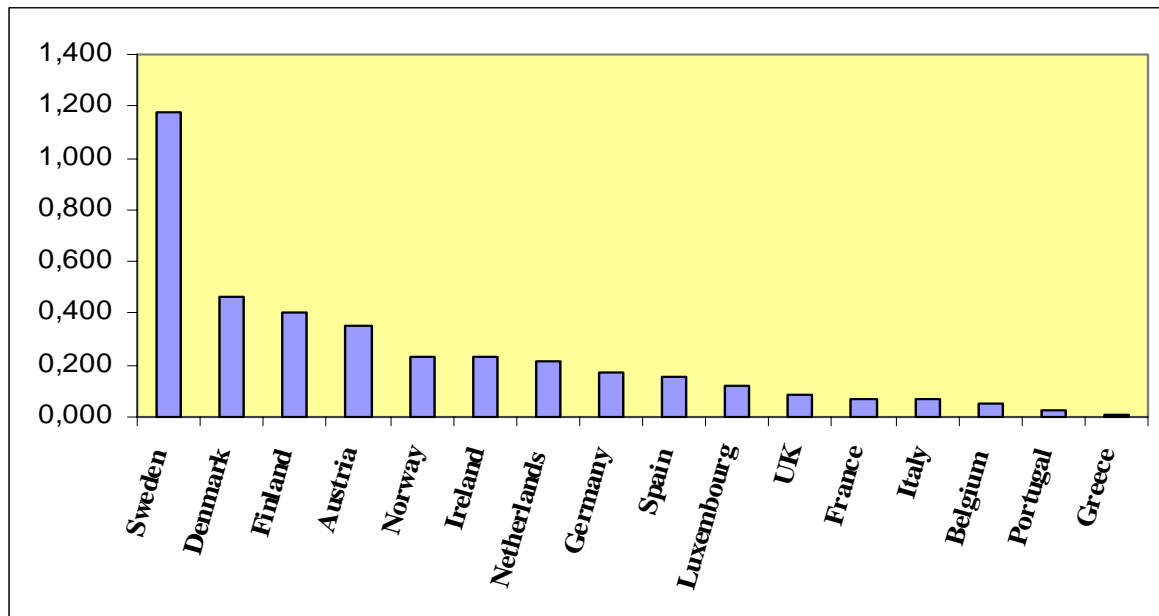
Graph 1 – Total number of EMAS-registered organisations per country (July 2003)



Graph 2 – Total number of organisations certified according to EN ISO 14001 (and ISO 14001) per country (July 2003)



*Graph 3 – Organisations with a registered or certified formal EMS as a percentage of the total number of non-primary private enterprises in EU (15) and Norway (in 2000)*



Graph 3 clearly demonstrates that the uptake of formal EMSs by private enterprises in the EU is still very modest – well below 0.5 per cent in all Member States with the exception of Sweden. In most of these countries, SMEs constitute at least 50 per cent of the total (formal) EMS population.<sup>30</sup> However, given that SMEs themselves make up some 99 per cent of all European enterprises, in relative terms their share is much lower. In many countries the uptake of the various types of less formal EMSs by SMEs appears to be higher than that of formal EMSs, but, as stated above, reliable, comparative data are very scarce.<sup>31</sup>

### **2.3 PUBLIC POLICY INITIATIVES AS A PERFORMANCE DRIVER**

Although there is a lack of precise quantified data, the above does demonstrate that there are clear differences between countries in terms of the share of enterprises, including SMEs, with a formal or less formal EMS. One of the questions guiding this Best project is which key factors account for such differences. Which factors, in other words, are key “performance drivers”?

As set out in chapter 1, the uptake of EMSs by SMEs depends on the interaction between a number of barriers and drivers. Several actors can exercise influence on such barriers and drivers:

- Companies themselves, e.g. thanks to “green” leadership and a favourable company culture;
- Other companies, e.g. through supply chain pressures;
- Consumers and public opinion;

- Public authorities.

Best projects typically put the main emphasis on the last category: policies, programmes and initiatives under the control of and initiated by public authorities (albeit often with the involvement of other stakeholders). Taking account of the wide variety of relevant public policy initiatives in Europe<sup>32</sup>, in this project these initiatives have been grouped in the following five categories:

#### Five categories of public policy initiatives

1. **Organisational arrangements:** Institutional structures established for the operation of EMAS and EN ISO 14001 (notably registration/certification as well as accreditation and supervision of verifiers/certifiers).
2. **Embedment of EMSs:** Public policies, at a national, regional or local level, which incorporate initiatives to promote EMSs in a comprehensive, strategic framework.
3. **Assistance provided to enterprises in establishing an EMS (“push” factors):** Financial and technical support, information provision and other (e.g. sector-specific or network-related) initiatives to assist SMEs in establishing EMSs.
4. **Initiatives involving less formal approaches to environmental management:** initiatives related to staged, simplified or alternative EMSs.
5. **Benefits offered to enterprises with an EMS (“pull factors”):** Public policy initiatives aimed at offering recognised benefits to enterprises with an EMS.

The next chapter (chapter 3) describes good practice examples under each of these five categories and their sub-categories. In practice, the different framework condition categories are of course inter-linked and successful approaches usually depend on a combination of several elements. However, for the sake of making comparisons between similar factors and initiatives they will be presented separately.

## 2.4 SELECTION CRITERIA AND THE WAY THEY ARE APPLIED

The examples of good practice described in this report have been selected by external consultants on the basis of a set of criteria<sup>33</sup>, which together with their application method, was agreed by the Expert Group. These selection criteria relate both to the *intention and design* of public policies – six “input” criteria – and to their *results and practical outcomes* – four “output” criteria. Two criteria (“clear objectives” and “effectiveness”) are considered “essential”: they have to be met in *all* cases.

#### Criteria for the Selection of Good Practices

##### *Input Criteria: intention and design*

1. **Clear Objectives** (*essential criterion*): The policy initiative has clearly identifiable aims and objectives (e.g. they are explicit, quantifiable, verifiable).
2. **SME-orientated:** The nature, form and delivery mechanism of the policy initiative take account of the specific needs of SMEs in the light of relevant barriers and drivers.

3. **Stakeholder participation:** Relevant stakeholders participate/are involved/consulted in the design, implementation and monitoring of the policy initiative.
4. **Evaluation mechanism:** The policy initiative has a built-in monitoring, evaluation and review mechanism and, where appropriate, takes account of previous experience.
5. **Innovative character:** The policy initiative seeks to adopt innovative approaches to access, involve and/or motivate SMEs.
6. **Synergies with policy context:** The policy initiative integrates the use of EMS into a broader environmental policy or legislative framework.

*Output Criteria: results and practical outcomes*

7. **Effectiveness** (*essential criterion*): The policy initiative shows positive impacts in terms of (quantitative or qualitative) outcomes (e.g. the number of SMEs participating in the measure/increase in the number of SMEs with an EMS, both formal and informal), also taking account of the resources (financial and human) used to achieve these outcomes.
8. **Positive Feedback:** Positive feedback is received from relevant stakeholders, notably SMEs and industry federations participating in the policy initiative (e.g. positive cost/benefits ratio for users, improvements in environmental and economic performance).
9. **Self-sustaining:** The policy initiative is self-sustaining and has a lasting effect beyond the duration of the policy.
10. **Reproducibility:** The policy initiative is capable of being reproduced in other countries, regions or contexts.

Each good practice example described in chapter 3 of this report has fulfilled at least six of the 10 criteria: a minimum of three input and three output criteria<sup>34</sup>, including the two essential criteria (“clear objectives” and “effectiveness”). Some good practice examples meet more than the minimum six criteria.

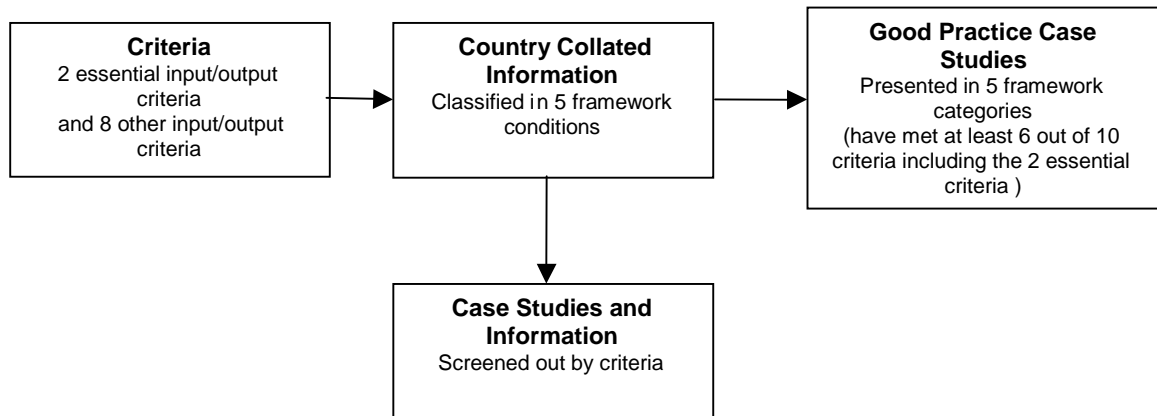
One additional criterion is applicable only to the fourth category of public policy initiatives distinguished above – initiatives involving less formal approaches to EMSs – because this category not only concerns the design and results of public policies, but also refers to the contents of the EMSs itself. Good practice examples in this framework condition must fulfil an additional “EMS Quality” criterion; they must also meet six out of the 10 criteria described above.

**Additional Criterion for Selection of Good Practices in category 4**

**EMS quality:** The less formal EMS focuses on promoting environmental improvements in line with the “plan-do-check-act” (PDCA) approach and it can be rolled out to a formal EMS if desired.

The method applied to select good practices is shown in the figure below. Selection criteria are reflected implicitly in the description of the good practices; in some instances a specific criterion is highlighted as a subheading in the good practice text boxes contained in chapter 3.



*Application of Selection Criteria*

For the case studies, key individuals were interviewed by telephone utilising an interview question spreadsheet to obtain evidence of whether and how the example met the selection criteria. On average the interviews lasted between 45 and 90 minutes. These interviews were, in some cases, supported by additional documents such as project reports, articles and brochures. For accuracy, the interviewees have reviewed their own good practice examples. An overview of all interviewees and the corresponding good practice example is contained in Appendix 2.

## 2.5 CONDITIONS FOR SUCCESS

The selected good practices have a contextual setting that contributes, to varying degrees, to their success. The conditions for success are in general those defined as external to the good practice examples. One purpose of selecting good practice examples is to allow for their duplication in other countries/regions or settings. Therefore, the identification of essential external factors contributing to the success of a good practice is necessary to highlight any circumstances that are critical to the reproducibility of that good practice.

Key external factors that may determine the success of the identified good practices, and may thus be critical to their replication, fall under the following headings:

- Economic
- Institutional
- Cultural
- Legislative.

Where an external, contextual factor has been essential to a good practice example's success this has been clearly identified. In general, the selected good practices do not seem to have any specific conditions that would prevent their replication in other locations or countries. In fact, many of the approaches are being adopted in different settings and under different local conditions.

### 3. GOOD PRACTICES IN DIFFERENT AREAS OF PUBLIC POLICY

This chapter presents and comments on a number of good practice examples under the five categories of public policy initiatives described in section 2.4 above: organisational arrangements (section 3.1), embedment of EMSs (3.2), assistance provided to enterprises in establishing an EMS (3.3), initiatives involving less formal EMSs (3.4), and benefits offered to enterprises with an EMS (3.5).

The structure of the each of the sections is as follows:

- A brief introduction to the public policy category: what is it and why is it relevant?
- Good practices (presented in grey text boxes) illustrating aspects of the different areas of public policies
- A commentary on the key issues raised by the good practices, including supplementary examples where appropriate.

#### 3.1 ORGANISATIONAL ARRANGEMENTS

##### *Introduction*

Research has identified the organisational arrangement surrounding the EMAS I Regulation as one of the key factors accounting for the considerable differences in EMAS participation rates between Member States. One study, which explains the varying number of EMAS participants in four countries (France, Germany, the Netherlands and the United Kingdom) as being the result of different implementation processes, suggests that the relative success of EMAS in Germany was partly due to the involvement of business organisations in the EMAS accreditation, supervision and registration system.<sup>35</sup> This involvement led companies to trust the system and encouraged business organisations to promote EMAS.

Whilst the EMAS Regulation gives public authorities an important role in establishing and administering the scheme<sup>36</sup>, it is far less specific on the way in which business organisations can be involved in relevant tasks. Contrary to this, the operation of EN ISO 14001 – in general based around national standardisation organisations and commercial certification bodies – is largely handled in the private sector. Thus, organisational arrangements for EN ISO 14001 more readily incorporate business stakeholders. On the other hand, the role that public authorities play in relation to the standard is often limited.

##### *Good practice examples*

Below three good practice examples are presented illustrating both the successful involvement of business organisations in the administration of EMAS (good practices 1 and 2

from Germany and Denmark) and the useful role public authorities can play in the operation of EN ISO 14001 (good practice 3 from the Netherlands).

#### **Good practice 1 – Organisational Arrangements for EMAS – Germany**

In the German organisational structures for the administration of EMAS, business organisations play a prominent part, which explains to some degree the good relationship between business and EMAS. The current organisational set-up was agreed in 1995, after a conflict between the Federal Environment Ministry (BMU) and environment NGOs on the one hand and the Federal Ministry of Economic Affairs (BMWI) and business organisations on the other. Whereas the BMU wanted public authorities to have a decisive influence on the whole system, the BMWI, pointing to the voluntary and business-led nature of EMAS, stressed the need for business organisations to play a central role in its implementation.

A compromise led to the following institutions:

- The German Environmental Verifiers Association (*Deutscher Akkreditierungsausschuß* - DAU), which is responsible for the accreditation and supervision of environmental verifiers. DAU is owned by various business associations (e.g. the BDI and the ZDH) and by the Chambers of Industry and Commerce (DIHK) and the Chambers of Crafts (HwK) (hereafter referred to as the “Chambers”)<sup>37</sup>.
- The Environmental Verifiers Committee (*Umweltgutachterausschuß* - UGA) established under the German Environmental Audit Act; this supports and controls the DAU in order to ensure the quality of the EMAS accreditation and supervision system in Germany. The Committee consists of 25 members representing all interested parties, including business organisations and environmental NGOs<sup>38</sup>.
- EMAS registration is housed at the regional Chambers DIHK and HwK<sup>39</sup>, which act as EMAS competent bodies.

#### **Stakeholder participation builds trust**

The involvement of business organisations – as one of the key stakeholders in EMAS – in the scheme’s administrative set-up dissipated companies’ fears that their participation in EMAS would lead to additional controls from regulatory authorities. Moreover, it also meant that business organisations had a clear interest in the scheme’s success and contributed actively to its promotion. The registration of EMAS companies by the Chambers offers several benefits. Firstly, the Chambers are in regular contact with the companies in their catchment areas and they speak their language. Secondly, the Chambers see themselves as a service supplier and seek efficient solutions in administrating EMAS registrations, for instance by avoiding excessive administrative burdens for companies. Finally, the Chambers act as moderators when problems arise between an enterprise and its verifier or environmental authorities.

#### **Effectiveness in promotion**

The integration of the Chambers into the organisational framework of EMAS means that they promote the scheme in their regions, e.g. by publicising newly registered EMAS companies in their magazines and by raising awareness of the benefits of the scheme. These activities provide the Chambers with relevant environmental know-how and make them more receptive to environmental initiatives. This openness was very helpful when wide-ranging voluntary environmental agreements such as the “Environmental Pact” in Bavaria or the “Environmental Alliance” in Berlin were being developed.

*Interviews with Jürgen Richter, IHK Berlin and Hermann Hühwels, Deutscher Industrie- und Handelskammertag (DIHK)*

<http://www.ihk-berlin24.de> <http://www.umweltgutachterausschuss.de>

<http://www.dihk.de/inhalt/themen/innovationundumwelt/umweltberatung/audit.htm>

The German good practice described above illustrates how business organisations are intimately involved in the operation of EMAS. This has resulted inter alia in a decentralised structure with close proximity to the user community. A key feature of the following good practice, from Denmark, is the way in which the country's organisational structures for EMAS were developed in partnership between government, industry and other relevant stakeholders, and how this and their on-going involvement have built trust and led to an important emphasis on SME engagement in EMSs. The Danish model based on a multi-stakeholder EMAS Council is also used in other countries, for instance the Czech Republic.

#### **Good practice 2 – Organisational Arrangements for EMAS – Denmark**

The relative success of EMAS in Denmark can in part be attributed to the involvement of all relevant stakeholders. Stakeholder involvement was formalised by means of the Environmental Management Council, which operated between 1994 and 2000. The Council, which monitored the implementation of EMAS and the promotion of EMSs, brought together government (e.g. the Danish Environmental Protection Agency and the Danish Agency for Trade and Industry), industry representatives, including those of SMEs, local authorities, environmental NGOs, lawyers, accountant organisations etc.

##### **SME-orientated**

The involvement of SMEs as a key stakeholder, with a prominent voice, and the recognition of their needs encouraged them to become active in the area of EMSs. Between 1994 and 2000, the Council advised on the disbursement of some DKR 120 million with the aim of promoting EMSs among SMEs through awareness raising, technical support, network building etc.

##### **Reproducibility**

The relative success of this model can to a certain extent be attributed to Danish 'business culture'; one in which environmental issues were, and still are, key performance drivers. Such a model is seen as having the potential for wider replication in other countries where the level of environmental understanding and consciousness among the business community is relatively high and where business support networks are mature.

*Interview with Ulla Ringbaek, Danish Environmental Protection Agency*

[www.mst.dk](http://www.mst.dk)

In contrast to the two preceding cases – where business organisations and other stakeholders have been involved in the mainly public set-up for EMAS – the case from the Netherlands below shows the opposite: the involvement of public authorities in the largely private set-up for EN ISO 14001 and how this has strengthened the credibility and value of EN ISO 14001 systems.

#### **Good practice 3 – Organisational Arrangements for ISO 1400 – The Netherlands**

This good practice emphasises the role played by the Dutch government in maintaining a robust EN ISO 14001 certification procedure and how this gave credibility to the scheme. The current Dutch system was developed in response to concerns from both government and businesses that the quality of certification to the ISO 9000 series of quality standards had been gradually eroded, as previously each certification body interpreted the quality standards differently. A new arrangement had to ensure that EMSs would not succumb to a similar fate.

Therefore, in 1995, the "Association for the Co-ordination of Certification of EMSs" (*Stichting Coördinatie Certificatie Milieuzorgsystemen* - SCCM), a not-for-profit organisation set up with public funding, was given the responsibility to oversee the certification of ISO 14001.<sup>40</sup> A large number of stakeholders are involved in SCCM's work including environmental authorities (such as the Ministry of Housing, Spatial Planning and

Environment), industry representatives, environmental NGOs and affiliated certification bodies. SCCM creates the preconditions for ensuring that certified EMSs are of the same quality across the country, thus ensuring parity, accountability and transparency. It draws up the ‘rules’ which certification bodies accredited in the Netherlands<sup>41</sup> must comply with in their work and it enters into agreements with certification bodies about using them. The elements of an EMS laid down in EN ISO 14001 have been adapted and strengthened by SCCM through the work of a dedicated Council of Experts. One aspect of the agreement that SCCM has with certification bodies is that they give SCCM copies of the certificates and details of any changes to these<sup>42</sup>. On the basis of this information, SCCM keeps an on-line database of EN ISO 14001 certified organisations. This web site is important because certified companies check whether or not they are on the list and remind their certification body if not.

#### **Maintaining the effectiveness from a robust system**

The robustness of the agreed rules regarding EN ISO 14001 is maintained in a variety of ways. For example, the Dutch Council for Accreditation (RvA) supervises certification bodies by attending random certification audits. In addition, SCCM invites environmental authorities to comment on their experience with companies certified to EN ISO 14001, for instance with respect to compliance with environmental legislation and continual improvement. Moreover, SCCM asks certified companies about their relationship with environmental authorities and how certificates are used in practice. Under the Dutch system, certification bodies are obliged to give SCCM information on the amount of time they have spent certifying specific companies to EN ISO 14001 and any discrepancies are investigated.

#### **Positive feedback from the user community**

Feedback from EN ISO 14001 certified companies, 70 per cent of which have fewer than 250 employees, is positive. They appreciate the robustness of the system and rigorous monitoring, which ensure a high standard of legal compliance and continual improvement. This improves relations between the companies and environmental authorities, thus reducing the need for tight regulation, and lowers costs. Although SMEs are not specifically targeted under this approach, SCCM ensures that their needs are addressed through having at least one member of its Committee of Experts with strong experience of working with SMEs.

The Dutch model is not an example of a ‘heavy-handed’ approach to EMS certification led by the State. Rather, it is one of a genuine partnership between government, industry and certification bodies. The relatively small size of the Netherlands coupled with the Dutch culture of dialogue are among the key reasons for the scheme’s success, but replication elsewhere in Europe could be possible.

*Interview with Frans Stuyt, SCCM*  
[www.sccm.nl](http://www.sccm.nl)

### **Commentary**

The main common features of the three good practice case studies described above could be summarized as follows:

- The involvement of key interested parties – namely businesses and other stakeholders in the organisational structures for EMAS and public authorities in the set-up for EN ISO 14001 – ensures that interests remain balanced and trust and credibility are enhanced.
- The organisational arrangements for EMAS and EN ISO 14001 are linked and to a certain degree interdependent.

Two additional key features can be highlighted for the two EMAS good practices:

- The importance of creating a suitable administrative and geographical proximity to business, i.e. between the organisations administering EMAS and the user community.
- The link between the nature of the organisational set-up and the ability to convey a consistent message in the promotion of EMAS vis-à-vis its (potential) users and the market place.

### *Trust and Credibility*

In the two EMAS-related good practice examples, the intimate involvement of business and their interests in the process, at an early stage, not only builds trust in EMAS, but also leads to more actors being involved in promoting the scheme. At the same time, associating other actors alongside business organisations addresses concerns that too much business involvement weakens the value of EMAS (e.g. in the eyes of environmental non-governmental organisations (NGOs) or the general public). A balanced involvement of stakeholders creates a climate of trust, which is important for the operation of EMAS.

In contrast to Germany and Denmark, the French set-up for EMAS gave a central role to the licensing and regulatory authority (DRIRE). This involvement did not build confidence in the business community, and was objected to by the French Assembly of the Chambers of Commerce and Industry (ACFCI), because of the perceived conflicting roles played by the DRIRE: both as a regulator and a promoter of a voluntary scheme.<sup>43</sup> Despite the recent establishment of a stakeholder committee to promote EMAS with a more business-oriented structure (e.g. the committee's secretariat is held by the Chamber of Commerce), the legacy of the original system appears to persist and interest in EMAS has not improved in France.

Experience from Austria also suggests that aligning the EMAS organisational set-up too closely to bodies which regulate the very companies that might participate in the scheme may have negative effects. To date, the Austrian Federal Environment Agency has been responsible for registering companies to EMAS. This creates a perception that the businesses registering to EMAS are being doubly regulated: both through legislation and permits and as part of their participation in EMAS. Because of this experience, the Federal Ministry for Economy and Labour and the Chamber of Commerce propose that, as part of the next revision of EMAS, responsibility for EMAS registration should shift to local authorities. The reasons for this proposal are twofold: firstly, to counter the perceived link between regulator and EMAS and, secondly, to utilise the contacts that local authorities have with businesses in their vicinity.

Generally speaking, the role of the State in the organisational set-up for EN ISO 14001 is more limited than it is in the context of EMAS. For instance, there is no requirement for a central registration body to register participants in EN ISO 14001 and in a number of Member States public authorities are not involved in the controls exerted over the certification bodies which assess companies to the standard. These largely private arrangements create nervousness amongst some national public administrations and regulators. They can devalue the credibility of EN ISO 14001 in the market place, as the



relationship between the user community and certification bodies may be seen as too “cosy”. The good practice case from the Netherlands addresses these possible weaknesses head on by involving relevant public authorities, thus creating a balance between private and public interests.

#### *The link between EMAS and EN ISO 14001*

Ensuring the credibility of EN ISO 14001 certificates is not only a goal in itself, it may also help guarantee the quality of EMAS registrations. The reason for this is that EMAS verifiers are required to accept accredited certification to EN ISO 14001 as fulfilling the EMS component of EMAS. Therefore, EN ISO 14001 certifications and associated accreditation systems need to be of good quality. The quality and credibility of accreditation may become more important following the recently adopted British Standard BS 8555, which introduces a staged approach to EMS implementation (see section 3.4.1). The planned system of accredited recognition for the different stages of BS 8555 will involve accredited inspection bodies; the credibility of their activities will have an effect on formal EMSs because the different EMS stages under BS 8555 can be used as stepping stones to EN ISO 14001 and/or EMAS.

#### *Proximity to Business*

The largely private sector nature of EN ISO 14001 (in terms of accreditation and certification) means that its set-up automatically has close administrative and geographical proximity to the business community. For EMAS, this is not necessarily the case, although some countries do have a decentralised system. In the German good practice example, the involvement of business and their representatives in the operation of EMAS creates a sense of ownership. This is further emphasised by the responsibility for registration being given to the Chambers of Industry and Commerce (DIHK) and Chambers of Craft (HwK). Not only does this structure bring EMAS closely aligned to the Chambers’ other functions, therefore building promotional opportunities, but it is also geographically decentralised. Although Denmark has a centralised registration system, the country’s size and the involvement of a range of business stakeholders in the set-up for EMAS mean that the perception of remoteness of a centralised system does not arise.

As noted above, the Austrian Federal Ministry for Economy and Labour is in favour of changing Austria’s centralised EMAS registration system to a decentralised system administered by local authorities. This proposal is in part stimulated by the desire to create stronger links with the business community.

#### *Consistent Message in Promotion*

A particular feature of both EMAS good practice examples is the ability which the organisational set-up affords all parties to develop a consistent promotion message on the scheme. The high degree of stakeholder involvement allows different views to be aired and understood so that, in the end, a consistent message about the value of EMAS is delivered, and businesses become engaged in the promotion of the scheme. In the case of Denmark, a particular effort has been made to tailor the message to SME needs.

The case of EN ISO 14001 is different, in the sense that the standards-making process incorporates a consensus building mechanism involving business (although not necessarily SMEs) and other interested parties. This partially explains the broad business acceptance and awareness of international standards such as EN ISO 14001.

#### *SME involvement in standards*

The above points to a final important aspect: the participation of SMEs in the development of standards and relevant legislation. A common complaint from the SME community is that standards and regulations are developed without adequate SME input<sup>44</sup>. As a result, EN ISO 14001 and EMAS may appear remote from their experience and difficult to apply. A particularly important aspect of the development of BS 8555 was the strong involvement of SMEs and their representatives. This brought practical SME experience to the standard's development and resulted in a product suiting their needs.

#### ***Final remark: relevance of organisational arrangements to EMS uptake by SMEs***

SMEs are more likely to introduce an EMS when the organisations set up to administer such systems inspire trust, understand the needs of SMEs, have sufficient proximity to the business community and convey a clear and consistent message about the benefits of (different types of) EMSs.



## 3.2 EMBEDMENT OF EMSs

### *Introduction*

In the case of embedment, initiatives to promote the uptake of EMSs are integrated into comprehensive, strategic frameworks agreed between public authorities and industry and/or their representative organisations. Commitments agreed between these actors can cover a wide range of environmental objectives and accompanying measures, including EMS-related provisions. Such frameworks are frequently in the form of voluntary agreements, and are often linked to wider sustainable development goals<sup>45</sup>. The motivation for such initiatives and for the participation of key actors is the mutual desire to gain benefits from the agreement.

### *Good practice examples*

The good practice examples below illustrate different forms of embedment, both at regional, local and sectoral level<sup>46</sup>. They are drawn from: Germany – a regional voluntary agreement between the State of Bavaria and Bavarian business; Finland – local plans to achieve Agenda 21 goals by involving small businesses in EMSs; and the Netherlands – business sector “covenants” to achieve specific integrated environmental targets.

#### *Embedment at regional level*

The “Environmental Pact” in Bavaria (Germany) presented below is a well-developed agreement between business and the regional government to guarantee advantages for both sides. An important feature of the Pact is that it introduces certain forms of regulatory relief in exchange for voluntary measures by enterprises.

#### **Good practice 4 – The Environmental Pact of Bavaria and EMSs – Germany**

The “Environmental Pact” of Bavaria (*Umweltpakt Bayern*) was introduced in 1995 as a voluntary agreement between the German *Land* of Bavaria and Bavarian business, with commitments on both sides. Its overall aim is to achieve progress towards sustainable development by using the competences and resources in both the regional government and businesses in the most effective way. The idea of the Environmental Pact is to promote voluntary environmental measures on a large scale, using a variety of approaches, in combination with measures concerning regulatory relief and deregulation. Based on the Pact’s success, in 2000, the partners agreed to extend its life for another 5 years.

The Environmental Pact was the first of its kind in Germany and represented an innovative development in environmental policy and the use of voluntary instruments including EMSs. It combines a large set of objectives, measures and projects (e.g. in relation to waste reduction, energy saving and the use of renewable energy) under one common label. Today, more than 3,500 Bavarian companies participate in the Pact. To become a member a company must carry out at least one voluntary environmental measure. Participants can use the logo on their premises and in doing so publicise their achievements and the Pact to the public.

#### **EMS uptake as a clear objective**

The promotion of EMSs (particularly – but not exclusively – EMAS), is an explicit objective of the Pact. The target is to increase the number of EMAS registrations<sup>47</sup>, so that by 2005 50 per cent of the employees in the manufacturing sector will work in an EMAS-registered company. EMSs are promoted in various ways:

- Funding for EMS introduction<sup>48</sup>
- Provision of information and sector specific guidelines
- Research projects on integrated management systems
- Forms of regulatory relief and deregulation including the reduction of administration fees
- Promotion of a specific, less formal EMS for crafts companies.

EMAS registered companies are offered several forms of regulatory relief, for example reduced requirements concerning reporting and documentation and a 30 per cent reduction of fees paid for emission-related permit procedures. To obtain the same relief as EMAS registered enterprises, companies certified to EN ISO 14001 have to show continual improvement in their environmental performance and they must demonstrate legal compliance and inform the public regularly.

#### **SME-orientated**

The Environmental Pact helps raise awareness among SMEs.<sup>49</sup> It promotes a general openness to environmental issues; offers an easily accessible, clear combination of instruments (funding, information, guidelines etc.); stresses the voluntary approach; and guarantees that the instruments provided fit the needs of the SME.

An interesting project of the Pact is the “Quality Association of Eco-sensitive Craft Establishments” (*Qualitätsverbund umweltbewusster Handwerksbetriebe - QuH*), founded by the local Chamber of Crafts in 1997. The focal point of QuH is a label which is awarded to SMEs which comply with 11 strictly defined environmental criteria.<sup>50</sup> Whilst inspired by the requirements of EMAS, these criteria can be regarded as an example of a less formal, adapted EMS. Adherence to the criteria is monitored every second year by an external auditing company. It is possible for an enterprise to join QuH immediately and be awarded the label, without any further training or auditing, if it has already introduced an EMS in accordance with EMAS or EN ISO 14001. For SMEs, the cost for participation in the QuH is partly funded by the Environmental Pact. To date, 156 craft SMEs have participated in the initiative.

#### **Effectiveness**

After eight years of operation, the effectiveness of the Bavarian *Umweltpakt* is evident, given the large numbers of companies, institutions and public organisations involved, and the high degree of awareness and acceptance of the Pact amongst the business community. Its effectiveness is also illustrated by the emergence of similar pacts in other German *Bundesländer* such as Hessen and Sachsen<sup>51</sup> as well as, more recently, Saarland and Hamburg. Public awareness of the Pact is also growing. The Pact still requires state support in the form of organisational and financial support. The Pact’s good reputation in the business community means that companies contribute resources to become involved in its projects and measures.

*Interview with Rainer Guse, Office of the Environmental Pact of Bavaria in the Bavarian Ministry for Regional Development and Environmental Affairs*  
<http://www.umweltpakt.bayern.de>

The particularly interesting aspect of this and other similar regional agreements in Germany is their flexibility and the variety of different options provided to business that want to participate. The good practice example suggests that the availability of a logo signifying participation in the Pact is important to the business community.

The province of Turin in northern Italy provides another successful example of an EMS-related voluntary agreement at regional level. Concluded in 1999 between the regional authorities and the Turin industrial associations against the background of Agenda 21, the agreement aimed at achieving certification or registration of at least 100 organizations by December 2002. In return, the administrative procedures for companies with an EMS would be simplified and support for pilot projects would be granted. The results of the agreement

have been encouraging: at the end of 2002, 150 companies (units) had obtained an EN ISO 14001 certificate and four were EMAS registered. All in all, EMS uptake in the region is well above the Italian average. In 2003, the agreement was renewed to further increase the number of companies with a certified EMS.<sup>52</sup>

### *Embedment at local level*

Environment-related “public/private partnerships” can also be developed at a local level. The motivation for establishing such partnerships can stem from the desire by local authorities to articulate Local Agenda 21 strategies and to engage enterprises in their implementation. In other words, individual companies can use their EMS as an explicit contribution to the local environmental strategy or programme, and the company’s environmental objectives and targets can be set in light of the overall environmental objectives and targets agreed for the local environment as a whole<sup>53</sup>. In Finnish municipalities this approach is fairly common.

#### **Good practice 5 – Agenda 21 and EMSs – Finland**

Of the 450 municipalities in Finland, around 300 have developed Agenda 21 Strategies. Approximately 90 of these<sup>54</sup>, mainly the larger ones, have set targets for the uptake of (both formal and informal) EMSs by enterprises. In general, it has been the larger municipalities including those of towns and cities that have adopted this approach. The motivation for setting such targets stems from the understanding that if local authorities want to meet their Agenda 21 environmental targets, such as the reduction of CO<sub>2</sub> emissions or waste, a broader range of actors will need to be engaged.

#### **Clear objectives**

The City of Mikkeli – situated in the Etelä-Savo area known as an “eco-region” – has set a target that 80 per cent of its enterprises employing over 20 people should establish an EMS (formal or less formal) by 2005. This translates into around 140 enterprises, predominately SMEs. The target is ambitious and progress has been slow<sup>55</sup>. It is estimated that about 10 per cent of SMEs now have a formal or less formal EMS in place. The municipality has supported projects to promote EMSs and has identified that smaller firms need a simplified EMS. An existing project is seeking to develop such a simplified EMS<sup>56</sup> following the model of work packages, typically developed and funded by the central government. If the model is successfully completed, SMEs will be able to use the work packages to implement environmental management. They will receive 80 per cent funding to do so.

#### **Stakeholder participation**

Co-operation via public/private partnerships offers local authorities a means of engaging a range of stakeholders to help achieve strategic sustainable development goals. The business community, as a key actor and influence on a region’s environmental performance, is seen as an important partner. Adopting targets for EMS uptake by enterprises is viewed as a mechanism to help improve both enterprise performance and the regional environment.

The positive impacts of public/private partnerships are also demonstrated by a co-operative project run by the consultancy arm of the Finnish Federation of Municipalities. The project, between 30 municipalities, business associations and 215 enterprises, focused mostly on waste management and the development of environmental policies for the companies, with the aid of an EN ISO 14001 model. As a result of the project, prejudices between partners diminished. There was an increase in openness; competence of SMEs was increased; working conditions improved; and companies found it easier to access environmental experts in the local authority. The uptake of formal EMSs was not monitored.

#### **Synergies with the policy context – the value of EMS targets in Local Agenda 21**

Setting EMS targets – and the monitoring of them – within Local Agenda 21 policies have value because they:

- Focus public policy on a broader range of actors to achieve goals
- Facilitate the development of public/private partnerships
- Share responsibility for sustainable development
- Raise the awareness and possible uptake of EMSs amongst SMEs.

Nevertheless, it is acknowledged that some of the Agenda 21 targets for EMS adoption amongst enterprises are ambitious and not achievable within the deadlines set, unless considerable and, in all likelihood, unavailable resources are deployed.

*Interviews with Päivi Kippo-Edlund, Efektia Oy/Efektia Ltd and Timo Lehtonen, City of Mikkeli*  
[www.efektia.fi](http://www.efektia.fi) and <http://www.mikkeli.fi/ymparisto/versio.html>

The above good practice from Finland shows that a major hurdle for local authorities in engaging local enterprises in environmental strategies and programmes is the lack of human and financial resources, both within small companies and in local authorities themselves. This barrier, coupled with the lack of drivers experienced by these enterprises, means that engagement is a resource-intensive exercise.

#### *Embedment at sector level*

Environment-related voluntary agreements at sector level are concluded between a specific business sector – usually industrial – and public authorities. Sectoral voluntary agreements may detail<sup>57</sup>:

- Specific environmental objectives and targets for the sector as a whole
- Targets and EMS provisions for individual enterprises
- Requirements related to reporting on enterprise achievements against targets
- A mechanism to monitor progress against the voluntary agreement.

Amongst the most developed sector-level voluntary agreements in the EU are the 11 negotiated agreements or “covenants” in the Netherlands:

#### **Good practice 6 – Covenants (“Negotiated Agreements”) and EMSs – The Netherlands**

Developed at the beginning of 1990s, negotiated agreements or covenants (*convenanten*) encapsulate the evolution of Dutch environmental policy, which sought to develop shared responsibility by the different actors for environmental goals, the integration of environmental media and the achievement of the targets set in consecutive national Environmental Policy Plans. This good practice shows how covenants effectively integrate EMSs as one tool amongst others and increase the uptake of such systems by SMEs. Such covenants currently exist in 11 industrial sectors (such as metal products, printing, concrete & cement and chemicals)<sup>58</sup> covering over 20,000 enterprises (out of an estimated 400,000 in the Netherlands) and accounting for 90 per cent of all industrial pollution.

Covenants include the following features:

- The sectors have specified environmental targets for 2000 and 2010.
- The regional licensing authorities<sup>59</sup> and the sector sign a covenant agreeing the sector-wide plan.

- In consultation with licensing authorities, companies draw up four-year company environmental plans (CEPs). The CEPs incorporate their sector's BAT targets on which companies have to report annually.
- For each sector, a consultative committee composed of industry and/or their trade association, licensing authorities and the relevant ministries (e.g. for economic affairs, environment, transport, public works or agriculture), agree best available technology (BAT) workbooks, co-ordinate and review implementation, report annually on progress and act as a solution provider.

### **Clear objectives for EMS uptake**

One of the key issues of the sector-specific covenants is that all companies must develop an EMS. This may be certified (for some companies, mainly large ones, certification is mandatory) or be equivalent to a certified EMS. The features of a non-certified EMS are checked against 11 questions, for instance with regard to an overview of all relevant environmental aspects and legal requirements, the definition of relevant responsibilities, and the existence of an environmental management statement<sup>60</sup>. This less formal EMS follows the PDCA model.

### **SME-orientated**

Covenants take account of SME needs in a number of ways. In sectors where SMEs dominate, e.g. the printing sector with over 3000, mostly small companies, enterprises are not required to develop Company Environmental Plans. It is considered that SMEs lack the capacity to plan four years in advance; therefore SMEs agree annual targets based on their sector's BAT workbook. Furthermore, whilst all companies are required to develop an EMS as part of the covenant, SMEs are mostly left the choice to implement a less formal, non-certified EMS.

### **Effectiveness – Promoting EMSs uptake by SMEs**

The achievement of the covenants' goals is monitored by "FO-Industrie", an independent organisation whose role is to review progress made<sup>61</sup>. The 11 covenants clearly promote EMS adoption. A recent study shows that seven percent of all "covenanted" enterprises have a certified EMS, compared to 1 percent in non-covenanted sectors.<sup>62</sup> In addition, many smaller enterprises have implemented non-certified EMSs. At the same time, there is a known, but as yet not quantified, problem with "free riders"<sup>63</sup>.

### **Positive feedback from users**

A particular criterion where covenants score highly is positive feedback from users. In general, industry is very supportive of covenants. Trade associations and their members have been empowered by their participation in covenant consultative committees and the process of determining BAT workbooks and sector targets. They have also experienced the benefit of hearing from the diverse range of licensing authorities (e.g. in different regions<sup>64</sup>) participating in consultative committees. These authorities speak with "one voice" on BAT sector targets and as such remove conflicting messages.

### **Reproducibility**

It is reasonable to ask whether covenants are a uniquely Dutch approach that could not be reproduced elsewhere. Certainly, they reflect the Dutch consensus ("polder") model, i.e. to share responsibility and negotiate policy targets and the way to achieve them. This is a condition for success that may be culture-specific. However, negotiated agreements with industrial sectors have also been employed in other countries in Europe and the USA.

*Interview with Bonny Donders, the Ministry of Housing, Spatial Planning and the Environment  
[www.minvrom.nl](http://www.minvrom.nl) and [www.fo-industrie.nl](http://www.fo-industrie.nl)*

Promising examples of similar sector-level voluntary agreements, which, however, have not yet delivered full results and are only just being applied to SMEs, are the “continuous improvement contracts” in Portugal. As part of these contracts – that were concluded between the Ministry of the Environment, the Ministry of Economic Affairs as well as industry – enterprises in the cement and glass packaging sectors produce individual plans for continuous improvement of environmental performance and, often with certification to EN ISO 14001 as an intermediate step, work towards EMAS registration<sup>65</sup>. The success of these two contracts with large capital-intensive companies (i.e. improving their environmental performance, being well prepared for IPPC and having a high level of EMS uptake) has stimulated the agreement of a similar “continuous improvement” contract in the transport sector<sup>66</sup>. This will cover around 30 SMEs and aim for their registration to EMAS<sup>67</sup>.

### *Commentary*

The three examples from Germany, Finland and the Netherlands show that:

- There is merit in using EMSs as one tool amongst others in broader environmental policies.
- The definition of the EMS used is important: it may be a formal one (EMAS or EN ISO 14001) or a less formal one defined around key EMS elements.
- Involving key stakeholders in a consensus approach in relevant processes is essential for the development of ownership and support.

### *Embedment of EMSs as one tool amongst others*

The three good practices illustrate that policies which embed EMSs into strategic frameworks at regional, local or sector level have added value in terms of EMS uptake by businesses including SMEs. The examples also underline that the inclusion of EMSs in strategic agreements is a means to deliver broader environmental policy aims, not an end in itself.

In each case, the EMS is only one element of a range of tools. The regional and sector-level initiatives described above have also other initiatives to offer businesses, e.g. provision of sector guides, BAT workbooks, subsidies and forms of regulatory relief. The local level example from Finland appears to be the “softest” measure to involve enterprises, as it is not based on signed agreements. In the cases of Germany and the Netherlands, the scale of the agreements (in terms of geographical spread, numbers of enterprises and organisations involved as well as the range of measures covered by the agreement) means they have been drawn up as more complex and formalised initiatives.

### *Definition of the EMS*

The definition of the EMS within a voluntary agreement is important. The value of formal EMSs in such agreements is that they are defined in publicly available documents and articulate widely understood EMS elements. In addition, using formal EMSs, particularly EMAS, may enhance the credibility and robustness of the agreement. However, restricting



the EMS to EMAS and EN ISO 14001 only may not be appropriate to the form of the agreement and the businesses covered by it. There is recognition in the three examples that SMEs may require a less formal EMS tailored to their needs. In the Dutch case, the flexibility offered to different sizes of firms in meeting the requirement to establish an EMS allows greater possibility for SMEs to achieve the agreements' targets. A simplified EMS is also employed in the Finnish good practice example.

However, a less formal EMS does not mean an undefined EMS. Utilising an EMS that does not have the built-in recognition of systems such as EMAS and EN ISO 14001 means that the agreement must clearly define what it requires of an EMS and how these requirements will be checked. An important point is to develop an EMS which is suitably challenging and flexible.

#### *Consensus approach*

Public administrations at local, regional or national level are the key initiators and drivers of the strategic agreements described in the good practices above. Multi-stakeholder involvement has an important role to play in defining the frameworks' targets and in contributing to understanding and trust between the different partners. In the Netherlands, the process can be viewed as a learning cycle for all actors supported by a neutral and independent facilitator.

The scope of a strategic framework is defined either in geographical or sectoral terms. In either model, an important issue is that the public administration takes account of the enterprise composition of the region/sector. This may require varying implementation requirements for different sizes and types of enterprise.

#### ***Final remark: relevance of embedment to EMS uptake by SMEs***

The use of a defined EMS in a strategic (voluntary) framework or agreement covering a business community will increase the number of enterprises with a formal or less formal EMS. It is important for SMEs to have an opportunity to engage in such agreements and influence their development, including how EMSs are defined and checked. For many SMEs this will be their first introduction to EMSs. It is important that they are not left unaided but supported with other measures to motivate them and assist them in their EMS implementation. This will encourage a part of the participating SMEs to install, or gradually progress towards, a formal EMS.

### 3.3 ASSISTANCE PROVIDED TO ENTERPRISES IN ESTABLISHING AN EMS

Establishing an EMS can be a relatively complex and costly exercise, especially for SMEs. Public administrations – sometimes in collaboration with other actors – can take a variety of measures to assist SMEs in this task. In this section consideration is given to the following forms of assistance:

- Direct subsidies
- General and technical information
- Promotion of SME-friendly implementation of formal EMSs
- Sector-specific initiatives
- Network approaches.

#### 3.3.1 DIRECT SUBSIDIES

##### *Introduction*

In most Member States direct subsidies play a central role in attempts to promote the uptake of EMSs.<sup>68</sup> Such subsidies cover part of the costs inherent in adopting an EMS. Whilst funding is often provided in conjunction with other measures and concepts (e.g. provision of information, technical assistance and staged approaches), the focus of this section is on initiatives that have subsidies as their main characteristic.

Subsidy schemes for EMS-related activity are numerous and widespread in Europe. Subsidy schemes vary according to the following aspects:

- Geographical scope: national, regional or local
- The actors in charge of the scheme: e.g. public or private; environment or industry-related
- The total funding and subsidy rates available under the scheme
- Eligibility of the recipients of funds: e.g. SMEs or all enterprises; specific industrial sectors; individual companies or networks
- The type of EMSs eligible for funding: EMAS, EN ISO 14001, less formal approaches
- Eligibility of activities: exclusive focus on EMS implementation or EMS as one eligible activity amongst others; hiring external consultants; developing internal competence; recruiting in-house specialists; verification/certification; re-registration.

Despite the diversity of possible “design features”, most subsidy schemes supporting EMS implementation are organised along similar lines. A conventional scheme gives money to an individual company to hire a consultant to set up an EMS and/or co-finances certification or verification. There are many examples of this model, both in the current and the new Member States. A case in point is of the grant schemes administered by the Polish Agency for Enterprise Development (PARP), which support the planning, implementation and improvement of EMSs and other management systems (quality, health and safety). The



schemes cover up to 60 per cent of consultancy and training costs for management system implementation in SMEs and 60 per cent of audit/certification costs.<sup>69</sup>

### *Good practice examples*

Because of the vast array of the type of conventional subsidy schemes described above and familiarity with these, this report focuses on examples of funding schemes presenting a number of innovative features and the lessons these offer. Two of the presented good practices, from Sweden (good practice 7) and Germany (good practice 8), illustrate subsidy options which do not see funds going directly to individual enterprises; instead, they see the monies supporting *networks*. The third example, from Denmark (good practice 9), shows how subsidies are used to *build internal capacity* within SMEs by the recruitment of in-house expertise. A final example, from Portugal (good practice 10), illustrates how in the context of the EU Structural Funds financial support for EMS implementation can be *linked to support for mainstream investment* (i.e. investment that is not primarily environment-related).

#### **Good practice 7 – The Environment-Driven Business Development grant scheme – Sweden**

The Swedish “Environment-Driven Business Development” (*Miljödriven Affärsutveckling* - MAF) grant scheme provides financial support to encourage environmental activities through networks of SMEs. The MAF scheme is open to local and regional institutions (e.g. local government), NGOs, trade organisations, industrial research institutes, universities or groupings of companies. Until May 2003, the Swedish Ministry of Industry, Employment and Communications had allocated SEK 21.5 million to the MAF scheme, administered by the governmental Agency for Business Development (NUTEK) since 2001 and set to run until 2004.

The scheme is divided into two thematic areas. The first addresses environmentally sound product development and the second relates to operational development that focuses on continuous improvement and EMS adoption in companies.

#### **SME-orientated**

In Sweden, SMEs account for the vast majority of enterprises<sup>70</sup> and the MAF scheme has a clear SME focus. It aims to strengthen their competitiveness by encouraging them to develop their operations and products from the perspective of sustainability. The scheme focuses on improvements in different areas, from reducing environmental impacts to offering new business opportunities. Participating SMEs tend to be heterogeneous in character. Company size also varies, but a large proportion tends to have around 50 employees. Applicants tend to have some environmental issue track record, or at least experience of working with quality issues, and an interest in environmental management.

#### **Innovative character: use of networks**

The innovative aspect of the MAF scheme is that finance is not given direct to individual companies. The funds go to regional or local actors, who act as project leaders. Project leaders can be universities, industrial research institutes, local government organisations, consultants or, although less frequently, a group of companies. Projects are conducted through networks of SMEs with companies gaining access to knowledge within the network, to experts and to events such as competence-raising seminars.

NUTEK’s project selection process stipulates that applicants must co-operate in a network (with a minimum of three companies), fulfil an existing need, be based within a specific trade or industry and produce documentation that makes project results accessible to a larger group. For the main projects, NUTEK provides co-financing of up to 50 per cent of the total project cost (with an upper financial limit of SEK 800,000<sup>71</sup>). Participant companies are expected to contribute by using their own staff and making obligatory cash investments in the project of at least SEK 5,000 per company<sup>72</sup>.

**Effectiveness**

NUTEK considers it important to obtain (both positive and negative) feedback on the MAF scheme. A condition of a grant award is that project leaders must dedicate two to three days to evaluation, mainly in the form of seminars. In May 2003, NUTEK invited all project leaders to discuss the results obtained until then. It turned out that at least 300 SMEs were involved in the scheme; that at least 25 of them had been able to implement internal systems to stimulate and communicate continuous improvements within the company's existing EMS; and that 11 "good practices" had so far been identified. Evaluations of an earlier, similar programme to promote EMSs in SMEs ("MISF" – 1996-1998) showed that companies found the network of participating SMEs a very valuable source of information and support (although only a few networks continued after project completion). Furthermore, 66 per cent of the participating SMEs had implemented a formal EMS, although this was not necessarily the project's goal.

*Interview with Tomas Gardstrom, NUTEK*

[www.nutek.se](http://www.nutek.se)

In the above good practice example from Sweden, funding does not go to individual enterprises but is channelled to networks through a (decentralised) project co-ordinator. In this way the funding seeks to have a multiplier effect. These network-building aspects – as well as the role played by project co-ordinators – are also features of the following German good practice example:

**Good practice 8 – Convoy funding – Germany**

The "Convoy" funding scheme (*Öko-Audit im Konvoi*) was introduced by the Ministry for Environment and Transport in the German *Bundesland* Baden-Württemberg. Its genesis stems from a dialogue between businesses, the administration and environmental NGOs during the 1990s, which concluded that business should be an active partner in order to achieve environmental improvements. The establishment of an EMS was seen as one way in which business can contribute to such improvements. Based on this understanding and in order to support the introduction of EMSs in SMEs, the Convoy funding scheme started in 2000 and will run until 2004<sup>73</sup>.

The main aim of the scheme is to achieve either EMAS registration or, as a first step and for companies with fewer than 100 employees, a less formal ("precursor") version of EMAS (*Vorstufe zum Öko-Audit*)<sup>74</sup>. For each Convoy-group at least 50 per cent of the participating companies must achieve EMAS registration. Costs for consultants are funded up to 60 per cent (up to a maximum of €3000 per SME); for SME with fewer than 100 employees, up to 80 per cent (up to €4000) can be funded.

**Innovative character: learning effects through group work and little red tape**

One of the innovative design aspects of Convoy funding is that preparation towards EMAS registration takes place in small groups, co-ordinated by local/regional authorities or Chambers of Commerce. Each group consists of seven to ten SMEs, often from different sectors and of varying size. The onus for accessing funds, identifying SMEs to participate and motivating enterprises to succeed is placed squarely on the co-ordinators or the consultants. Owing to these innovative features, the Convoy funding scheme has several advantages:

- Co-ordinators and consultants search for SMEs in their region to participate in group consulting. This means that they need to be well connected to local enterprises and that they effectively market EMSs to SMEs.
- The application for funding is taken care of by the consultant or the co-ordinator, hence there is little administrative work and lower costs for the single SME.
- Environmental managers with responsibility for driving EMS implementation regularly meet in the group consulting process and can exchange ideas on problems and solutions.
- Environmental managers form an informal network, which they can use when the consulting process is finished.

**Effectiveness**

Since October 2000, 30 Convoy projects with over 200 participants have been completed or are still underway; and 35 to 40 organisations have already achieved EMAS registration.

*Interview with Stefan Frey, Ministerium für Umwelt u. Verkehr Baden-Württemberg*  
<http://www.uvm.baden-wuerttemberg.de/uvm/>

Additional examples of innovative funding schemes are the following Danish good practices. They illustrate how subsidies can be used to promote long-term environmental capacity building within enterprises, for instance by allowing SMEs to employ environmentally competent staff.

**Good practice 9 – Environmental Competence Scheme and Icebreaker – Denmark**

The Danish “Environmental Competence” scheme (1998-2001)<sup>75</sup> and its predecessors, the “Environmental Icebreaker” and the “Green Job Creation” schemes (1994-1999), are examples of the innovative use of subsidies to promote environmental management and EMSs in industry. These schemes, initiated by the Danish Environmental Protection Agency (DEPA), are part of the wider “Cleaner Products Programme” (which runs until 2004) and the government’s overall environmental/sustainable development policy goals. All these subsidy schemes had a strong focus on EMS implementation on account of the observed positive correlation between EMSs and long-term commitment to improved environmental performance. EMS implementation was regarded both as a necessary step towards product-oriented activities (eco-labelling, life-cycle-assessment (LCA), eco-design) and as a goal in itself, especially in the form of EMAS-registration.

**Innovative character**

A key innovative feature of these schemes is that they attempted to achieve the government’s overall environmental objectives by providing subsidies to promote environment-related job creation (the Green Job Creation scheme and the Environmental Icebreaker scheme) and long-term internal competence building (the Environmental Competence scheme), thus enhancing a company’s self-reliance. A vital part of such competence building activities was a company’s commitment to carry out an environmental project of strategic importance (e.g. by implementing an EMS or using LCA tools) in order to gain “hands on” experience with environmental work at all levels in the organisation. In this connection, companies had to be prepared to commit six man-months of their own staff to support the project’s implementation.

**Effectiveness**

Since the introduction of the schemes, some 700 enterprises have received direct subsidies from government to prepare them to make the transition to sound environmental management. The schemes have successfully contributed to raising awareness within SMEs and have funded employee recruitment and training. The success of the schemes has been their ability to demonstrate the use and benefits of tools such as EMS and LCA, with the support of dedicated environmental professionals within the firms involved. Statistics suggest that the Environmental Competence scheme has been effective in reaching SMEs.<sup>76</sup>

**Positive feedback**

The schemes’ simplicity (grant applications are straightforward) and ease of entry (procedures for approving grants are quick and not overly bureaucratic) may account for their ability to attract SMEs. A positive side effect of the schemes is that many SME participants have begun working together, connected to each other through local support networks, in order to share information, experiences and the use of local environmental experts. The projects’ internal effects have been very satisfying according to the companies themselves.

*Interview with Hanne Eriksen , Danish Environmental Protection Agency*

[www.mst.dk](http://www.mst.dk)

A final example of an innovative design feature of EMS-related funding is linking EMS implementation to mainstream investment support, for example in the context of the EU Structural Funds. This approach has for instance been developed in Portugal:

**Good practice 10 – The “environmental value-added supplement” applied as part of the Incentive Scheme to Enterprise Modernisation – Portugal**

The “Incentive Scheme to Enterprise Modernisation” (SIME) is part of Portugal’s “Incentive Programme for the Modernisation of the Economy 2000-2006” (PRIME), which governs financial support for investment projects carried out in the context of the EU Structural Funds. To encourage preventative measures and reduce negative environmental impacts resulting from new investments in a wide range of sectors (manufacturing industry including energy-related initiatives, trade, construction, tourism, transport), the SIME covers a so-called “environmental value-added supplement”.

This non-repayable incentive, which can be obtained *in addition to* funding for mainstream investment, is granted to investment projects based on a strategic analysis of the enterprise and following an integrated approach. Such an approach is expected to encompass various issues, such as the production process, management, working conditions, marketing as well as environmental protection. Thus, the supplement rewards enterprises which are forward thinking and seek to address environmental issues in their projects.

To obtain the 5 per cent supplement, projects must aim at achieving at least one of the following objectives: adoption of Best Available Techniques (under the IPPC Directive), registration to EMAS, participation in the EU’s Eco-label Award Scheme, or a significant reduction of greenhouse gas emissions or acidifying gases. The supplement is calculated taking as a basis the total “productive tangible investment”, i.e., the part of the investment that is devoted to the acquisition of real estate, buildings, equipment etc.

**Effectiveness**

By mid 2003, approval had been given to 93 SIME projects that included EMAS registration as a condition for receiving the 5 per cent supplement. Among the companies involved, nine are now in the process of EMAS implementation and three have already been registered.

**Reproducibility**

The approach of linking financial support for mainstream investment with funding for EMS implementation seems to have a clear potential for reproduction in other countries, for instance in relation to Structural Fund expenditure in the new Member States.

*Information provided by Ms. Paula Cristina Gomes, Portuguese Ministry for Economic Affairs  
[paula.gomes@dgi.min-economia.pt](mailto:paula.gomes@dgi.min-economia.pt)*

**Commentary**

The good practices presented above address a number of typical SME-specific barriers to EMS adoption:

- Funding schemes targeted at capacity building and/or network creation reduce costs and address problems related to human resources
- Adequate organisational arrangements can minimise administrative problems and help ensure the “SME proximity” of subsidy schemes.

Moreover, owing to their specific features this type of subsidy schemes:

- Are more likely to have long-term effects (i.e. beyond the duration of the subsidy) than conventional ones.

#### *Reducing costs and human resource problems*

By developing internal EMS-skills (which means less need for external consultants), sharing consultancy costs and/or exchanging expertise, costs can be lowered. Such approaches not only address the cost constraints SMEs face, but also tackle the internal human resource issue, the lack of which is a major barrier for EMS uptake by SMEs.

#### *Reducing organisational barriers*

A key feature of the German Convoy scheme is that the administrative burden is shifted away from the SME onto the co-ordinator or consultant, thus reducing the level of bureaucracy associated with gaining funds. The importance of this aspect is also demonstrated by the former UK funding scheme SCEEMAS, which was considered a failure, partly because of its bureaucratic procedures.

The nature of organisations and actors administering subsidies is also important in another respect. Relevant knowledge of the target audience and local expertise are key. Choosing an administration body that has the support of the business community and is appropriate to its needs is one of the factors that influence the success of subsidy schemes. In France, for instance, the low uptake of funding schemes run by the regional Directorates of Industry, Research and the Environment (DRIRE) are reportedly owing to participants' fear of scrutiny by the grant-giving organisation, which is also responsible for the control of regulations. A main benefit of funding schemes administered at regional or local level is the practical knowledge they generate and their proximity to businesses. For example, the SMEs involved in the Swedish MISF project (1996-1998) pointed out the importance of the regional network and found that the project had a "practical approach" that was particularly applicable to their specific needs.

#### *Long-term effects of subsidies*

With all direct subsidies the question arises as to whether the effects generated will last beyond the termination of the funds. In Germany, for example, there is some evidence to suggest that SMEs fail to re-register to EMAS once subsidies to implement and maintain the scheme cease. In contrast to this, the Enterprise Ireland EMS funding scheme shows that firms which used the scheme to achieve EN ISO 14001 certification maintained their EMSs once funding terminated. Overall, determining long-term effects is often difficult, as there is a lack of monitoring and data on the effectiveness of direct subsidy schemes.

One of the advantages of funding networks (such as those in Germany and Sweden) and capacity building (in the case of Denmark) is that the SMEs generate their own support groups, which can continue when the funding stops. A recent survey of SMEs in Sweden<sup>77</sup>

found that companies which collaborate in networks carried out more active environmental work than those working on their own. Linking funding for EMS adoption to financial support for mainstream productive investment (see the Portuguese good practice example) may also help secure longer-term effects, as this may foster a better integration of environmental considerations into companies' overall business strategy.

### ***Final remark: relevance of subsidy schemes to EMS uptake by SMEs***

Subsidies are important, but they do not seem to be the overriding factor in EMS implementation.<sup>78</sup> Subsidies as such will not stimulate the interest of an SME in an EMS; this needs to be internally generated. In addition, it is quite possible that some sectors or approaches (e.g. EMS-related work in the supply chain) require no financial assistance at all. Subsidies are more fruitfully viewed as one piece of the jigsaw, facilitating EMS uptake by removing one barrier to EMS implementation: lack of financial resources. This conclusion is supported by the evaluation of the Swedish MISF project, which indicated that 65 per cent of the participating SMEs had plans to implement an EMS, but that they would not have started the process without external support and funding.

Once an enterprise has embarked on EMS implementation, additional environmental investments (e.g. in cleaner technologies) are often revealed. For SMEs, these can be crippling financially and inhibit further environmental improvements. Additional sources of finance (e.g. to facilitate access to cleaner technologies) can therefore be just as important as EMS-related subsidies (see good practice 24).

## **3.3.2 GENERAL AND TECHNICAL INFORMATION**

### ***Introduction***

As with the provision of subsidies, another standard element in Member States' initiatives to promote EMSs is information provision. This can be both of a general and of a more specific, technical nature.

### ***General information***

General information aims to provide basic information about the existence and benefits of EMSs, both to companies and other relevant stakeholders. Typical strategies to raise awareness include promotional campaigns, which use a variety of delivery mechanisms (e.g. events such as seminars, direct mail, websites, road shows, press coverage) and forms of material (press releases, brochures, flyers, guidebooks).

For example, in 2000, the French government utilised trade associations to promote EMSs to companies. EMAS II-related media advertising campaigns have been launched in a number of Member States such as Germany and the UK. Campaigns can be national, regional or a mix of both. Adopting a sectoral approach to a campaign can also be seen as having value. Synergies can be achieved by linking general information campaigns to other initiatives such as funding schemes (see section 3.3.1 above).



Interestingly, few promotional campaigns seem to be specifically targeted at SMEs. One of the exceptions is Hungary, where the Hungarian Association of Environmentally Aware Management (KOVET), in co-operation with other stakeholders such as regional Chambers of Commerce, held 10 road shows as part of a campaign to raise environmental management awareness among SMEs, using the strap line “ISO 14000 Put Simply”.

Raising the *general* public’s awareness of EMSs and specific schemes is not as important, at least not in the short run, as targeting more specific stakeholders (see section 3.5.1). Targeting the user community (i.e. enterprises) and their supply chain direct appears to be more effective. An EMS is too specific and systems-orientated to engage the general public.

### *Technical information*

Technical information is most commonly provided in the form of:

- Handbooks
- Advice given by environmental experts (e.g. through networks)
- Internet based supports (e.g. websites, databases)
- Software toolkits.

Handbooks containing general or sector-specific information, both in print and electronic form, are used in most countries, but it is not clear whether they are specific to SMEs. In addition, there appears to have been little evaluation of their usefulness. In France, for instance, 50,000 copies of the brochure *Management de l’environnement* have been distributed but there are no data on how the material was received.

Technical information can also take the form of advice given by environmental experts of business associations or support groups. Networks such as the UK Green Business Clubs, the Irish Environmental Business Clubs and Romania’s Network of Business Support Centres can play a role here by diffusing information. (In fact, many of the network approaches discussed in section 3.3.5 below have as one of their features the development of specific EMS tools, in some cases tailored to a specific business sector). It is important that technical information should be country and sector specific, e.g. case studies of enterprises should be from the country and the sector where the information is disseminated. This appears particularly important for SMEs.

Internet-based support tools, such as websites or databases, are used as a source of technical information by almost every country. A promising new example is the Irish EnviroCentre Internet based support to SMEs<sup>79</sup>, which is similar to the website operated by the UK’s EnviroWise initiative<sup>80</sup>. EnviroCentre provides a free online information portal designed to give “one-stop-shop” environmental support to Irish industry with a particular focus on SMEs. The aim is to provide information, advice, tools and details of when and how a business can benefit from financial incentives (e.g. financial support for the development of an EMS). The site is widely used<sup>81</sup>.



### *Commentary*

The following comments can be made about general and technical information:

- In most cases, general promotional and information campaigns on EMSs are not targeted at the SME audience, but at business in general.
- The provision of technical information is only one aspect in the range of measures needed to engage SMEs.
- Much technical information appears to be duplicated between countries.
- The Internet offers a potentially flexible and powerful resource for both providers and users of information, but it is still uncertain how many SMEs use this medium as a source.

### *Targeted promotional campaigns*

There is a need to target general promotional and information strategies more specifically at SMEs. Such campaigns should consider the best form of accessing the SME community, e.g. through strategies based on specific sectors, the supply chain, certain types of environmental impacts and/or local approaches. Making technical information relevant to companies' sector/size/location all helps to engage the target enterprises and increase the usability of the information. The use of business language tailored to the target community is important, as is having a credible message.

### *Embed technical information*

Technical information provision has greater effect when it is used in conjunction with a suite of tools and/or is followed up by supporting measures. By embedding technical information on EMS in, for example, approaches based on SME networks, its message is reinforced and its value increased to the user community.

### *Duplication of information*

It is recognised that local specificity in technical information is important in terms of sector and cultural factors. Nevertheless, duplication of the common elements in technical information seems to occur frequently and, as such, countries could readily exchange these elements and experience.

### *Increasing but still uncertain use of Internet*

The Internet is a growing source of industry-relevant information on environmental issues including (technical aspects of) EMSs. For instance, once a company has installed an EMS, regular updates, regarding environmental legislation and industry initiatives for example, are key to maintaining its effectiveness and the continual improvement process. Feedback in some countries (e.g. Ireland) suggests that companies appreciate the anonymous character of

Internet sites. At the same time, the Internet should not be regarded as a panacea for SMEs' information demands. It must be backed up by direct contact with relevant specialists and organisations (e.g. the EMAS competent body or sector federations), for instance to resolve problems that the Internet does not address or to boost companies' motivation. It should be noted, finally, that few Internet tools appear to monitor access or, if they do, are unable to relate it to size or type of enterprise. Therefore, it is currently difficult to give a precise assessment of the value of individual sources of Internet-based information to the SME sector.

### **3.3.3 PROMOTING SME-FRIENDLY IMPLEMENTATION OF FORMAL EMSs**

Owing to their specific characteristics, SMEs, especially small and micro enterprises, may face difficulties in implementing a formal EMS<sup>82</sup>. Not only is the language and terminology of formal EMSs alien to most people working in SMEs, but also the emphasis on documented procedures is quite contrary to the informal, non-documented structures and systems often found in such enterprises. Furthermore, some verifiers/certifiers for EMAS and EN ISO 14001 lack experience in dealing with EMSs developed by SMEs. They may, for instance, duplicate efforts between their role and the role of the enterprise's internal auditor<sup>83</sup> or seek to request more documentation than is needed. As a result of this inexperience, they spend relatively greater time assessing smaller enterprises' systems than those of larger companies. This can mean that smaller companies bear a higher cost for their verification/certification<sup>84</sup>. In addition, the compulsory annual re-validation of environmental statements in EMAS is sometimes perceived as overly bureaucratic and unnecessarily costly.

Against this background, there may be a role for public authorities in helping promote what might be called "SME-friendly implementation of formal EMSs". Obviously, such implementation should not impair the essential requirements of a formal EMS; it solely aims at avoiding unnecessary red tape and procedures.

An example of such efforts by public authorities is the Recommendation issued by the European Commission in the context of the EMAS Regulation concerning the verification of SMEs.<sup>85</sup> This guidance document, which was developed in collaboration with the European Association of Craft, Small and Medium-sized Enterprises (UEAMPE), recommends that verifiers should conduct the verification of EMAS in SMEs in such a way as to avoid imposing unnecessary burdens on these enterprises. This can for instance relate to documentation and document control as well as to environmental reports and audits. No such similar guidance has been issued regarding the certification of EMSs according to EN ISO 14001.

The Recommendation has been incorporated into a few countries' national procedures for the accreditation of verifiers. In these countries (e.g. Germany, the Netherlands, Portugal and the UK) verifiers are required to demonstrate their knowledge of the guide and how it applies in practice. The Commission Recommendation is one element of making sure that SMEs are treated appropriately during EMAS verification, and its wider adoption would be helpful.

Another example of initiatives to facilitate SME-friendly implementation of EMSs is the "EMAS Tool Kit" developed (and recently revised) by the International Network for

Environmental Management (INEM), with financial support by the European Commission's Environment Directorate-General.<sup>86</sup> The on-line Tool Kit is a step-by-step guide that brings together a set of tools (such as "Eco-mapping" – see good practice 21) which have been proven effective in helping small companies introduce an EMS and attain EMAS registration. The Tool Kit helps SMEs to "slim" written documentation to a very considerable extent, thus reducing implementation and verification costs.

An interesting pilot project is also being developed in the Spanish city of Lleida. The project, which started in 2003 and is being carried out in partnership with the local Chamber of Commerce, aims to assess the level of awareness of micro-enterprises with regard to environmental issues and plans to design a realistic, workable model for EMAS implementation in very small enterprises<sup>87</sup>.

The next review of EMAS might provide an opportunity to address the issues mentioned above more widely and make the scheme more SME-friendly. The opportunity appears to have been lost to take SMEs needs into account in the current revision of ISO 14001 (and EN ISO 14001). Guidance on how formal EMSs may be articulated in SMEs would be helpful, as would case studies showing the specific details of their EMSs.

### **3.3.4 SECTOR-SPECIFIC INITIATIVES**

#### ***Introduction***

There is considerable sectoral variation in the uptake of EMSs, including amongst SMEs. Whilst in some sectors the prevalence of formal EMSs is comparatively high (e.g. metal products, chemicals, food and beverages), in others (e.g. the extractive industry) it is much lower. Against this background, initiatives that seek to address sector-specific barriers to EMS implementation can be of great interest.

#### ***Good practice examples***

The first good practice in this area comes from France, where SMEs in the plastics sector are targeted (good practice 11). The second example is from the tourism sector in Germany (good practice 12). A third sectoral good practice comes from the UK construction sector. It combines sector-specificity with the mentoring capacity of the supply chain, i.e. a "vertical network" (see good practice 15 in section 3.3.5).

#### **Good Practice 11 – ADEGE Sector Projects – France**

"ADEGE" (*Action de Développement de la Gestion Environnementale*) is a sectoral initiative, launched by the French Federation of the Plastics Processing Industry. The initiative, which covers 4000 enterprises, pursues a number of specific environmental objectives and targets for the sector including producing awareness-raising tools for SME on EMSs.

#### **Clear objective**

The objective of ADEGE is to develop actions appropriate to the plastics sector with some emphasis on SMEs. It includes training on current regulations, the control of environmental costs, baseline assessments and the development of a basic EMS with the focus on EN ISO 14001. The initiative has not developed a sector-

specific EMS tool, but has integrated specific environmental aspects of the plastic industry into a mainstream EMS.

#### **SME-orientated**

SMEs are coached together in seminars, and the programme offers training on EMS and regulation, as well as site-assistance for an environmental review and EMS design and implementation. Training is sector-specific and tailored to enterprises as small as eight employees.

#### **Effectiveness**

The sectoral approach has generated positive results and appears effective in engaging SMEs. As of the end of 2002, more than 300 SMEs had been or were participating in the programme; 100 of these were being assisted in achieving EN ISO 14001 certification and more than 35 had already acquired a certificate. The initiative is subsidised<sup>88</sup> so that the participation cost for SMEs is relatively low at €4,000.

*Interview with Véronique Roger, ADEGE Environnement*

<http://www.adege-env.com/>

The French initiative described above shows how tailoring packages of support to a specific sector in the manufacturing industry can reap positive results. The following example of good practice illustrates how this can be done for the service sector:

#### **Good Practice 12 – ECOCAMPING – Germany**

“ECOCAMPING” began in the Lake Constance region of Germany and was developed as part of an EU-funded LIFE-project aimed at promoting EMSs, including EMAS, in campsites. The European camping sector with approximately 28,000 campsites makes up a high proportion of the European tourism sector and all campsites are SMEs.

ECOCAMPING is an initiative of VISIT, a European association for sustainable tourism<sup>89</sup>. It encompasses two labels. The first one, ECOCAMPING Candidate (ECOCAMPING *Kandidat*), is for campsites which are in the process of developing their EMS and participate in an ECOCAMPING project. The second, ECOCAMPING Environmental Management (ECOCAMPING *Umweltmanagement*) is for campsites which fulfil a set of requirements similar (but not entirely identical) to EMAS<sup>90</sup>.

#### **Stakeholder participation**

The ECOCAMPING initiative is actively promoted and supported by the ECOCAMPING association (Ecocamping e.V.), which has a good reputation in the campsite sector. Representatives of the sector are members of the association’s executive board alongside other stakeholders such as the Chambers of Commerce and local authorities. Stakeholder involvement is seen as an important feature of ECOCAMPING, as it increases the initiative’s visibility and relevance.

#### **SME-orientated**

The ECOCAMPING EMS-approach follows the key elements of EMAS. However, as full EMAS implementation was considered too time-consuming and costly for campsites, the scheme was adapted to their needs. Nevertheless, full registration to EMAS is also possible.

EMS implementation is supported by workshops for groups of campsites and an environmental management handbook is under development. Evaluation of site specific results and benchmarking of the environmental performance of all ECOCAMPING participants is also part of the initiative; they help generate and maintain motivation.

**Effectiveness**

ECOCAMPING can be considered a successful sector-specific (and SME-orientated) EMS initiative. Prior to its launch, there was only one campsite registered to EMAS in the whole of Europe and the sector was not very familiar with the concept of an EMS. Today, 44 campsites have obtained the ECOCAMPING EMS and 12 of these are also registered to EMAS.

*Interview with Marco Walter, Ecocamping e.V.*  
[www.ecocamping.net](http://www.ecocamping.net)

**Commentary**

The good practices described above, and other examples such as ECOTUR in Spain (tourism), the CHEMAS project (chemical industry) in the Czech Republic<sup>91</sup>, the AMA project in Portugal (industrial and ornamental stone)<sup>92</sup> and – at European or international level – the mining<sup>93</sup> and chemical sector<sup>94</sup>, illustrate that there is clear benefit to the user community when the generic EMSs of EN ISO 14001 and EMAS are made more specific to the sector in question.

The key features of the sector-specific initiatives are:

- Generic formal EMSs are made specific to the sector.
- A package of tailored support measures including training and guides are developed for the business sector, taking account of the size of the organisations involved in the EMS.
- Ownership of sector specific initiatives is often with a sector-relevant and trusted organisation.

**Sector specificity**

The good practices above (as well as good practice 15 in section 3.3.5) show that tailoring formal EMSs to a specific sector means that sector-specific needs can be addressed which are not otherwise dealt with by EMAS and EN ISO 14001. “Sector specificity” does not mean that the generic elements of a formal EMS are altered. What it does mean is that sector relevant information is provided, particularly on environmental legislation and environmental aspects and impacts. These are the two elements of an EMS which SMEs often find the most difficult to address well, and where sector-specific expertise is needed. In addition to these two elements, sector-specific training on environmental issues, environmental communication/reporting and environmental auditing are also relevant. Sector-specific guides can also benefit certifiers and verifiers, by informing and to some extent controlling their actions, thus preventing requests for environmental information not relevant to the sector.

The discussion about whether or not sector guides should be developed for EMSs initially arose when BS 7750 (the early British EMS standard) was developed. Many trade associations were involved in piloting the standard and recognised the need for more sector-

specific information, especially in sectors with a high number of SMEs like rubber and plastics. However, the sector guides developed had no “official” status.

### *Package of Measures*

The good practices are not confined to EMSs per se, but include a range of measures within the projects, such as tailor-made training packages, having relevant auditors for EMS assessment, information on environmental costs, and details of relevant legislation. In addition, funding is provided to support the sector approaches. In the UK case, larger companies provide input in kind.

The added benefit of working in sectors appears to be the critical mass of information that can be generated amongst the different participants. Providers of services can be drawn from experts with detailed knowledge of the sector. The relevant sectoral trade association is a key source of this expertise, as can be larger firms such as those participating in the UK construction sector initiative described in good practice 15.

### *Sector Ownership*

An important feature of the good practices presented here is the involvement of sector organisations, at both the design and operation stages of the projects. In the case of the plastics sector in France, the Federation of the Plastics Processing Industry was intimately involved in developing the sectoral approach. In the ECOCAMPING good practice example, a new organisation was established to take the scheme forward. This organisation involves representatives of the tourism sector and other stakeholders. The involvement of sector trade/research organisations means that the ownership of the project is with the sector and the companies within the sector. This engenders trust in the projects because they are viewed as relevant.

The networking opportunities of approaches involving a number of companies in the same sector must not be underestimated. A key feature of both good practices described above is the networking that they afford not only for SMEs and larger firms in the supply chain, but also the public authorities involved. Network approaches are discussed in the next section.

## **3.3.5 NETWORK APPROACHES**

### ***Introduction***

Network approaches whereby SMEs co-operate with other SMEs, larger companies and/or other actors can facilitate the preparation and implementation of an EMS and reduce costs. Networks vary in their composition and may be:

- Horizontal
- Vertical, or
- Multi-stakeholder.

In this section these three categories of networks are discussed successively. The distinction between them is somewhat artificial however, as there is overlap between the different network approaches (for example, a horizontal network of SMEs may involve many other stakeholder participants, thus having many of the features of a multi-stakeholder network).

### ***Good practice examples***

#### *Horizontal networks*

Horizontal networks bring together clusters of SMEs located in the same geographical area. The SMEs are not necessarily from the same sector, but their proximity to each other, for example in an industrial district, makes co-operation possible. In relation to the implementation of an EMS, co-operation between companies in horizontal networks can take several forms:

- Co-operation based on joint services and *joint consultancy advice* as illustrated by the German Convoy funding scheme (see good practice 8 in section 3.3.1)
- Co-operation between companies that introduce *parts of the EMS in common* (see good practice 13 below)
- Co-operation to establish a joint EMS and seek *group/territorial verification* under one EMAS registration (see good practice 14 below).

#### **Good practice 13 – Hackefors model – Sweden**

The “Hackefors” model is a network approach to EMS implementation which involves clusters of SMEs located in the same geographical area. Usually, participating companies belong to the same sector of industry or to the same company group<sup>95</sup>. The model originated in the Hackefors industrial district in Sweden in 1997 and represented an innovative SME-focused way to tackle EMS implementation. At that time, a local association had undertaken a number of projects – largely around waste – to green the district, among other things to make it more attractive to new investments. Alerted to the growing demand for environmental information from customers, the members decided to implement a joint EMS.

The Hackefors model is structured in two halves: those parts of the EMS which are common to the group of participating SMEs (e.g. meetings, seminars, general procedures and audits); and those parts which are specific to each individual enterprise (e.g. environmental aspects, objectives and targets, specific procedures and reviews).

#### **Innovative character**

In the model, each enterprise has an EMS, fulfils the requirements of EN ISO 14001 and, like any other ISO certified company, holds its own certificate. The novelty of the Hackefors model and its interest for SMEs lie in the organisation which supports the SMEs and the commonly held documentation. All participating companies appoint an environmental manager; together these form the EMS group. From this group a steering committee is selected and a central co-ordinator appointed. The co-ordinator is responsible for the network and the common parts of the system (approximately 40 per cent of documentation is common to all). The co-ordinator acts as a hired and shared environmental manager of the group, thereby addressing a key problem SMEs face when seeking to implement EMSs: lack of human resources. A motivated and well-trained co-ordinator appears essential for the success of the approach.



Participating SMEs work through the stages of EN ISO 14001 until certification. The approach involves monthly meetings with homework, training for environmental managers and employees as well as dedicated enterprise visits. An external assessor audits the companies each year and all non-conformances – both internal and external – are compiled and distributed to all companies in the group to allow each company to assimilate the results.

The cost for participating enterprises varies depending on their size<sup>96</sup>. Government subsidies (up to 50 per cent) were available for training to the initial Hackefors SMEs. However, the model is now being reproduced as a commercial venture<sup>97</sup> without subsidies and in areas without existing industrial associations. It is also being used to combine EN ISO 14001 and ISO 9001 implementation.

### **Effectiveness**

The first group of SMEs to successfully pass through the Hackefors model were 26 original Hackefors SMEs, in 1999. Unusually, the majority of these enterprises were micro firms<sup>98</sup>. Since that time, the model has been reproduced in 37 different groups in several other Swedish regions, and led to 520 SMEs being certified to EN ISO 14001. Amongst these, 300 (58 per cent) certificates have been issued to micro enterprises including 77 to firms with only one employee; 161 (31 per cent) to small enterprises and 59 (11 per cent) to medium-sized companies. The model has also attracted interest in other countries such as Denmark and Greece.

The approach has been independently evaluated to determine what actual benefits the participating companies derive from it.<sup>99</sup> Cost savings from energy, fuel and material reductions, and better business relationships with customers, appear to be tangible benefits. Spin off benefits as a result of the network approach have also arisen, e.g. increased interest in training and education (such as the study of computers and English) as a result of the environmental training and seminars. Another benefit for small companies is related to purchasing certification services: by coming together they act like a large company purchaser. This enables them to negotiate lower certification rates than if they operated individually – the costs for group certification being estimated to be 50 per cent lower than those for individual certification.

*Interview with Kurt Börjesson, Altea*  
[www.altea.se](http://www.altea.se)

A cluster of SMEs is the basis for the Hackefors model outlined above and it is the capacity of the model to get the cluster working together in a network around a common goal, i.e. EN ISO 14001 certification, which is interesting. The following good practice from Italy goes one step further, as the whole emphasis of the approach is to view the territory, as opposed to the individual enterprise, as the unit for the EMS:

### **Good practice 14 – Territorial EMAS – Italy**

The initiative to establish a territorial EMAS centres upon an industrial area, the “First Macrolotto”, in the Italian town of Prato. The area covers approximately 150 hectares and currently hosts 324 enterprises, many of them textile manufacturers, with some 3,500 personnel. The initiative’s origins come from the provision of communal environmental services for the industrial area (such as effective water treatment, recycling and personnel transportation), managed by a not-for-profit consortium, CONSER. In 1999, it was decided to realise a territorial EMS<sup>100</sup> and achieve registration to EMAS<sup>101</sup>. This required all enterprises to be viewed as having a common EMS covering the geographical location of the First Macrolotto.

### **Innovative character**

A network approach is used to establish the territorial EMAS. Participating businesses are required to make use of communal services and infrastructure, take part in the initial environmental review<sup>102</sup> and establish an internal structure to co-operate with CONSER. In addition to its role as provider of communal services (waste water treatment, telecommunication and power provision), CONSER also acts as the EMS co-ordinator. It is responsible for the common part of the area’s EMS (which covers the environmental impacts associated with

power generation, waste management and transport) and provides training, education and ('internal') consultancy for SMEs. These, in turn, develop their own policy and internal controls specific to their environmental impacts, in addition to the centrally managed parts of the EMS.

By addressing the environmental impacts of the area as a whole, the overall environmental benefits are much bigger than the total of smaller, incremental gains that could be achieved by individual SMEs. For the participating businesses there are also important social and economic advantages to be gained from the organisational structure and service provision, such as access to CONSER's environmental engineers. CONSER's double role as an infrastructure provider and an EMS co-ordinator are complementary and this combination is crucial for the success of the territorial approach.

#### **SME-orientated**

With most of the businesses in the First Macrolotto having fewer than 10 employees, the project can generally be described as SME-oriented. In particular, the provision of a centralised EMS "resource" provided by CONSER to support EMS development and co-ordinate a range of EMS activities is a key driver for enterprise participation. SMEs can delegate their EMS functions to CONSER if they are unable to develop these systems.

#### **Reproducibility**

On size alone, the geographical area and number of participating businesses are impressive. Substantial on-going effort has been put into training and education and the approach surmounts the two main barriers to SME uptake of EMS: time and money. Clone projects, albeit on a smaller scale, have already commenced in Milan, Turin and elsewhere in Italy.

Although this model can certainly be reproduced, replicating the Prato approach elsewhere in Europe without modification might face difficulties. Not all industrial areas are suitable for centralised service provision and supplanting established contractual agreements with energy and waste service providers could be difficult without consensus. Likewise, where there are private sector owners of existing business areas, it will be necessary to establish a convincing business case to achieve buy-in. Finally, optimum results from this approach are dependent upon economies of scale to be obtained from involving as many businesses as possible.

In the meantime, another project, NAIADI EMAS (New Industrial Areas Inspired by EMAS) has been set up to promote the concept to regional and local authorities considering the development of new industrial estates. The lessons learned at Prato have been incorporated into this new project and its more flexible approach looks most promising, particularly when applied to new industrial areas at the planning stage. NAIADI has already attracted attention from other Italian regions, towns and cities as well as private owners of industrial estates.

*Interview with Fausto Santangelo, Ministry of Trade and Industry and Pierpaolo Dettori, CONSER*  
<http://www.macrolotto-prato.com/>

Another interesting example of a horizontal network is the "Quality-Safety-Environment Clubs" created as part of the French "Loire 2000" program. The "Loire 2000" programme aims to undertake environmental reviews of enterprises and assist them in gaining EN ISO 14001 certification, while the "Clubs" facilitate collaboration of SME participants, deliver training, and offer a structured method to deal with environmental obligations.

The good practice examples related to horizontal networks show the different degrees to which an EMS can be implemented communally amongst a group of enterprises. The key difference between the examples is the way in which the networks tackle EMS implementation. In the Hackefors model 40 per cent of the EMS is held centrally. Although a group certification is undertaken – at which point all individual enterprises are assessed by the certifier along with the common part of the EMS – each SME holds its own EN ISO

14001 certificate. In the Prato example, the aim is to have one location-based EMAS-registration for all participating enterprises, both large and small. A critical condition for the success of this approach is that the EMAS competent body agrees to a single EMAS registration.

### *Vertical networks*

A vertical network can be established in the supply chain, between a large company and one or more of its suppliers which, depending on the sector, may be SMEs. A frequent feature of vertical networks is the “mentoring” relationship between the large company and its suppliers.

Pressure to secure their environmental credentials has stimulated certain large companies to look at their supply chain and increase co-operation with their suppliers. However, blanket demands by large companies for their suppliers to adopt an EMS have been found to be counter-productive because many SME suppliers cannot meet such demands. Moreover, if suppliers are retained even if customer demands have not been met, larger companies lose credibility.

The good practice example below illustrates a successful mentoring relationship in the UK construction sector:

#### **Good practice 15 – Supply Chain Mentoring Project – UK**

In April 2002, CIRIA, the UK Construction Industry Research and Information Association, launched the “Easy Access” environmental management project<sup>103</sup>, with financial support from the UK Department of Trade and Industry. The project took the approach of phased implementation of EN ISO 14001 and EMAS, developed in the UK’s Acorn project and subsequently translated into the new British Standard 8555 (see good practice 18), and adapted it to the construction sector. The phased EMS templates were adapted to the construction sector’s specific legislative and environmental situation and a seventh phase was added to the six-phased Acorn model. The seventh phase, which was added following a request within the construction sector, seeks to combine the EMS with health, safety and quality management systems.

#### **Innovative character – mentoring in the supply chain**

Using the concept of mentoring in the supply chain, CIRIA approached three of its large company members (AMEC, French Kier Anglia and BAA). Each of these attracted around 15 of its (mostly small or medium-sized) suppliers (e.g. building and civil engineer contractors, architects, designers and construction product manufacturers) and committed to support them through the first three phases of the staged EMS approach. CIRIA supported the process with training workshops<sup>104</sup> for each phase and on-line and telephone support. The three large companies provided remote support and in some cases workshops.

In the sharply tiered supply chain of the UK construction sector, where a small number of larger companies (only around 25) are supplied by a vast number of smaller businesses (99 per cent of all construction companies), mentoring appears to offer a viable solution to promulgating EMSs along the supply chain. The sector’s profile means that mentoring offers a practical way of exchanging information, building capacity and developing understanding in the supply chain. The mentoring relationship between the three large companies and their 43 supply chain members was one that developed around trust and shared learning.

The large firms did not approach the supply chain as the “experts” but as partners in the process. Mutual understanding developed along the supply chain: the large firms understood what requirements they could

request from their suppliers and the suppliers saw the benefit in formalising their approach to environmental management and concentrating on environmental performance improvements.

#### **Positive feedback**

Of the 43 firms targeting Phase 3 of the Acorn Method for EMS implementation, 40 SMEs have committed to continue onto additional phases. Participating companies have experienced positive benefits from the phased approach to EMS and the mentoring experience. For example, Halliford Construction Ltd, employing 150 staff with an annual turnover of around €15.6 million, gained certification to EN ISO 14001 and is now mentoring its own supply chain using the Easy Access approach.

*Interview with Greg Hall, CIRIA*  
[www.ciria.org.uk](http://www.ciria.org.uk)

Mentoring can offer an effective means to engage and support EMS implementation in the supply chain. With increased pressure by customers wishing to secure their green credentials, SMEs are likely to respond to this approach. The mentoring approach is largely private sector driven with little involvement of the public sector, except for some cases of funding.

However, experiences made in the context of the UK “Project Acorn” (see good practice 18 in section 3.4.1) demonstrate that mentoring relationships are not always successful. In this case, the characteristics of supply chains meant that the relationship between the mentor company and the SMEs was too distant: some of the SMEs were second or even third tier suppliers and did not have a direct relationship with the mentor company. The EU funded Epicentre project, which tests the “Project Acorn” approach in other European countries, also found difficulties in convincing large companies to mentor smaller suppliers. Therefore, identifying the characteristics of the supply chain and the appropriate partners in the mentor relationship are important conditions for success.

#### *Multi-stakeholder networks*

The establishment of EMSs can also be facilitated through networks composed of a variety of both private and public stakeholders – multi-stakeholder networks. The two examples below show how such public/private partnerships can have mutually beneficial results. The first example from France (good practice 16), was initiated as part of a broader regional sustainable development strategy that seeks to engage SMEs as one actor able to contribute to the strategy. The second case study (good practice 17), from Denmark, is the result of public/private co-operation specifically focusing on EMSs in SMEs.

#### **Good practice 16 – Performance Bretagne Environnement Plus – France**

*Performance Bretagne Environnement Plus* (PBEP), an initiative of the Brittany regional Council and the French central government, is part of the six-year action programme covering the environmental, quality and human resource performance of the region<sup>105</sup> embedded in the broader sustainable development strategy of Brittany. The PBEP is based on a multi-stakeholder approach involving a large number of relevant actors including bodies of public administration (DRIRE<sup>106</sup>, DRAF<sup>107</sup>, the Regional Council, ADEME<sup>108</sup>), employers organisations (*Mouvement Des Entreprises de France* as well as the regional Chambers of Trade and Commerce) and the energy company *Electricité de France* (EDF).

The regional Council co-ordinates the partners and provides funds for the programme; the central government (DRIRE & DRAF) also makes a financial contribution and gives information on regulation; the EDF provides

an energy counsellor to the SMEs; and the Chambers of Trade and Commerce make links between the actors and mobilise SMEs to motivate them to enrol in an EMS. This task is supported by the Employers Unions, which have good links with their members and good access to companies.

#### **Clear objective**

PBEP's overall objective is to create a critical mass of action on the environment by building networks and facilitating the exchange of experience among SMEs. More specifically, the initiative aims at making them aware of the environmental impacts of industrial activity and at promoting EMSs. Its second aim is to make SMEs aware of clean technologies and remediation techniques to improve their environmental performance.

#### **SME-orientated**

The PBEP programme clusters SMEs in groups of between 10 and 40 enterprises according to specific topics such as EN ISO 14001. Attention is given to the composition of the groups to ensure that each SME is grouped with similar companies, so that the learning potential is maximised. The PBEP offers hands-on assistance to SMEs to achieve an environmental self-diagnosis, free four-day training sessions, as well as counselling for all environmental questions (for example, on environmental legislation, EN ISO 14001 and clean technologies).

#### **Effectiveness**

This popular initiative started in 1994 and is aimed at SMEs in all sectors. It is considered to be successful. More than 1300 industrial contacts have been following the programme and more than 500 environmental self-diagnoses have been undertaken in SMEs.

*Interview with David Derre, Performance Bretagne Environnement Plus, Union des Industries et des métiers de la métallurgie de Bretagne*  
<http://www.region-bretagne.fr/>

The *Performance Bretagne Environnement Plus* described above shows how efforts to engage SMEs at regional level benefit from the collaboration between a wide variety of stakeholders. In the following example of "Growth Groups" from Denmark, the co-operation between groups of SMEs, regulators and interested third parties, realises benefits to individual companies' EMS development and leads to internal capacity-building.

#### **Good practice 17 – Green Networks and Growth Groups – Denmark**

The Danish "Green Networks" are a form of voluntary co-operation at regional level between private companies, public authorities and interested third parties. They aim at improving the environmental performance of (mainly industrial) enterprises, both internally (workplace) and externally. A key tool to achieve this is a simplified EMS, which the participating companies are expected to implement, and which results in an environmental statement. The first Green Network, whose current membership is about 250, was set up in the Velje region; in the meantime such Networks have also been established in other parts of Denmark.

Practical work including training activities is carried out in "Growth Groups" consisting of 10-15 companies from a single geographical area, their environmental authorities and one or two external experts. An important feature of these Groups, which typically meet five times over a six-month period, is the co-operation between enterprises and environmental authorities, and the active support provided by these authorities.

#### **SME-orientated**

Green Networks and Growth Groups have a clear SME-orientation. Using a step-by-step approach, SMEs are guided through the process in a simple, straightforward way, with particular emphasis placed on simplicity of language and basic environmental management tools and concepts. Technical support is given to staff within

the SME responsible for the development of environmental statements. These statements must, as a minimum, contain: environmental policies, key performance figures, priorities, objectives and action plans.

The process, which takes six months to complete, follows a basic version of the “plan-do-check-act” approach using a series of interactive training sessions (which cover project planning, company benchmarking and prioritisation) coupled with learning-by-doing. Once completed, the environmental statements are approved and verified by the Green Network’s Secretariat and relevant environmental authorities.

During the initial training (project planning), managing directors of participating SMEs are invited to workshops to ensure that they understand the importance and benefits of environmental statements and of giving administrative staff the time they need for learning and implementation. Trainers stress the simplicity of the approach to ensure buy-in from entrepreneurs at an early stage, and explain that much of the environmental work can be simply integrated into their existing quality management systems.

### **Stakeholder participation**

A cornerstone of this initiative is its ability to strengthen the interplay between the company and the environmental authority. The concept builds upon principles for co-operation such as dialogue and mutual understanding, instead of control. The added value for both actors is the greater understanding of each other’s environmental objectives (including legal aspects) and what is and what is not achievable. This is productive not only in terms of attitudes towards one another, but also financially. For example, companies with ‘expanded’ co-operation with the authorities can be subject to less supervision, thereby lowering costs.

### **Effectiveness**

Since 1993, 273 firms (both large and small) have successfully developed environmental statements in Growth Groups and the number is increasing, with around three to five new Groups being set up each year. Thus far, none of the participants has withdrawn. Those who have gone through the scheme highlight the support provided by other members of the Group, advantages in terms of information sharing and contact development, as well as the strategic guidance and mentoring available from the Green Network’s larger members who act as ‘mentors’ to SMEs. For many companies, the environmental statement prepared through the Growth Group marks a starting point for pursuing a formal EMS, in particular EMAS.

*Interview with Christopher Balle, Danish Standards Association*  
[www.greennetwork.dk](http://www.greennetwork.dk)

Another example of a multi-stakeholder network approach, promising owing to its scale and ambition, is the activity of the *Cellule du Fil de l’Eco-gestion*, the “Green Path to Eco-management”.<sup>109</sup> This three-year initiative, launched in September 2001 by the Environment Ministry of the Belgium region of Wallonia and managed by the Walloon business organisation UWE, links SMEs to a network of actors (*acteurs relais*) that can provide added value to the implementation of an EMS. Among these actors are chambers of commerce, sectoral federations, institutes for training and education, consultants, banks and insurance companies. Networking is facilitated by an online database with contact details of the *acteurs relais*, linking them to the different phases of EMS implementation (i.e. who to contact in the phase of information and initial environmental review, implementation, formal recognition and promotion of the EMS). The network is intended to induce a dynamic exchange of experiences between SMEs and all relevant stakeholders in the market.

### **Commentary**

Elements of network approaches are not only used in the good practice case studies presented in this section, but also in those described in other parts of this report (e.g. the Bavarian



“Environmental Pact” in Germany and the Finnish Local Agenda 21 good practice examples – see section 3.2). Factors underlying the increased use of networks include the recognition, by some public authorities, of the added value of a more participatory approach to policy-making which meets commercial imperatives, especially in the case of vertical networks.

There are key success features common to all three types of networks distinguished above:

- Benefits accrue to all participants
- Clear goals are articulated and understood by participants
- Leadership and organisational structure are transparent and effective.

#### *Benefits from networks*

A factor critical to the success of all three types of networks is that benefits accrue to all participants. For enterprises, an important advantage is the sharing of information between companies, which may lead to cost savings. In addition, networks, particularly vertical ones, can also lead to improved customer relations. For other participants, the drivers can be varied, such as the need for local or regional authorities to engage a broader range of actors to help achieve strategic sustainability goals.

#### *Clear goals*

The good practices show that there is added value in network approaches because they develop understanding between the partners and engender a sense of ownership amongst stakeholders. Critical to the success of networks is that the right partners are involved, that clear goals are set and that the expectations of all participants are managed. If goals are not made transparent and mutually agreed, no – or little – support is created for the network and participants will lose interest. Poorly formed networks, which take up SMEs’ time but do not bring rewards, will quickly fail.

#### *Effective leadership*

The good practices also illustrate the importance of effective and focused leadership that has the support and trust of the network members. This is particularly well illustrated by the vertical network example, where trusted industrial bodies were the hosting and facilitating organisations. Public administrations may not in all cases have the trust required to be an effective leader of a network because of their other functions including regulation. Therefore, the choice of a network leader, in particular in multi-stakeholder networks that bring together many different actors, requires some thought and consultation.<sup>110</sup>

#### ***Final remark: relevance of networks to EMS uptake by SMEs***

Network approaches address many of the internal barriers SMEs face when implementing EMSs. They offer SMEs the opportunity to share experiences, costs and support, thus providing a more collaborative approach to EMS implementation. When other stakeholders are involved, particularly public administrations and regulators, networks allow all actors, including SMEs, to better understand mutual environmental challenges and expectations.



### 3.4 INITIATIVES INVOLVING LESS FORMAL APPROACHES TO ENVIRONMENTAL MANAGEMENT

Many of the good practice examples described so far (e.g. good practices 4, 5, 6, 8, 12 and 15) cover both formal and less formal EMSs as part of the same policy initiative. This section examines a number of specific initiatives involving less formal EMSs in more detail. In accordance with the “EMS quality” selection criterion defined in chapter 2 of this report, the analysis here is confined to those types of less formal EMSs that focus on promoting environmental performance improvement in line with the plan-do-check-act (PDCA) model and that can be rolled out to a formal EMS if desired.

The rationale for policy initiatives involving less formal approaches to EMSs is that for SMEs, in particular micro and small enterprises, a formal EMS is not necessarily the optimal tool to achieve improved environmental (and economic) performance<sup>111</sup>. In some cases, there may be a risk that when implementing a fully-fledged EMS, SMEs spend too much effort on administrative tasks and bureaucracy, rather than on achieving concrete improvements. Certification should not be viewed as an end itself or the only goal for SMEs.

The perceived bureaucracy of formal EMSs and the internal implementation barriers faced by SMEs means that modified approaches to environmental management systems may offer some solutions. They offer SMEs ways to start working towards an EMS by tackling some of the barriers they face in this area, such as interruption of the implementation process, lack of resources and the inability to see the relevance of all stages of the EMS.

In this section, three types of less formal approaches to environmental management will be examined:

- Staged approaches
- Alternative and simplified approaches
- Integrated approaches.

Good practice examples are provided from Germany, Norway, Sweden and the UK.

#### 3.4.1 STAGED EMS APPROACHES

##### *Introduction*

Staged approaches to EMS implementation divide the EMS into a number of clearly distinguishable, consecutive steps or modules. Staged approaches allow companies to progress towards a full EMS (either EN ISO 14001/ISO 14001 or EMAS, certified if so required) at a pace best suited to their resources. The interest for an SME lies especially in the planning advantages in terms of resources, as each stage is manageable as a separate investment project and can be better planned in time. An important question with respect to staged approaches is whether – and if so how – a system of recognition for the intermediate steps should be introduced. Exploring this issue involves inter alia weighing possible

advantages (e.g. in terms of internal motivation and visibility in the market) and disadvantages (e.g. confusion caused by different levels of recognition and higher *total* costs).

### ***Good practice example***

An example of a staged approach, which can lead to certification/registration under EN ISO 14001/ISO 14001 or EMAS, is the Acorn Model, now defined in a British Standard (BS 8555):

#### **Good practice 18 – Phased Implementation of EMS: the Acorn Model and BS 8555 – UK**

Low uptake of EMSs by UK SMEs prompted research into the barriers facing their participation in EMSs<sup>112</sup>. This found that internal barriers to EMS adoption (e.g. lack of human resources, practical problems with implementation and the fact that EMS implementation in SMEs is typically an interrupted and interruptible process), were more important than external ones. Therefore, if smaller enterprises were to be engaged in environmental improvements, ways and means had to be found to address such barriers.

#### **SME-orientated**

With this in mind, it was decided to develop and test a phased approach to EMS implementation, building on a model that had originally been developed in Ireland. This was done in the so-called Project Acorn funded largely by the UK Department for Trade and Industry (DTI) and with support from the Department for the Environment (DEFRA). The approach sought to remove EMS-related barriers faced by SMEs by:

- developing an EMS implementation process in “bite-sized” chunks (phases)
- providing modular external audits to help companies demonstrate their progress
- putting strong emphasis on environmental performance evaluation based on the ISO standard 14031.

The phased approach developed and tested in the project was in line with EN ISO 14001 and EMAS: after phase 5 companies could achieve certification according to EN ISO 14001, and phase 6 brought them to EMAS.

#### **Effectiveness**

Project Acorn recruited 42 ‘fast track’ SMEs (i.e. those enterprises that would develop a full EMS at phase 5), 35 of which have already achieved EN ISO 14001 certification. Fast track companies received training workshops and on-site consultancy support. The project also covered 15 non-fast track SMEs which would seek to achieve at least phase 3 of the model. Another 140 SMEs<sup>113</sup> are currently at Phase 2 or below.

Whilst “mentoring” by large companies was originally seen as an important facet of the project, in some cases the supply chain composition was such that mentor companies did not interact with SMEs and therefore had no immediate relationship to build on. Nevertheless, as Marks & Spencer (a mentor company involved in the project) pointed out, no retailer can become more sustainable without engaging its supply chain.

#### **Positive feedback**

SMEs participating in the phased approach to EMS implementation have positive experience with the process. One small construction company – Greenfield Way Ltd<sup>114</sup> – commented that it found phased recognition was key to keeping the staff motivated throughout the process. The company has since achieved registration to EMAS and is now mentoring its own supply chain. On achieving EN ISO 14001 certification, another participating SME, Haliford Construction, reported that their certifier had commented that their system was very effective and streamlined.

#### **Self-sustaining – the development of a new British Standard (BS 8555)**

An important aspect of Project Acorn was the establishment of the Acorn Trust, a not for profit company with multi-stakeholder involvement<sup>15</sup>, to take forward the intellectual property rights developed by the project beyond its termination. A key element of this was the development of the British Standard BS 8555:2003 – “EMS: Guide to the phased implementation of an EMS including the use of environmental performance evaluation” based on the Acorn Model.

BS 8555 is a “guidance” standard; certification systems for it are not automatically developed. The development of any certification scheme related to BS 8555 is still under discussion. Auditor competence is one of the issues that need to be looked at as traditional EN ISO 14001 certifiers are not in all cases trained or familiar with SMEs and their tendency to have less documentation than large companies.

A web site has been developed which will act as a free resource for companies wishing to pursue a phased approach to EMS implementation. The web site describes the Acorn Model, contains examples of good practice, ready-made templates and worksheets to monitor progress during the different EMS phases, suggests environmental performance indicators for different business sectors (more will be added as the database expands) and provides links to other resources on legislation<sup>16</sup>. Users have a secure user account that will enable them to manage their data whilst working towards BS 8555.

As part of the EU LIFE Epicentre project, the Acorn Model is also being tested in Germany, Hungary, Ireland and Spain.

*Interview with Chris Sheldon, The Acorn Trust*

*<http://www.theacorntrust.org> and <http://www.life-epicentre.com>*

The development of the British Standard BS 8555 means that a phased approach to EMS implementation is now available to all enterprises in Europe. The publication of the standard has given the approach a more formal status, which other phased approaches (e.g. the 3-phased EMS implementation scheme in Ireland, the country of origin for phased EMSs, “e+5” in Spain and “On the Way to EMAS with ISO 14001” in Sweden) do not have.

As a national standard, BS 8555 can be taken up by the European or international standards bodies and influence the development of any standard these bodies may wish to develop on a phased EMS. Such an initiative would be reminiscent of what happened to BS 7750 (the first standard on EMS), which influenced the subsequent development of ISO 14001.

The merit of BS 8555 is its clear relationship to EN ISO 14001/ISO 14001 and EMAS and its use of environmental performance indicators based on ISO 14031. However, whether or not the new standard becomes a success will depend on the number of companies adopting it or customers demanding it of their suppliers. In the UK’s view, a key issue related to this is the recognition system that will be developed for BS 8555. As the standard is a “guidance standard”, the associated certification systems, which would be developed for a “specification standard” like EN ISO 14001, are not automatically applicable. Following a feasibility study of the options, it has therefore been proposed to develop an accredited 'inspection' scheme for BS 8555 which will enable formal recognition to be given of the stages completed. It is hoped to launch such a scheme during 2004 in co-operation with the United Kingdom Accreditation Service (UKAS).

### 3.4.2 ALTERNATIVE AND SIMPLIFIED APPROACHES

#### *Introduction*

The Acorn Model and BS 8555 are explicitly designed to allow for gradually achieving recognition under EN ISO 14001/ISO 14001 and/or EMAS. Other less formal approaches to EMSs are more limited in scope, although they can nevertheless constitute a first step towards establishing a formal EMS.

#### *Good practice examples*

Some of these less formal EMSs are based on the attribution of alternative, environment-related labels according to the specific requirements of the scheme in question. Examples of such “alternative” EMSs include the, originally Austrian, “Eco-profit” (*ÖKOPROFIT*) scheme (see good practice 19 below) as well as the Norwegian “Eco-lighthouse” (*Miljøfyrtårn*) programme (see good practice 20). An example of a simplified environmental management tool without a label is “Eco-mapping”, which is specifically geared towards the needs of small or micro companies (see good practice 21).

#### **Good practice 19 – Eco-profit Vienna – Austria**

The *ÖKOPROFIT* (“Eco-profit”) concept, originally developed in the Austrian city of Graz in the early 1990s but now also applied in other countries, focuses on improvements in a company’s economic and environmental performance through better environmental management. It is based on the idea of partnerships with local authorities and the need to take account of local circumstances. The scheme emphasises continuous improvements as a requirement for the Eco-profit label. Eco-profit covers the main elements of an initial environmental review and preparation of a first environmental programme; it can thus be seen as a first phase in implementing a formal EMS. In Germany, the Eco-profit concept is used in several local communities, with the emphasis on groups of SMEs taking part in workshops in order to identify cost reductions through efficient environmental protection measures. In some cases, specific initiatives exist to help Eco-profit companies achieve registration under EMAS. There are more than 1000 Eco-profit companies in Europe, mainly in Austria and Germany.

In Vienna, Eco-profit is one of six modules in the overall “Eco-business Plan Vienna” run by the Vienna city council and supervised by a multi-stakeholder committee<sup>17</sup>; two other modules concern EN ISO 14001 and EMAS. Eco-profit Vienna aims to strengthen companies economically using environmentally-friendly technologies. Funding is available for its implementation<sup>18</sup>.

Eco-profit Vienna consists of:

- A one-day “check” to identify whether or not a company will participate in Eco-profit
- A series of eight workshops for representatives from different companies
- Four days of individual consulting per company.

Once a company has taken the first practical steps and prepared an environmental programme to the satisfaction of the Eco-profit committee, it is awarded the “Eco-profit Vienna” label. The whole process takes approximately ten months. If desired, Eco-profit companies can go on to participate in the EN ISO 14001 or EMAS modules of the Viennese Eco-business Plan.

After the first successful award of the Eco-profit label companies are invited to provide data and a new environmental programme for the next year. If they do this, they will be re-awarded the Eco-profit label.

Companies are also helped to set up in-house “Green Teams” to ensure more employees involvement. Networking with other companies is also facilitated following the first year of participation.

#### **SME-orientated**

SMEs are a specific target group of the Viennese Eco-business Plan. Eco-profit Vienna is most suitable for companies with over 20 employees; the average number of employees in the 81 companies that participated in the scheme between 2000 and 2002 is 120.

The most interesting elements of Eco-profit Vienna from an SME perspective are:

- the local approach which involves a mix of stakeholders representing business, public administrations, employees and local consultants
- the focus on improving competitiveness and reducing the costs of environmental measures for companies linked with local environmental quality improvements
- the focus on the “human element” of environmental management: Green Teams networking with other companies
- the possibility to move on to the EN ISO 14001 or EMAS modules of the Eco-business Plan
- the marketing efforts undertaken by the city council of Vienna.

#### **Positive feedback**

The feedback from the users of Eco-profit is positive overall. The companies have expressed a high level of satisfaction with the consultants, and networking works well among the companies. At the same time, they have requested greater support in exchanging experiences and in networking on a more informal level, and they have been critical of the time pressure, which is determined by the Eco-profit cycle of workshops<sup>119</sup>. The Eco-business Plan Vienna, including the Eco-profit module, has served as a model for a similar programme in Győr, Hungary. The cities of Vienna and Győr are conducting a joint project co-funded by the EU Interreg Programme in order to establish a similar model in Győr.

Eco-profit Vienna could not be sustained without the project management and communication work carried out by the environmental department of the city of Vienna. It is also unlikely that it would continue without some financial support.

*Interview with Dr. Thomas Hruschka, Eco-business Plan Vienna*  
<http://www.oekobusinessplan.wien.at/umweltprogramme/oekoprofit>

In Vienna, Eco-profit is used as a tool to engage local businesses in efforts to contribute to a city-wide plan for environmental improvements. A similar strategy is followed in Norway, where the Eco-lighthouse scheme described below is part of Local Agenda 21 strategies:

#### **Good practice 20 – Eco-lighthouse – Norway**

The cornerstone of the Norwegian “Eco-lighthouse” scheme is an environmental management tool to enable smaller firms to meet their environmental challenges using sector-based analysis. The scheme was launched in the City of Kristiansand in 1996, as a Norwegian Agenda 21 “Sustainable Communities” pilot project. It is an attempt to forge partnerships between small businesses and local authorities in order to achieve Agenda 21 goals. Of the 434 local authorities in Norway, 177 of the most central ones covering 95 per cent of the country’s population, have Eco-lighthouse programmes. The National Eco-lighthouse Office, supported by a multi-stakeholder board, is located in Kristiansand.

#### **SME-orientated**

Sector criteria exist for 56 trades such as woodworking, hairdressers, and plumbing, i.e. sectors made up largely of micro and small enterprises which are not normally involved in formal EMSs and which are usually not

highly regulated. These sector criteria are developed in consultation with the relevant trade association and reviewed biannually<sup>120</sup>. For each sector, criteria not only include information on environmental, health and safety legislation, but also cover other environmental aspects such as energy use, transportation and emissions, as well as benchmarks for the sector and internal control guidance.

Companies follow the relevant sector criteria to improve their environmental performance. Each enterprise must undertake an environmental analysis and develop an action plan. An annual report is submitted to the Eco-lighthouse secretariat and the local authority. Participating companies can be awarded an Eco-lighthouse certificate. The first certificate is dependent on the enterprise being checked by the local Eco-lighthouse auditor; its maintenance depends on annual action plans and reports by the enterprise. Re-certification takes place every three years by the local authority.

Eco-lighthouse local authorities are required to have an Eco-lighthouse officer trained in the method, who is responsible for recruiting new companies, assigning consultants, overseeing media coverage and conducting certification inspections. Local authorities are recommended to recruit a number of pioneer companies – “No 1. companies” – to act as ambassadors in their sector and that are thus seen as important multipliers for the scheme.

Eco-lighthouse is supported by a network of private consultants, trained in the Eco-lighthouse methodology and approved by the local authority where they intend to work. It is acknowledged that the majority of companies will need to use a consultant to assist them in the implementation of the scheme, even where there is strong environmental commitment in the business. The average cost of consultancy support is around € 2,600 per company, but financial support from the local authority is usually available<sup>121</sup>.

### **Effectiveness and positive feedback**

As of May 2003, there were around 520 Eco-lighthouse certified SMEs and more than 100 still working towards certification. Users give positive feedback on the programme and emphasise that cost savings are key. However, despite the high degree of publicity given to SMEs receiving Eco-lighthouse certificates (local authorities organise this publicity and usually enlist the mayor to present certificates to gain good media coverage), too little positive response is received from the customers of Eco-lighthouse certified SMEs.

Environmental effects are positive: in a comparative study of small enterprises<sup>122</sup>, those using Eco-lighthouse reduced their energy consumption on average by 3 per cent per year and their waste production by 5 per cent per year in comparison with similar non-Eco-lighthouse companies. A beneficial side-effect noted is that a greater number of job applicants reply to Eco-lighthouse enterprise job adverts. Also, having an Eco-lighthouse certificate is seen as increasingly positive because of the demands from both the private and public sector in their purchasing routines.

### **Self-sustaining**

The Ministry of the Environment funds the programme until the end of 2003<sup>123</sup>. It is anticipated that it will be self-financing by 2005, for instance by charging a fee from each Eco-lighthouse SME<sup>124</sup>, charging for auditor and consultancy training and through corporate sponsorship. There are however signals from the Norwegian government that Eco-lighthouse will continue to be supported as part of the commitment Norway made after the Johannesburg 2002 Earth Summit, at which the Eco-lighthouse was presented as one of the "Best Practice" projects for Local Agenda 21.

### **Reproducibility**

Efforts are ongoing to establish co-operation between Eco-lighthouse, the Danish "Green Networks" (see good practice 17) and the “environmental diploma” scheme in Gothenburg (Sweden). This might for instance result in common marketing efforts and the set-up of a Nordic “think tank” for EMS-related work in SMEs. The Eco-lighthouse scheme may also play a role in a planned sustainability-related co-operation project (“TBestC”) in the Baltic Sea region involving cities in Estonia, Finland, Latvia, Norway, Russia and Sweden.



*Interview with Hans Otto Lund, Eco-lighthouse*  
[www.eco-lighthouse.com](http://www.eco-lighthouse.com)

The Eco-lighthouse scheme forms part of a broader sustainable development strategy based on Local Agenda 21, comparable to good practice 5. Thus, the interest of the scheme does not only lie in its SME-friendly character, but also in the “embedded” way in which it is used: the efforts to combine the actions of small firms with local authorities’ strategic objectives. A similar effort is also the origin of the development of the “Eco-mapping” tool:

#### **Good practice 21 – Eco-mapping – Belgium**

Eco-mapping is a simple tool that helps small companies get engaged in environmental management and move towards EN ISO 14001 and EMAS. It was developed in Brussels, in 1996, in response to a wish by the regional environmental agency (IBGE) and the Unit of Economic Expansion (SDRB). They wanted to target the numerous micro companies in Brussels in order to upgrade their environmental performance, with the overall objective to retain companies in the residential areas of the city and prevent migration to industrial zones.

##### **SME-orientated**

In a pilot programme, technical counsellors toured companies in different sectors (e.g. printing, car body repair, bakeries and restaurants), and identified the specific problems associated with the discord between the informal organisational patterns of small enterprises and the rigid routine of EMSs. It was in this context that Eco-mapping was developed as an easy, visually creative process of “scanning” environmentally relevant topics and practices directly on the “shop-floor” of a small business. The tool requires observation, judgement, communication and very little documentation and therefore could appeal readily to SMEs. It helps in target setting and monitoring progress made in environmental performance as well as in training employers, managers and workers and raising their awareness.

The focus of Eco-mapping is on improving environmental performance and introducing the basic notion of plan-do-check-act (PDCA). The work process makes SMEs define corrective actions and reduction objectives and the underlying methods leads to verifiable and quantifiable results. The tool can be used as an initial stepping stone to start and support the implementation of EMAS or EN ISO 14001.

##### **Effectiveness**

The Eco-mapping tool was intended to be “shareware” and is therefore freely distributed by the International Network for Environmental Management (INEM). Distribution, in several languages, takes place world-wide and as part of the EMAS Toolkit (see section 3.3.3 above). Conceived as a do-it-yourself tool, it is used in Europe (e.g. in France as a dynamic tool to manage industrial estates), and in other parts of the world by a variety of actors (e.g. 15 Southeast Asian government agencies use it in their green productivity approach towards SMEs). The Eco-mapping Brochure has been downloaded more than 20,000 times from the INEM server and 50,000 paper versions have been distributed world-wide. An international survey on the experiences made with the tool was conducted from January 2002 to May 2002 and 16 international case studies about its use in various sectors and countries have been published on-line (<http://www.Ecomapping.org>).

*Interview with Marcel van Meesche, ABECE*  
<http://www.Ecomapping.org>

#### **Commentary**

Key issues related to the staged, alternative and simplified EMS approaches described above are:



- The initiatives seek to align with formal EMSs by following their different elements, albeit to varying degrees.
- Less formal approaches are developed and implemented in response to the inability or unwillingness of enterprises, often quite small ones, to implement formal EMSs.
- There may be uncertainty about the recognition of less formal approaches, particularly concerning the intermediate steps of staged EMSs.
- There is no consensus on the validity of the different approaches.

#### *Alignment with formal EMSs*

Although all the good practice examples given above seek to align their approaches to the elements of the EMS as defined in EN ISO 14001 and EMAS, they do so to varying degrees. For instance, whereas the Acorn Model and BS 8555 explicitly break down EN ISO 14001 and EMAS into separate steps, Eco-mapping concentrates on only some EMS elements, i.e. the initial review and the identification of environmental aspects. A problem with some types of less formal EMSs may be that the explicit links between them and formal EMSs are not always apparent, which may act as a barrier for those SMEs interested in progressing towards a formal EMS. Therefore, in all cases it seems important to have a clear “road map” of how a less formal EMS can be extended to a formal EMS if desired.

#### *Response to a business need*

The proliferation of different approaches to EMSs, often supported by public authorities, is a response to a need in the business community. Enterprises need to have appropriate tools to help them address their environmental impacts. This proliferation is in part due to the lack of appropriateness of EMAS and EN ISO 14001 to some companies, in particular amongst small and micro enterprises. As long as there is demand for different EMS approaches in the business community, such approaches will continue to exist and potentially increase.

#### *Recognition*

Two important issues with respect to less formal EMSs are whether they should be accompanied by a system of external recognition (for instance in the form of labels or certification) and how the market would react to this. An advantage of introducing a system of “official” recognition for less formal EMSs is that the company’s EMS efforts are made visible to external stakeholders. Another advantage is the internal profile this gives to the process of EMS implementation and the motivation and encouragement this affords. On the other hand, there may be uncertainty about the value and status of alternative labels and certificates and their proliferation may confuse customers and users.

A crucial question is how formal recognition systems – e.g. accreditation and certification – will work for staged EMSs. As noted above, for the new British Standard BS 8555 it has now

been proposed to develop an accredited 'inspection' scheme (to be launched in 2004), which will enable formal recognition to be given of the stages completed.

#### *Lack of Consensus*

There is no consensus about the value of the various less formal EMS approaches. On the one hand, the variety of approaches is viewed as adding confusion to the market and as taking value away from formal EMSs. The concern is that participants in less formal EMSs do not progress to a formal EMS and somehow gain greater recognition for their efforts than is warranted. On the other hand, less formal EMSs are seen as an opportunity to engage previously uninvolved SMEs in environmental management. In addition, because the majority of less formal approaches – in particular BS 8555 – are based on elements of formal EMSs, businesses are thought to be better prepared for possible subsequent participation in EMAS or EN ISO 14001. These arguments are used in the discussion between the “purists”, who support EMAS and EN ISO 14001 above all other schemes, and the “pragmatists”, who accept “one size does not fit all”.

#### *Final remark: relevance of less formal EMS approaches to EMS uptake by SMEs*

SME implementation of EMSs is widely reported to be an interrupted and interruptible process, as internal and external barriers affect the implementation more profoundly than in large companies. EMSs which take account of these characteristics of SMEs, assist in directing enterprises towards more systematic and structured management of their environmental impacts and, in some cases, towards formal EMSs.

### **3.4.3 INTEGRATED APPROACHES**

#### *Introduction*

An emerging trend in management systems is the integration of different aspects such as quality, environment and health and safety<sup>125</sup>. Standards bodies and public authorities are responding to the increasing demand for integration. For example, the Danish government has identified a desire among a number of enterprises for an integrated standard; in response the Danish Standards Association has begun to develop a standard covering energy, quality, corporate social responsibility, occupational health and safety, as well as EN ISO 14001 and EMAS. In the UK, the Department of Trade and Industry has funded the SIGMA Project designed to develop guidelines (published in September 2003) for a “sustainability” management system.<sup>126</sup>

The benefits of integration are seen as:

- Simplification of systems
- Cost reductions (e.g. lower certification costs)
- Reduction in procedures and bureaucracy

These benefits could be attractive to SMEs. So-called triple certificates, as the ones issued in the good practice example below, are an example of the integration of three management systems.

#### **Good practice 22 – Triple Certificates – Sweden**

This case study shows how systems integration is possible for SMEs. In 2001, the consultancy arm of the Swedish Industry Association – Sinf environment & quality – supported by a range of other stakeholders<sup>127</sup> established a pilot project with 15 SMEs to implement an innovative approach to integrated environmental, quality as well as occupational health and safety management. The approach was motivated by a number of larger companies requesting greater environmental information from their supply chain and by the perceived bureaucracy associated with the separate implementation of quality, environmental as well as occupational health and safety systems.

#### **Innovative character**

Partly funded by the Swedish Agency of Business Development NUTEK, the 15 SMEs piloted the implementation of an innovative systematic approach that sought to integrate EN ISO 14001, ISO 9001 and the mandatory Swedish occupational health and safety law (AFS 2001:1), which is similar to OHSAS18001. The integrated system is based on the core requirements and structure of EN ISO 14001. The aim of integration was to create a streamlined non-bureaucratic system that could be jointly certified, so that participating enterprises obtained a triple certificate for their systems.

#### **SME-orientated**

Sinf environment & quality trained quality/environmental consultants and environmental graduates in the techniques of integrating systems and offered this consultancy support to the 15 pilot companies. Training, literature on the triple certificate approach, a workbook with checklists and a software package were additional products supplied to support the implementation of integrated systems. SMEs could choose to either integrate all three systems, and achieve a triple certificate, or to integrate just two, and obtain a dual certificate.

On average, it will take an SME 10 to 12 months to implement an integrated system; some achieve this in six months, in other cases it takes 18 months. External consultancy costs are between €5,000 and €15,000, but the newer recruits are opting to use the software application (costs €300) and undertake implementation without the use of consultants. Users have found most benefit when they integrate financial aspects into their systems, as this enables cost savings to be clearly shown, thus illustrating the benefit of integrating the three systems.

#### **Effectiveness – uptake of triple certificates**

Of the 15 original pilot SMEs (later complemented by another five), eight have achieved triple certificates, three have achieved dual certificates and nine are still working towards their triple certificates. More SMEs are currently joining the scheme and are going through the process. Nevertheless, uptake has not been as high as initially expected. Suggested reasons for this are a lack of knowledge about triple certificates, a lack of objective evaluations on their value (although some studies are now underway) and, interestingly, a lack of experience in large companies with systems integration and, therefore, an inability to value the efforts made by smaller companies.

#### **Feedback by users**

It was found that certification bodies often lack technical experts who had the competence to cover all three areas. Therefore, in general, two assessors were needed to undertake an audit for a triple certificate. This meant that certification costs were not as low as anticipated. Whereas for a small company employing 20 to 30 people a single certificate would cost between €2,500 and €3,000, a triple certificate would cost between €4,000 and €5,000, which is still a substantial amount for many SMEs.

*Interview with Lennart Piper, Sinf environment & quality*  
[www.sinf-mk.se](http://www.sinf-mk.se)

### **Commentary**

There are two key issues related to integrating systems:

- It is an emerging trend which offers SMEs potential benefits, but with which only limited experience has been made so far.
- Certifiers and verifiers sometimes lack the skills to cover all dimensions of an integrated system.

#### *An emerging trend*

The trend to integrated management systems is increasing and may present benefits for SMEs. It is hoped that the opportunity to move to a more streamlined system for a number of business issues (e.g. quality, environment and health and safety) could not only present cost savings and thus attract SMEs, but also improve internal management and business viability. It should be noted, however, that although experience so far is very limited, and most efforts are ad hoc, cost savings have not been as forthcoming as hoped. It remains to be seen whether the potentially demanding integrated standard that is currently being developed in Denmark will also appeal to SMEs.

#### *Lack of verifier/certifier skills*

A real issue for enterprises embarking on integrating systems is the lack of certifier/verifier experience with the variety of disciplines covered by an integrated system. The Swedish good practice above shows that finding individuals with the competencies to cover environment, quality, health and safety as well as social issues is difficult. The alternative would be to have a costly army of assessors traipsing round a small company, thus increasing the burden of assessment without the anticipated savings. This would undermine one of the potential advantages of integrated systems.

#### ***Final remark: relevance of integrated management systems to EMS uptake by SMEs***

Integrated management systems are a business response to the range of topic-specific management systems. They offer SMEs a potentially attractive cost-saving route to address their environmental impacts as well as other business issues. However, potential benefits are dependent on a range of information and support measures as well as on technically competent assessors of such systems.

### 3.5 BENEFITS OFFERED TO ENTERPRISES WITH AN EMS

The different forms of assistance given to companies to establish an EMS (“push factors”) play a key role in promoting its up-take (see section 3.3). However, offering specific benefits to companies with an EMS (“pull factors”) is also important, not only to attract new enterprises to an EMS, but also to maintain the commitment of those that have already established one and to secure re-certification/registration.

In considering this type of “post EMS” benefit, this section discusses mainly those that relate to EMAS and EN ISO 14001. Benefits offered by public authorities can take several forms, in particular:

- Public awareness and recognition
- Material advantages
- Regulatory relief/deregulation.

In this section, only the first two forms are considered. Few examples are currently reported on these topics. In most countries, benefits to enterprises that register to EMAS or are certified to EN ISO 14001 are limited in scope. Even less activity is reported on giving benefits to companies with a less formal EMS; this may be understandable, as there is not always certainty about what such a less formal EMS constitutes.

The area of regulatory relief and deregulation offers scope for potentially important benefits for companies with an EMS and, thus, the promotion of EMS uptake. However, as the area is the subject of two extensive ongoing projects (i.e. ENAP and REMAS<sup>128</sup>), it is excluded from this Best project to avoid duplication.

#### 3.5.1 INCREASING PUBLIC AWARENESS AND RECOGNITION

##### *Introduction*

Particularly in relation to EMAS, companies often complain about the lack of public recognition for their environmental efforts, which in theory can be a crucial intangible advantage. Public authorities can play a role in raising public awareness and recognition, for example by making positive publicity for front-runners, supporting environment-related marketing efforts of companies, and/or awarding environmental prizes. However, there is little evidence on how effective these efforts are.

There are a number of national awards which recognise companies’ efforts on the environment. However, these are not normally focused on EMSs, but on more general environmental actions (e.g. in France and Germany<sup>129</sup>) or on other more specific aspects such as reporting initiatives (e.g. in Finland and the UK). It is worth noting, however, that winners of national/regional awards often have achieved registration to EMAS or certification to EN ISO 14001<sup>130</sup>. Awarding prizes exclusively on the basis of the existence of an EMS entails a certain risk, as this creates a second level of “approval” in addition to the existing certification/registration systems.

### *Good practice example*

The good practice below is drawn from Austria, which has an annual EMAS conference, as part of a wider strategy to promote EMAS registered enterprises. The event seeks to give recognition to companies for their achievement of EMAS, while at the same time raising awareness of EMAS itself.

#### **Good practice 23 – EMAS Gala Event – Austria**

The Austrian Federal Ministry for Forestry, Agriculture, Environment and Water Management (BMLFUW) organises an annual EMAS conference, which is the highlight of the Austrian EMAS year. The conference has been organised since 1999, as a co-operation between the Federal Ministry and a different regional government each year. The conference held on 20 November 2003 celebrated 10 years of EMAS.

The annual EMAS Gala is centred upon two special events:

- The EMAS Award Ceremony for the best EMAS statement and
- The presentation of EMAS registration certificates.

The event also aims to showcase Austrian EMAS achievements during the last year and to present the latest developments in the EMAS field, mainly for companies and organisations that already know about EMAS. The Minister for the Environment and a prominent figure of a regional government always attend the conference, thus guaranteeing press coverage. The Award Ceremony is organised in co-operation with the Austrian industry journal *Gewinn*, giving further opportunities for publicity for the prize winners.

#### **Clear objectives**

The Conference forms part of the overall EMAS communication strategy of the Austrian Environment Ministry. As part of the same strategy, the Ministry is currently preparing the service package "Now - EMAS Initiative for Companies", a communication concept which includes services to help companies promote their EMAS achievements, e.g. with templates for posters and press releases. This concept is suitable for SMEs as they generally have very limited marketing resources of their own.

#### **SME-orientation**

The conference's main target group are EMAS registered companies and organisations. Other targets are EMAS experts such as consultants, researchers and civil servants. While SME needs are not specifically catered for, the opportunity for publicity and promotion through the EMAS award ceremony and the presentation of new EMAS registrations, makes the conference also attractive for SMEs.

#### **Positive feedback**

There is no formal mechanism to evaluate the conference's success, but the Ministry does receive feedback on an informal level, which is generally positive. Success can also be deduced from the constant level of participation since 1999, with about 200 participants in total.

#### **Reproducibility**

Key factors that contribute to the success of this annual event are:

- The relatively high number of EMAS registered companies in Austria
- The relatively high level of environmental awareness in Austrian companies
- The small size of the country, which implies that companies can attain a high profile in the media, both in environmental and business/industry publications.

These factors could imply that it might be difficult to reproduce the success of this event in the same form in all Member States.

*Interview with Andreas Tschulik, BMLFUW*  
<http://www.emas.gv.at>

Some countries have similar events. For instance, the Greek Ministry for the Environment organises formal galas at which the minister presents EMAS registrations and Eco-labelling awards to increase public recognition of the companies' achievements. A key success factor in the promotion of EMAS seems to be that raising public awareness of the scheme is only one part of a larger campaign of measures to promote it.

### *Commentary*

Key features in relation to increasing public awareness and recognition are:

- An EMS is a complex and difficult message to promote to the general public and requires a multi-faceted communication strategy
- It may be more effective to target specific audiences with tailored awareness approaches.

### *Difficult message*

The problem facing public authorities wishing to raise public awareness of EMSs, is that the general public is not interested in management systems, but in environmental issues and performance. An EMS is a difficult message to communicate. It appears dry and unrelated to the range of environmental messages that the public are usually fed by the media (e.g. "save the whale", "hole in the ozone layer"). EMSs are too complicated and procedural to attract public and (mainstream) media interest. This can perhaps be illustrated by the limited interest in EMAS environmental statements. In a pan-European review of registered sites<sup>131</sup> it was not only found that the sites' environmental statements were not directed at the general public, but also that the public did not request such statements. In fact, EMAS environmental statements were requested most frequently by researchers and students, followed by consultants and competitors.

The awareness-raising activities of public administrations vis-à-vis the general public are further complicated by the fact that more than one EMS exists in the market. Explaining the similarities of and differences between EMAS and EN ISO 14001 is not a straightforward matter; the large variety of less formal EMSs complicates this situation further. To the uninitiated non-EMS aware public the information is largely irrelevant. In the Austrian good practice example above, public authorities do not seek to address the general public specifically, but focus on a smaller, more specific audience.

The issue of increasing public awareness and recognition of EMSs, in particular for EMAS, is also linked to the organisational structures established at Member State level and discussed in section 3.1. The degree to which these structures involve key stakeholders and establish a



consistent and united promotional message appears to be one important factor in establishing recognition for participants in the scheme.

#### *Target specific audiences*

Given the difficulty of communicating the meaning and value of an EMS to the general public, the question arises as to whether the public is the group where awareness of EMSs needs to be raised. Targeting such activities to more specific audiences seems more useful. Evidence suggests that the key target audiences from whom businesses want recognition for their EMS efforts are<sup>132</sup>:

- Customers
- Regulators/local and regional authorities
- Banks
- Insurance firms.

Recognition is not always forthcoming from these groups, in part because of a lack of understanding of EMSs and their value. Public authorities could play a more active role in raising awareness amongst some of these specific target groups, thereby increasing the benefits to firms with an EMS.

#### **3.5.2 MATERIAL BENEFITS**

One of the reasons for companies to implement an EMS is that this will deliver material benefits. They hope that public and private actors will respond and reward them. The benefits that are hoped to accrue include:

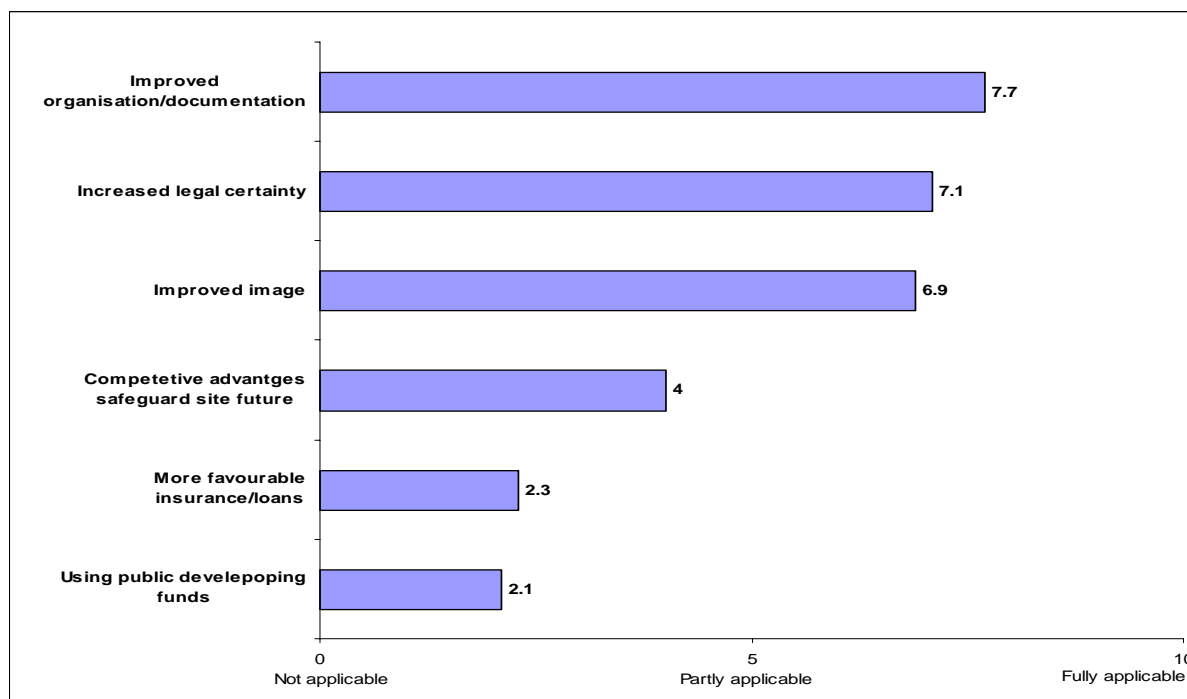
- Insurance would be either more easily obtained or cheaper
- Access to finance and loans would be facilitated
- Privileged treatment would be given in public procurement procedures.

In reality, however, material benefits are not materialising in the way expected, and evidence suggests that public administrations only play a limited role in stimulating market benefits. This may be one of the reasons explaining the current stagnation of EMAS uptake in some EU Member States.

#### *Insurance/bank loans*

Experiences made in Germany illustrate some of the disappointments concerning material benefits. In the early years of EMAS, a wide range of expected and desired benefits for EMAS registration were discussed including the reduction of insurance fees and preferential treatment for bank loans. In general, such expectations did not materialise. In a survey of EMAS registered sites carried out in 1998-1999 by the German Environmental Agency (*Umweltbundesamt*)<sup>133</sup>, most of the 70 per cent of all registered enterprises that took part in the survey stated that they had not gained more favourable conditions for their insurances/bank loans:

What beneficial effects did German companies gain from EMAS registration?



Thus, in contrast to other benefits such as “improved organisation/documentation”, where over 80 percent of the companies stated that this was applicable, cheaper insurance/loans did not represent a significant benefit reaped by EMAS registered enterprises in Germany.

It should be noted that one German insurance company – Gerling – does give preferential treatment to SMEs registered to EMAS or certified according to EN ISO 14001 (provided that they have a turnover of less than € 15 million).<sup>134</sup> However, for larger companies, certified EMSs are not automatically considered in the calculation of insurance fees. It should be kept in mind, however, that this is a private initiative without involvement by public authorities.

#### *Access to finance*

Another area where public administrations can play a role but where little activity has been reported is the preferential access to finance for companies with an EMS. The Czech good practice below is one of the few examples of how this can be done.

#### **Good practice 24 – Access to Finance – Czech Republic**

The Czech “MARKET” Programme, which began in 2000, provides financial assistance to enable SMEs to obtain certification to EMSs (EN ISO 14001, EMAS) or quality management systems (QMSs). Should SMEs seek to introduce an integrated management system (ISO 9000 and EN ISO 14001), an additional financial incentive is offered.

Interestingly, the Programme also enables those enterprises that have *already* introduced EN ISO 14001 or EMAS to receive financial assistance in meeting interest payment obligations incurred as a result of the acquisition of “tangible or intangible investment property” (such as machines or know-how) in pursuit of

environmental improvement goals. This has proved a valuable incentive to applicant SMEs and has been one of the hallmarks of the programme.

### **Effectiveness**

The MARKET Programme has been a significant contributor to the increase in uptake of EMSs among firms in the Czech Republic. Also thanks to the PHARE sector support scheme and the CHEMAS Project, the Czech Republic exceeded its 1991 national environmental policy objective of involving at least 150 organisations in the process of EMS implementation.

In July 2003, 471 enterprises possessed an EN ISO 14001 certificate, nine organisations were registered to EMAS, with a further five organisations having introduced EMAS and awaiting registration. Of these, 51 per cent had fewer than 250 employees. Over the past years, there has also been a corresponding increase in the number of certification bodies and environmental verifiers in the country.

*Pavel Ruzicka, EMAS Agency, Czech Environmental Institute*  
[www.ceu.cz](http://www.ceu.cz)

This good practice shows how the Czech government gives financial support to those SMEs which have implemented an EMS and are embarking on further environmental improvements that require investments. Providing preferential access to finance to companies with an EMS can be an important benefit, especially as the implementation of an EMS often identifies areas where financial investments are needed to bring about real environmental performance improvements (e.g. investments in cleaner technologies)<sup>135</sup>. Public administrations can play a key role in realising this benefit.

### *Public procurement*

An often-mentioned EMS-related material benefit is the retention of or increase in customers in the supply chain. In private sector supply chains this has materialised to varying degrees. However, initiatives by public authorities to recognise the efforts of companies with an EMS in *their* procurement practices are much scarcer. One reason for this seems to be that there is still confusion as to whether and how public administrations can set environmental criteria as a component of tender specifications.

Nevertheless, the trend towards greening national, regional and local administrations is increasing. This is likely to have a knock-on effect on their procurement activities and, more specifically, the inclusion of EMS-related provisions in tender specifications. One example is the Region of Madrid, where specific technical rules have been introduced allowing public contracts for civil engineers and consulting services to take EMAS registrations into account.<sup>136</sup> Currently restricted to the procurement activities of the *environmental* departments of the regional administration, the intention is to extend this practice further to all public procurement activities of the Administration of Madrid. In the UK, guidance in the form of the “Green Buyers Guide” has been put in place to encourage the incorporation of environmental considerations into procurement by public administrations<sup>137</sup>. It receives top-level political support and is endorsed by the Prime Minister.

However, it is worth highlighting that efforts to green public procurement are not undisputed, especially from an SME perspective. There are concerns that such activities may aggravate

the problems that SMEs, particularly small and micro enterprises, face already in securing public contracts.

### *Commentary*

The following reflections can be made on the role public authorities can play in stimulating market benefits for enterprises with an EMS:

- So far, public administrations have concentrated their efforts on pushing EMSs into the market rather than using pull strategies, i.e. creating market benefits for companies that have installed an EMS.
- Influencing conditions in relation to access to finance may be a more fruitful area for activities by public authorities than increasing insurance benefits.
- Great care needs to be taken when incorporating EMS-related provisions into public procurement activities, as this is potentially disadvantageous to SMEs vis-à-vis large companies.

### *Push/pull strategy*

Marketing refers to a “push/pull” strategy for a product, the “push” being the effort to get the product known (e.g. advertising) and the “pull” being activities to stimulate the market to respond to the product. Evidence suggests that public authorities have so far given most attention to policies and initiatives geared to pushing EMSs into the market, and that they have been less active in activating the market “pull”. Finding the right balance between the range of push/pull initiatives is important. Whilst it is not the exclusive role of public administrations to stimulate the market, they can clearly play a more active role.

### *Insurance and finance*

Public administrations have little influence over the insurance sector increasing benefits to companies with an EMS. This is different for benefits related to access to public finance. In this connection, improving conditions regarding financial support for environmental investments that are triggered by the implementation of an EMS can be particularly important.

### *Greening public procurement*

The use of strategies to green public procurement looks set to increase. This option, which is a potentially powerful way to increase enterprise involvement in EMSs, has a number of risks for the SME sector. Smaller enterprises already find it difficult to gain public contracts because of burdensome tendering processes. The addition of more requirements could therefore further exclude the sector from a potentially lucrative strand of business. The use of EMS-related provisions in tender specifications should be carefully monitored to ensure that SMEs are not disadvantaged and potentially put out of business.

### 3.5.3 *REGULATORY RELIEF/DEREGULATION*

Regulatory relief and deregulation offer scope for potentially important benefits for companies with an EMS and, thus, the promotion of EMS uptake. The EMAS Regulation acknowledges this by specifically mentioning, in Article 10.2, that Member States should consider how EMAS could be used in the implementation and enforcement of environmental legislation.

A recent comparative study by the Institute for European Environmental Policy prepared in the context of the Dutch ENAP project<sup>138</sup>, demonstrates that many Member States have already explored ways of combining an EMS with the granting of permits, inspection and enforcement. Research is also conducted into the correlation between EMSs and environmental compliance and performance. This is done in the UK-led REMAS project. Given this ongoing work, the area of regulatory relief was excluded from the scope of this Best project, as pointed out in the introduction to this section.

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## APPENDICES

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**APPENDIX 1 – LIST OF EXPERT GROUP MEMBERS****Austria**

Dr. Karin Feiler  
Bundesministerium für Wirtschaft und Arbeit  
Head of the Unit 'Nachhaltige Wirtschaftsentwicklung'  
Stubenring 1  
1011 Wien  
Austria  
Phone: +43 1 71100-2211  
Fax: +43 1 7142722  
Email: [karin.feiler@bmwa.gv.at](mailto:karin.feiler@bmwa.gv.at)

**Czech Republic**

Mrs. Dagmar Sucharovova  
Ministry of Environment  
Deputy Director of the Division "Strategies"  
Phone: +420 2 67122784  
Fax: +420 2 67310307  
Email: [sucharovova@env.cz](mailto:sucharovova@env.cz)

**Denmark**

Mr. Christopher Balle  
Danish Standards Association  
Kollegievej 6  
2920 Charlottenlund  
Denmark  
Fax: +45 39 966102  
Email: [cb@ds.dk](mailto:cb@ds.dk)

**Finland**

Ms. Marja Jallinoja  
Motiva Oy  
Sector Manager (Industry)  
P.O. Box 489  
00101 Helsinki  
Finland  
Phone: +358 9 85653129  
Fax: +358 9 85653199  
Email: [marja.jallinoja@motiva.fi](mailto:marja.jallinoja@motiva.fi)

Mr. Pertti.Koski  
Motiva Oy  
P.O. Box 489  
00101 Helsinki  
Finland  
Pertti.koski@motiva.fi

### **France**

Mr. Jean-Louis Langeron  
Ministère de l'Economie, des Finances et de l'Industrie  
DIGITIP  
Bâtiment Sully  
64, allée de Bercy  
75572 Paris Cédex 12  
France  
Phone: +33 (0)1 53 449698  
Fax: +33 (0)1 53 449888  
Email: [jean-louis.langeron@industrie.gouv.fr](mailto:jean-louis.langeron@industrie.gouv.fr)

### **Germany**

Dr. Hermann Hüwels  
Deutscher Industrie- und Handelskammertag  
Vertretung bei der Europäischen Union  
Boulevard Clovis 49 A  
B-1000 Bruxelles  
Tel.: +32-2-2861 664  
Fax: +32-2-2861 605  
Email: [huewels.hermann@bruessel.dihk.de](mailto:huewels.hermann@bruessel.dihk.de)

### **Hungary**

Ms. Marta Hibbey  
Ministry of Economy & Transport  
H-1054, K Kálmán Imre str 2  
Budapest  
Hungary  
Phone: +361 472 86 05  
Fax: +361 472 84 28  
Email: [hibbeyne@gkm.hu](mailto:hibbeyne@gkm.hu)

### **Ireland**

Ms. Dorothy Maxwell  
Enterprise Ireland  
Environment Unit

Senior Environmental Specialist  
Glasnevin, Dublin 9  
Ireland  
Phone: +353 1 8082612  
Fax: +353 1 8082259  
Email: [dorothy.maxwell@enterprise-ireland.com](mailto:dorothy.maxwell@enterprise-ireland.com)

### **Italy**

Mr. Fausto Santangelo  
Ministry of Trade & Industry  
Enterprise Department  
Via Grippo 8  
85100 Potenza  
Phone: +39 971 476002  
Fax: +39 971 476002  
Email: [fausto.santangelo@tiscali.it](mailto:fausto.santangelo@tiscali.it)

### **Latvia**

Mrs. Marija Ebersteine  
Ministry of Economics of Latvia  
Department of Industry  
Deputy Head of Industrial Policy Division  
Brivibas Street 55  
V-1519 Riga  
Latvia  
Phone: +371 7 013133  
Email: [EbersteineM@lem.gov.lv](mailto:EbersteineM@lem.gov.lv)

### **Norway**

Ms. Live Rud  
Adviser  
GRIP – Center for sustainable production and consumption  
Norway  
Phone: +47 22 97 98 22  
Email: [live.rud@grip.no](mailto:live.rud@grip.no)

### **Poland**

Dr. Jacek Boba  
Central Mining Institute  
Manager of the National Centre for the Implementation of Cleaner Production  
Plac Gwarkow 1  
40-166 Katowice  
Poland

Phone: +48 32 2592138  
Fax: +48 32 2592131  
Email: [scpxjb@gig.katowice.pl](mailto:scpxjb@gig.katowice.pl)

### **Portugal**

Ms. Paula Cristina Gomes  
Direcção Geral da Industria  
Avenida Visconde Valmor, 72  
1069-041 Lisboa  
Portugal  
Phone: +351 21 7102058  
Fax: +351 21 7102114  
Email: [paula.gomes@dgi.min-economia.pt](mailto:paula.gomes@dgi.min-economia.pt)

### **Romania**

Ms. Maria Ana Comanoiu  
Environmental Expert  
Ministry of Agriculture, Forests, Waters and Environment  
General Directorate for Environmental Protection  
12, Bd. Libertatii, Sector 5, Bucharest  
Romania  
Phone: +40 21 335 3382  
Fax: +40 21 410 0531 or +40 21 410 0282  
Email: [comanoiu@mappm.ro](mailto:comanoiu@mappm.ro)

### **Sweden**

Mr. Tomas Gärdström  
Swedish Business Development Agency (NUTEK)  
Sustainable Development Unit  
117 86 Stockholm  
Phone: + 46 8 6819303  
Fax: + 46 8 6819445  
E-mail: [tomas.gardstrom@nutek.se](mailto:tomas.gardstrom@nutek.se)

Mr. Sven-Olof Ryding  
Swedish Environmental Management Council  
General manager  
PO Box 70396  
10724 Stockholm  
Sweden  
Phone: +46 8 50636254  
Fax: +46 8 50636259  
Email: [sven-olof.ryding@miljostyrning.se](mailto:sven-olof.ryding@miljostyrning.se)

**United Kingdom**

Mr. Michael Jones  
Department of Trade & Industry  
151 Buckingham Palace Road  
London SW1W 5SS  
UK  
Phone: +44 1403 259546  
Fax: +44 20 72152988  
Email: [michaelrjones@clara.co.uk](mailto:michaelrjones@clara.co.uk)

**European Association of Craft, Small and Medium-sized Enterprises**

Mr. Guido Lena  
UEAPME  
Rue Jacques de Lalaing 4  
1040 Brussels  
Belgium  
Phone: +32 2 2307599  
Fax: +32 2 2307861  
Email: [g.lena@ueapme.com](mailto:g.lena@ueapme.com)



---

**APPENDIX 2 – LIST OF INTERVIEWEES FOR GOOD PRACTICES****Interviewees**

- Mr. Christopher Balle 17  
Danish Standards Association  
Kollegievej 6  
2920 Charlottenlund  
Denmark  
Tel: + 45 39 96 61 01  
Fax: +45 39 966102  
Email: [cb@ds.dk](mailto:cb@ds.dk)
- Mr. Kurt Börjesson 13  
Altea AB  
Box 200  
581 02 Linköping  
Sweden  
Tel: +46 13 16 30 30  
Fax: +46 13 16 30 34  
Email: [kurt@altea.se](mailto:kurt@altea.se)  
Web site: [www.altea.se](http://www.altea.se)
- Mr. David Derre (successor: Ms. Sylvie Letouche) 16  
Coordinateur Régional  
Union des Industries et des métiers de la métallurgie de Bretagne  
4 bis, Allée du bâtiment  
Bat. A, Immeuble Le Corail  
35000 RENNES  
France  
Tel: +33 2 99 87 42 97  
Fax: +33 2 23 21 21 05  
Email: [sletouche@entreprises35.fr](mailto:sletouche@entreprises35.fr)  
Web site: <http://www.region-bretagne.fr/>
- Mr. Pierpaolo Dettori 14  
CONSER  
Società Cooperativa Consortile a.r.l  
Via Toscana 6/b  
59100 Prato  
Italy  
Tel: +39 0574 730 305  
Fax: +39 0574 667094  
Email: [servizialeimprese@ui.prato.it](mailto:servizialeimprese@ui.prato.it)  
Web site: [www.conser-prato.com](http://www.conser-prato.com)  
Web site: <http://www.macrolotto-prato.com/>

- 
- Ms. Bonny Donders 6  
The Ministry of Housing, Spatial Planning and the Environment  
Department for Climate Change and Industry  
P.O. box 30945  
2500 GX Den Haag  
Tel: + 31 (0)70 3392780  
Fax: +31 (0)70 3391313  
Email: [bonny.donders@minvrom.nl](mailto:bonny.donders@minvrom.nl)  
Web site: [www.minvrom.nl](http://www.minvrom.nl)  
Web site: [www.fo-industrie.nl](http://www.fo-industrie.nl)
- Mr. Hanne Eriksen 9  
Danish Environmental Protection Agency  
Tel: +45 32 66 0100  
Email: [hex@mst.dk](mailto:hex@mst.dk)  
Web site: [www.depa.dk](http://www.depa.dk)
- Dr. Stefan Frey 8  
Ministerium für Umwelt u. Verkehr Baden-Württemberg  
(Ministry for Environment and Traffic Baden-Württemberg)  
Kernerplatz 9  
D - 70182 Stuttgart  
Germany  
Tel: +49 711 126 2664  
Fax: +49 711 126 2881  
E-mail: [Stefan.Frey@uvm.bwl.de](mailto:Stefan.Frey@uvm.bwl.de)  
Web site: <http://www.uvm.baden-wuerttemberg.de/uvm/>
- Mr. Tomas Gärdström 7  
NUTEK  
Enheten för Hållbar utveckling  
117 86 Stockholm  
Sweden  
Tel: +46 8 6819303  
Fax: +46 8 6819445  
Email: [tomas.gardstrom@gw.nutek.se](mailto:tomas.gardstrom@gw.nutek.se)  
Web site: [www.nutek.se](http://www.nutek.se)
- Ms. Paula Cristina Gomes 10  
Direcção Geral da Industria  
Avenida Visconde Valmor, 72  
1069-041 Lisboa  
Portugal  
Phone: +351 21 7102058  
Fax: +351 21 7102114  
Email: [paula.gomes@dgi.min-economia.pt](mailto:paula.gomes@dgi.min-economia.pt)

- 
- Mr. Rainer Guse 4  
Geschäftsstelle Umweltpakt Bayern im Bayrischen Staatsministerium  
für Landesentwicklung und Umweltfragen  
(Office of the environmental pact of Bavaria in the Bavarian Ministry  
for Regional development and Environmental Affairs)  
Rosenkavalierplatz 2  
D-81925 München  
Germany  
Tel: +49 89 9214 3391  
Fax: +49 89 9214 2471  
Email: [umweltpakt.bayern@stmlu.bayern.de](mailto:umweltpakt.bayern@stmlu.bayern.de)  
Web site: <http://www.umweltpakt.bayern.de>
- Mr. Greg Hall 15  
Project Manager  
Environment Group  
CIRIA (Construction Industry Research & Information Association)  
6 Storey's Gate  
London SW1P 3AU  
UK  
Tel: +44 207 222 8891  
Fax: +44 207 2221 708  
Email: [greg.hall@ciria.org.uk](mailto:greg.hall@ciria.org.uk)  
Web site: [www.circa.org](http://www.circa.org)
- Dr. Thomas Hruschka 19  
Umweltschutzabteilung der Stadt Wien  
Ebendorferstr. 4  
A-1082 Wien  
Austria  
Tel: +43 (0) 1 4000 88299  
Fax: +43 (0)1 4000 99 88299  
Email: [office@oekobusinessplan.wien.at](mailto:office@oekobusinessplan.wien.at)  
Web site:  
<http://www.oekobusinessplan.wien.at/umweltprogramme/oekoprofit>
- Dr. Hermann Hüwels 1  
Deutscher Industrie- und Handelskammertag  
Vertretung bei der Europäischen Union  
Boulevard Clovis 49 A  
B-1000 Bruxelles  
Tel.: +32-2-2861 664  
Fax: +32-2-2861 605  
Email: [huewels.hermann@bruessel.dihk.de](mailto:huewels.hermann@bruessel.dihk.de)

- 
- Mr. Päivi Kippo-Edlund 5  
Johtava konsultti/Leading Consultant  
Efektia Oy/Efektia Ltd  
Ympäristöjohtaminen/Environmental Management  
Toinen linja 14  
FIN-00530 Helsinki  
Finland  
Tel: +35 8 9 771 2692, +358 50 66743  
Fax: +35 8 9 771 2296  
Email: [paivi.kippo-edlund@efektia.fi](mailto:paivi.kippo-edlund@efektia.fi)
- Mr. Timo J. Lehtonen 5  
Mikkelin kaupunki, ympäristöpalvelut  
Jääkärintie 14  
50100 Mikkelä  
Finland  
Tel: +358 15 194 4715  
Mobile: +358 44 794 4715  
Fax: +358 15 194 4799  
Email: [Timo.lehtonen@mikkeli.fi](mailto:Timo.lehtonen@mikkeli.fi)  
Web site: <http://www.mikkeli.fi/ymparisto/versio.html>
- Mr. Hans Otto Lund 20  
Marketing manager  
Eco-lighthouse  
Markensgate 9  
N-4610 Kristiansand  
Norway  
Tel: + 47 3810 2831  
Mobile: + 47 908 70 550  
Fax: + 47 3810 2833  
Email: [hans.otto@miljofyrtarn.no](mailto:hans.otto@miljofyrtarn.no)  
Web site: [www.eco-lighthouse.com](http://www.eco-lighthouse.com)
- Mr. Marcel van Meesche 21  
ABECE  
35 rue Van Elewyck  
1050 Bruxelles  
Belgium  
Tel: + 32 2 644 96 66  
Fax: + 32 2 644 94 20  
Email: [abece@skynet.be](mailto:abece@skynet.be)  
Web site: <http://www.Ecomapping.org>
- Mr. Lennart Piper 22  
Swedish Industry Association - Sinf  
Sinf environment & quality

Box 22307, Flemingatan 14  
SE-104 22 Stockholm  
Sweden  
Tel: + 46 8 4401197  
Mobile: + 46 708 858780  
Email: [lennart.piper@sinf-mk.se](mailto:lennart.piper@sinf-mk.se)  
Web site: [www.sinf-mk.se](http://www.sinf-mk.se)

Mr. Jürgen Richter 1  
IHK Berlin  
(Camber of Trade and Commerce, Berlin)  
Fasanenstr. 85  
D-10623 Berlin  
Germany  
Tel: +49 30 315 10-437  
Fax: +49 30 315 10-116  
Email: [ric@berlin.ihk.de](mailto:ric@berlin.ihk.de)  
Web site: <http://www.ihk-berlin24.de>

Mr. Ulla Ringbaek 2  
Danish Environmental Protection Agency  
Strangade 29  
DK 1401 - Copenhagen  
Denmark  
Email: [ur@mst.dk](mailto:ur@mst.dk)  
Web site: [www.depa.dk](http://www.depa.dk)

Ms. Véronique Roger 11  
Adege Environnement  
77, rue de Rome  
75017 Paris  
France  
Tel: +33 1 53 42 19 26  
Fax: +33 1 45 22 12 83  
Email: [p.regnier@adege.com](mailto:p.regnier@adege.com)  
Web site: <http://www.adege-env.com/>

Mr. Pavel Ruzicka 24  
EMAS Agency, Czech Environmental Institute  
Kodanska 10,  
Praha 10, 100 10  
Czech Republic  
Tel: +420 2 67 225 312  
Email: [pavel.ruzicka@ceu.cz](mailto:pavel.ruzicka@ceu.cz)  
Web site: [www.ceu.cz](http://www.ceu.cz)

- 
- Mr. Fausto Santangelo 14  
Ministry of Trade and Industry  
Enterprise Department,  
Via Grippo 8,  
85100 POTENZA,  
Italy  
Tel: +39 971 476002  
Email: [fausto.santangelo@tiscali.it](mailto:fausto.santangelo@tiscali.it)
- Mr. Christopher Sheldon 18  
Chairman  
The Acorn Trust  
The Acorn Committee  
c/o IEMA  
St Nicholas House  
70 Newport  
Lincoln LN13DP  
UK  
Tel: +44 1202 432 388  
Email: [C.D.Sheldon@open.ac.uk](mailto:C.D.Sheldon@open.ac.uk)  
Web site: <http://www.theacorntrust.org>
- Mr. Frans Stuyt 3  
SCCM  
Parkstraat 83  
2514 JG Den Haag  
The Netherlands  
Postbus 18505  
2502 EM Den Haag  
The Netherlands  
Tel: + 31(0)70 3623981  
Fax: + 31(0)70 3635084  
Email: [f.w.stuyt@wxs.nl](mailto:f.w.stuyt@wxs.nl)  
Web site: [www.sccm.nl](http://www.sccm.nl)
- Mr. Andreas Tschulik 23  
Federal Ministry for Agriculture, Forestry, Environment and Water  
Management (BMLFUW)  
Stubenbastei 5  
A-1010 Vienna  
Austria  
Tel: +43 (0) 1 515 22-1651  
Email: [Andreas.Tschulik@bmlfuw.gv.at](mailto:Andreas.Tschulik@bmlfuw.gv.at)  
Web site: <http://www.emas.gv.at>

Mr. Marco Walter 12  
Ecocamping e.V.  
Paradiesstr 13  
78462 Konstanz  
Germany  
Tel: +49 (0) 75 31-90 98-90  
Fax: +49 (0)75 31-90 98-77  
Email: [info@ecocamping.net](mailto:info@ecocamping.net)  
Web site: [www.ecocamping.net](http://www.ecocamping.net)



## APPENDIX 3 – CONSULTANCY TEAM

### *Project Management Team*

Dr. Ruth Hillary (project specialist)  
Technical Director of Corporate Sustainability  
Scott Wilson  
71 Victoria Street  
London SW1H OSW, UK  
Tel: +44 (0)20 7976 7766  
Fax: +44 (0)20 7976 7575  
E-mail: [ruth.hillary@scottwilson.com](mailto:ruth.hillary@scottwilson.com)  
Website: [www.scottwilson.com](http://www.scottwilson.com)

Dr. Mark Watson (project manager)  
Scott Wilson  
71 Victoria Street  
London SW1H OSW, UK  
Tel: +44 (0)20 7976 7766  
Mobile: +44 (0)771 893026  
Fax: +44 (0)20 7976 7575  
E-mail: [mark.watson@scottwilson.com](mailto:mark.watson@scottwilson.com)  
Website: [www.scottwilson.com](http://www.scottwilson.com)

### *Technical Team*

Ms. Claire Buckley  
KWI Management Consultants & Auditors  
Brussels Office  
Centre Dansaert  
rue d'Alost 7  
B-1200 Brussels  
Tel: + 32 2-2133-800  
Fax: + 32 2-2133-677  
Mobile: + 32 486-956232  
Email: [cb@kwi.be](mailto:cb@kwi.be)  
<http://www.kwi.at>

Mr. Heinz Werner Engel  
Eco-Counselling Enterprise scrl  
35 rue van Elewyck  
1050 Brussels  
Belgium  
Tel: + 32 2 644 96 69  
Fax: + 32 2 644 94 20  
Email: [hwengel@skynet.be](mailto:hwengel@skynet.be)

Mr. Thomas Loew  
Institut für ökologische Wirtschaftsforschung (IÖW) GmbH  
(Institute for Ecological Economy Research)  
Research area Environmental Management  
Potsdamer Str. 105  
D-10785 Berlin  
Germany  
Tel: +49(0)30.884 59 4-17  
Fax: +49(0)30.882 54 39  
Email: [thomas.loew@ioew.de](mailto:thomas.loew@ioew.de)  
<http://www.ioew.de>

Mr. Fraser Paterson  
Scott Wilson  
16 Priestgate  
Peterborough  
Cambridgeshire PE1 JA  
UK  
Tel: +44 01733 896655  
Fax: + 44 1733 896656  
E-mail: [fraser.paterson@scottwilson.com](mailto:fraser.paterson@scottwilson.com)  
[www.ScottWilson.com](http://www.ScottWilson.com)

## APPENDIX 4 - FOOTNOTES

<sup>1</sup> ISO 14001 was first published in 1996 and specifies the actual requirements for an environmental management system. It applies to those environmental aspects which the organization has control over and on which it can be expected to have an influence. ISO 14001 is often seen as the corner stone standard of the ISO 14000 series. It is not only the most well known, but also the only ISO 14000 standard against which it is currently possible to be certified by an external certification authority.

<sup>2</sup> Following a mandate given by the European Commission (Environment Directorate-General) in December 1996, CEN adopted a number of ISO standards (i.e. ISO 14001, ISO 14031 and ISO 19011) as European (“EN ISO”) standards. When ISO 14001 became the European standard EN ISO 14001, the corresponding (potentially contradictory) national standards in the CEN member countries (EU and EFTA) were withdrawn. As this report deals with EMS uptake in *Europe*, it mostly refers to the European standard EN ISO 14001, except in some cases, for instance where the standard is referred to in *general*, non-geographical terms or in relation to non EU Member States.

<sup>3</sup> Regulation (EC) No 761/2001 – Allowing voluntary participation by organisations in a Community eco-management and audit scheme (EMAS), Official Journal L114 of 24 April 2001 (see: [http://www.europa.eu.int/comm/environment/emas/documents/legislative\\_en.htm](http://www.europa.eu.int/comm/environment/emas/documents/legislative_en.htm)).

<sup>4</sup> It should be noted that this report applies a somewhat simplified definition of SMEs. The official (revised) EU definition of SMEs is not only based on staff numbers, but also on annual turnover and/or annual balance sheet. For further details see the Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises – OJ L 124 of 20.5.2003.

<sup>5</sup> See for further details: European Commission (2002 (a)).

<sup>6</sup> See KPMG Environmental Consulting (1997), page 13.

<sup>7</sup> According to a survey published in January 2003 by NetRegs, a joint initiative between UK environment agencies and small business, 86 per cent of all SMEs do not consider their activities harmful to the environment and only 18 per cent of them is able to mention any environmental legislation that applies to them. On a more positive note, the study also shows that most larger SMEs have undertaken practical measures to reduce harm to the environment.

<sup>8</sup> See for instance: NUTEK (2003), page 9-10.

<sup>9</sup> *Idem*, page 2.

<sup>10</sup> In the formal (ISO) definition, an EMS is the part of the overall management system of an organisation that includes the organisational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the organisation’s environmental policy.

<sup>11</sup> BS 8555:2003, EMS: Guide to the phased implementation of an EMS including the use of environmental performance evaluation, British Standards Institution.

<sup>12</sup> See on the respective merits of formal and less formal EMSs also chapters 4 and 5 of the Standard Text on Environmental Management: final text adopted by the IPPC Information Exchange Forum in November 2002 in the context of the IPPC Directive (see: <http://www.infomil.nl/contents/pages/00001957/standardemstext-finalversion.pdf>).

<sup>13</sup> Hillary, R (1999).

<sup>14</sup> There seems to be general agreement in the literature that the average relative implementation costs of a formal EMS (which are largely made up of certification and consultancy costs) are inversely proportional to company size: the smaller the company, the higher the EMS implementation cost as a percentage of turnover or employee number.

<sup>15</sup> A plethora of studies exist on the effects of EMSs. A literature study prepared for the Commission’s Environment Directorate-General in 2002 (in: European Commission, 2002 (c)), “The State of EMAS in the EU. Eco-Management as a Tool for Sustainable Development” (in particular chapter 5) points out that the environmental effects of EMAS and other EMSs have been investigated using various different methods and that their results are not always easy to interpret and quantify. Whilst, according to the same study, economic results are reported to be generally positive, clear quantitative financial data often seem to be lacking. One example of research on the effects of EMSs is the comprehensive study published jointly by the German Federal Ministry for the Environment and the Federal Environmental Agency in August 2000. The study concludes that EMSs (both EMAS and EN ISO 14001) contribute effectively to mitigating industries’ impact on the environment and to preserving resources. It adds that goal-oriented EMSs such as EMAS could lend more dynamic force to conservation efforts. Another example is a Swedish study (Enroth, M., A. Widing and M. Zackrisson (2000)), which concludes, amongst other things, that in terms of the environmental effects of EMS implementation the biggest improvements have been achieved in relation to waste. It also indicates that EMAS-registered companies seem to achieve better environmental performance than companies with only EN ISO 14001, although the difference is said not to be very big. Economic effects of EMS implementation are said to be largely positive. A final example is the major American study recently prepared for the US Environmental Protection Agency (Andrews, R. et al. (2003)), which reports the effects of EMS implementation (both ISO 14001 and self-designed systems) by a sample of 83 facilities in 17 US states. It draws the overall conclusion that the introduction of an EMS “can be expected to be at least somewhat beneficial to the environmental performance of most facilities, as well as to their operating and management efficiencies, and in some cases to the regulatory compliance patterns” (see executive summary, page 25). At the same time, the study also notes that the investigated EMSs were highly variable in their contents, priorities and judgements of significance and that the existence or

certification of an EMS per se does not necessarily provide any clear information about the facility's actual environmental performance, compliance or rate of improvement. In this respect, the study makes an interesting distinction between three basic types of EMSs: "middle-roaders", which do not reach for high-level goals nor involve many stakeholders in design and whose EMSs are less likely to be certified; "efficiency-experts", whose EMSs are more likely to be ISO 14001 certified and which focus on eco-efficiency; and a smaller cluster of "visionaries", whose EMSs include more far-reaching environmental sustainability goals and broader participation in EMS development than others.

<sup>16</sup> For a critical view see: ANEC/EEB (2003).

<sup>17</sup> A prominent example of ongoing research efforts in this area is the UK REMAS project (see for more information: [www.remas.info](http://www.remas.info)). This three-year project, launched in autumn 2002, aims at reaching a consensus on the value of independently certified EMSs to the environmental regulator. It studies the relationship between EMS engagement and environmental performance by examining up to 500 industrial sites across Europe. The project is based on the assumption that EMSs improve various aspects of industry performance and can help regulators to do a better job. Its main objective is to provide further data to substantiate this claim.

<sup>18</sup> The Best project on benchmarking the administration of start-ups (finished early 2002) is based on a largely numerical approach, with both "headline benchmarks" (time and costs of start-ups in different Member States) and "operational benchmarks" (number of procedures, contact points, official forms to be filled in, required licenses etc.) being defined in quantitative terms.

<sup>19</sup> A similar method was used in a German best practice project in this area ("PRO-EMAS"). This concentrated on best practices under four main approaches: direct support, public recognition, strategic embedment and networking.

<sup>20</sup> Registrations of "entities" under EMAS are either site-based (this was the practice under EMAS I) or organisation-based (EMAS II allows organisations to regroup several sites under one registration number). However, in the latter case, site-specific verification and site-related data are still required in most cases. To compare and aggregate EMAS and ISO data, "organisations" is the best measurement unit, as ISO certifications are organisation-based. The question is how relevant the distinction between sites and organisations is for SMEs, as in this case "site" and "organisation" will often coincide.

<sup>21</sup> In accordance with a recent Commission publication (European Commission, 2002 (a)), private enterprises are defined as non-primary private enterprises, i.e. all enterprises with the exception of state-owned enterprises and private enterprises from the forestry and fishing industry.

<sup>22</sup> As covered by the NACE D code.

<sup>23</sup> As covered by the NACE C (extraction) and NACE D (manufacturing) codes with the addition of electricity, gas, steam and hot water production and the recycling, treatment, destruction or disposal of solid or liquid waste.

<sup>24</sup> For instance, total EMAS-related data per *Land* are available for Germany. In the Netherlands ISO-data are registered per province.

<sup>25</sup> For EMAS registered organisations, data about sectoral division according to NACE codes and trends in time are available, but data related to size class are not communicated by all countries.

<sup>26</sup> For ISO 14001 only aggregate data per country seem to be available. See for instance <http://www.iso14000.com/Community/RegisteredList.htm>

<sup>27</sup> This does not mean that no data exist at all. For instance, in chapter 3 of a recent Commission publication (European Commission, 2002(b)) reference is made to data on the share of SMEs with an "ad hoc environmental policy" in the UK, the Netherlands, Spain and Italy. In addition, data may be available for participation rates in a number of less formal EMSs such as *ÖKOPROFIT* (Austria, Germany and other countries), "Eco-Lighthouse" (Norway) and the "Green Dragon" in Wales.

<sup>28</sup> The data contained in graphs 1 and 2 were collected by Mr. Reinhard Peglau from the German Federal Environmental Agency (UBA) – see for further details: <http://www.ecology.or.jp/isoworld/english/analy14k.htm>. They have been complemented with data provided by the Best Expert Group members themselves.

<sup>29</sup> European Commission (2002 (a)), page 17.

<sup>30</sup> Whilst precise data are scarce for most countries (particularly for EN ISO 14001 certificates), estimates given by the Best Expert Group members indicate that the number of SMEs with a formal EMS as part of the total number of private enterprises with a formal EMS ranges from 25 per cent (for EMAS in the UK) to more than 80 per cent (for both EMAS and EN ISO 14001 in Austria). Within the SME population medium-sized and small companies tend to be better represented than micro-companies.

<sup>31</sup> However, some data do exist. For instance, in Germany between 1500 and 2000 companies are estimated to participate in the *ÖKOPROFIT* scheme (see good practice 19); most of them are likely to be SMEs. In Norway, more than 500 SMEs have obtained an "Eco-Lighthouse" certificate (see good practice 20).

<sup>32</sup> In defining these five categories account has been taken of the information provided by the "Best" Expert Group members as well as of relevant literature (for example Wätzold et al. (2000); Dalhammar (2000); and Klemisch and Rohn (2002).

<sup>33</sup> Best projects typically apply selection criteria to determine good/best practice. Such selection criteria tend to be limited in number and a mix of qualitative and quantitative. Examples include the Best projects on Benchmarking the Administration of Business Start-ups (2002) Education and Training for Entrepreneurship (2000) and Female Entrepreneurs (2000). In this latter project, good practices among the more than 130 different national support measures have been identified on the basis of a number of "minimum" and "additional" criteria such as "clear definition of objectives", "client-orientation", "reach a critical mass in the target group", "visibility", "coherence" and "quality assurance". For further information on these and other Best projects see: [http://europa.eu.int/comm/enterprise/enterprise\\_policy/best/best\\_procedure.htm](http://europa.eu.int/comm/enterprise/enterprise_policy/best/best_procedure.htm)

<sup>34</sup> Note that this requirement implies that a relatively bigger weight is given to output (result-related) criteria than to input (intention-related) criteria: in the case of the former three out of four criteria have to be met, whereas in the case of the latter three out of six criteria need to be fulfilled.

<sup>35</sup> See Wätzold et al. (2000).

<sup>36</sup> See Articles 4, 5, 6 and 7 of EMAS Regulation.

<sup>37</sup> The abbreviations used stand respectively for: *Bundesverband der Deutschen Industrie* (Federal Association of the German Industry - BDI), *Zentralverband Deutsches Handwerk* (Central Association of German Crafts – ZDH), *Deutscher Industrie- und Handelskammertag* (Association of German Chambers of Industry and Commerce – DIHK) and *Handwerkskammer* (Chambers of Craft – HwK).

<sup>38</sup> Membership of the UGA is as follows: industry/enterprises (six representatives), environmental verifiers (four), representatives of the *Länder* and the Federal governments (six from Environment Ministries and three from Economic Affairs Departments), trade unions (three) and environmental NGOs (three).

<sup>39</sup> In Germany enterprise membership to the Chambers is compulsory. The Chambers see themselves as service providers to business by offering information and advice as well as lobbying.

<sup>40</sup> SCCM also acts as the EMAS competent body in the Netherlands.

<sup>41</sup> All certification bodies accredited in the Netherlands (both Dutch and foreign) are affiliated to the SCCM; accreditation requires certification in line with the SCCM rules. Foreign certification bodies that are accredited abroad can also operate on the Dutch market. Although it would in theory be possible for them to circumvent the SCCM rules (i.e. act as a free rider), in practice this problem seldom occurs, inter alia because the resulting certificates would be of less “value” in the Dutch market.

<sup>42</sup> The fee they pay to SCCM is based on the number of certificates.

<sup>43</sup> See Wätzold et al. (2000), page 24-27.

<sup>44</sup> It should be noted, however, that European representatives of the SME community have been involved to some degree in the development of EMAS and that national standards bodies are supposed to gather the views of businesses including SMEs on standards and feed these into the standards development process at national, European and international level.

<sup>45</sup> Another form of embedment is the obligation for companies in certain Member States (e.g. Ireland, Sweden and the UK) to have an EMS, formal or adapted, as part of an environmental permit, e.g. under the IPPC Directive. The Irish experience shows how EMSs are being deployed in mandatory legislation with some positive results. Ireland is a leading proponent of the implementation of an EMS (which does not have to be certified) as a condition of all IPPC licences. This strategy has resulted in 520 new EMSs many in SMEs including 6 new registrations to EMAS and 37 additional EN ISO 14001 certificates. Following the publication, in 2002, of the so-called “standard text” on EMSs adopted in the context of the IPPC Directive, this principle will in future apply to many more IPPC permits throughout Europe. As this Best project is limited to examples of the voluntary uptake of EMSs, this particular form of embedment will not be considered in this report.

<sup>46</sup> The use of EMS in the context of regional and local strategies for sustainable development was discussed at an OECD Conference in March 2002 held in connection with a project of the OECD’s Territorial Development Service on sustainable regional development.

<sup>47</sup> There is no target for the number of EN ISO 14001 certified companies.

<sup>48</sup> Through this scheme SMEs can receive a 60 per cent grant, up to the amount of (i) € 1,013 for carrying out eco-counseling; (ii) € 1,841 for the introduction of a less formal EMS (for example, according to the *Qualitätsverbund* label or *ÖKOPROFIT*); and (iii) € 3,068 for the introduction of a formal EMS in conformity with EMAS or EN ISO 14001.

<sup>49</sup> A good indicator of this is that 400 hairdressers participate in the Environmental Pact and display the label in their barbershops.

<sup>50</sup> Examples of these criteria are: compliance with legislation, implementation of at least one environmental measure per year, participation in the QuH workshops, provision of information sheets to customers containing a description of the establishment and its environmental relevance etc.

<sup>51</sup> The equivalence of the Bavarian *Umweltpakt* in Hessen and Sachsen is called *Umweltallianz*; details can be found at [www.umweltallianz.de](http://www.umweltallianz.de) and [www.smul.sachsen.de](http://www.smul.sachsen.de).

<sup>52</sup> See for further information: [www.provincia.torino.it/ambiente.htm](http://www.provincia.torino.it/ambiente.htm)

<sup>53</sup> See for more details the Commission Decision of 7 September 2001 on guidance for the implementation of Regulation (EC) No 761/2001, Annex I.7 (“Small enterprises operating in a given large territory and producing the same or similar products or services, seeking individual registration”) – OJ L247/24 of 17 September 2001, page 24.

<sup>54</sup> This is an estimate given in a report of the project by Päivi Kippo-Edlund; anecdotal evidence suggests that the figure may be higher.

<sup>55</sup> Agenda 21 targets are monitored with the EMS target being monitored every 4 years.

<sup>56</sup> Three pilot companies are currently working with three consultants to develop work packages on energy efficiency and eco-efficiency as well as a software package.

<sup>57</sup> See for further details on such “environmental agreements” two Commission Communications: a first Communication of 1996 (COM(96) 561 final of 27.11.1996) and a second Communication of 2002 (COM(2002) 412 final of 17.7.2002) which focused mainly on Environmental Agreements at Community level within the framework of the Action Plan on the Simplification and Improvement of the Regulatory Environment.

<sup>58</sup> The industrial sectors covered by covenants are: basic metals (37 enterprises covered), chemicals (112), dairy (66), metal products and electronics (17,000), textiles and carpets (47), paper and cardboard (26), printing (3,000), concrete and cement products (200), abattoirs and meat products (170), rubber and plastics (70) and oil and gas (11).

<sup>59</sup> The only exception to this is the covenant for the oil and gas sector because it includes only 8 large companies. This is an agreement between the sector and the Ministry of Economic Affairs.

<sup>60</sup> The 11 questions are:

- Does the company produce an environmental management statement?
- Is an outline available of all relevant environmental aspects of the operational management?
- Is an outline available of all legal requirements and guidelines for relevant environmental aspects?
- Does the company have a programme to decrease environmental pollution?
- Are the relevant environmental activities, responsibilities and authorities defined and assigned?
- Are the environmental activities laid down in procedures and work instructions?
- Does systematic monitoring and registration take place?
- Have procedures been laid down to deal with defects and complaints?
- Is a annual report produced about emissions and the company's environmental performance?
- Is internal information and education about environmental aspects provided?
- Is the EMS audited (internally or externally)?

<sup>61</sup> The organisation is widely respected because of its independence. It takes a neutral position on the consultative committees. For further information see: [www.fo-industrie.nl](http://www.fo-industrie.nl).

<sup>62</sup> A comparative review of environmental pollution within industry (1985 – 2000 –2010) was due for July 2003. Together with a study on the free rider issue, an general evaluation of environmental covenants and a study on new environmental issues, this review will be fed into a policy document (which the Minister of Housing, Spatial Planning and the Environment has promised the Dutch parliament) about the future of the 11 covenants. The policy document will pay special attention to SMEs.

<sup>63</sup> These are either companies that do not complete environmental plans including an EMS or local licensing authorities that do not make companies draw up environmental plans and install an EMS.

<sup>64</sup> Companies with sites in different regions have to deal with different and sometimes conflicting views from licensing authorities.

<sup>65</sup> The target for the cement sector contract is to have the six participating enterprises registered to EMAS by December 2004; the target for the glass packaging sector contract is to have the six participating companies registered to EMAS by December 2003. In the cement sector, three sites are already certified to EN ISO 14001 (one of which is preparing for EMAS registration) and another three are initiating certification. In the glass packaging sector all six sites have implemented an EMS with four having obtained certification to EN ISO 14001 in 2002; at the beginning of 2003 one company was in the final phase of registration to EMAS.

<sup>66</sup> The contract will be signed between the relevant departments of public administration and ANTRAM (the Portuguese National Association of Road Transport of Goods).

<sup>67</sup> EMAS registration will be undertaken through a project called "CODESSUS", which aims to contribute to sustainable development. For further information see: <http://www.antram.pt>

<sup>68</sup> Other types of financial incentives also exist, such as cheaper bank loans (e.g. in France and Italy) and reduced EMAS registration fees. Whilst some Member States charge EMAS registration fees, others charge no fees (e.g. the Netherlands, almost all Spanish *Comunidades*), or very low ones (e.g. Denmark). Fee bands exist in Finland (based on employee numbers), in the UK (based on type of organisation, which means that SMEs pay less) and in Germany (based on size and complexity of an organisation). There is no evidence to suggest that paying an EMAS registration fee is a deterrent to companies wanting to participate in the scheme. The decision not to charge registration fees or to reduce or scale such fees has more to do with making a gesture to the business community. No doubt, EMAS registration fees may be a source of irritation for SMEs as they can be viewed as a revenue collecting exercise by public administrations and because typically there is no such fee for EN ISO 14001.

<sup>69</sup> See for further information on the two schemes ("Grant for obtaining a management system certificate" and "Introduction to quality"): [www.parp.gov.pl](http://www.parp.gov.pl). Funding has proved successful in attracting (especially small) enterprises, of which 135 obtained EN ISO 14001 certificates between 2001 and 2002. The vast majority of the more than 2,000 grant agreements signed during 2001 and 2002 were connected to ISO 9000 certification.

<sup>70</sup> 99 per cent of all firms have fewer than 250 employees and two-thirds of all firms are micro-enterprises. In the private sector, six out of ten employees work in SMEs

<sup>71</sup> Pilot studies can receive up to 100 per cent grant funding (subject to an upper limit of SEK 100,000), which is given in relation to the number of participating companies.

<sup>72</sup> After project completion, project leaders submit a final report containing an economic statement of how the money was used and a description of specific tools or methods applied, or best practice examples. As the companies involved in each project report directly to the project leader, NUTEK has no direct contact with participant SMEs.

<sup>73</sup> From 2000 to 2001, €500,000 was spent on Convoy projects. Funding has been extended until 2004 but it is unclear whether there will be further funding beyond 2004.



<sup>74</sup> This “precursor” version consists of the following elements: an environmental check; the development of a basic environmental programme setting out the most relevant environmental measures, responsibilities and deadlines; documentation of the SME’s environmental performance, its environmental management and its future tasks; and a check of the documentation by an approved EMAS auditor. There is no official label for this light EMAS version because the intention is that it is upgraded to EMAS within three years.

<sup>75</sup> The Cleaner Products Programme attracts around DKK 30 million of government funding per annum and is available across Denmark. Local networking plays an important part in the running of the programme. SMEs can obtain a maximum of DKK 300,000 for advanced projects such as LCA, but the majority of grants disbursed to SMEs are around DKK 100,000 for EMS implementation. Companies wishing to participate in the programme apply using a standard form submitted to DEPA. The government expects them to demonstrate some knowledge of environmental management processes, either at the time of application or through designing a project to gain this knowledge.

<sup>76</sup> See Clement and Hansen’s (2002) finding that 28 per cent of applicants to the scheme had fewer than 10 employees, 20 per cent had 10-19 and 24 per cent had 19-49 employees.

<sup>77</sup> NUTEK (2003), pages 53-56.

<sup>78</sup> In the Expert Group set up for this Best project contradictory evidence was presented about whether or not funding is a key element to engage SMEs in EMS work. For instance, Mr. Jacek Boba, Manager of the National Centre for Implementation of Cleaner Production suggests that in Poland the State-funded grant/refund system is perhaps one of the most important drivers for SMEs to obtain EMS certification. Also, the high level of funding available in Austria and Germany was claimed to have contributed, at least in part, to the relatively large number of EMAS registered enterprises in these countries. On the other hand, experience from Ireland suggests that funding is one factor, but not the main one in motivating SMEs to implement an EMS.

<sup>79</sup> See: [www.EnviroCentre.ie](http://www.EnviroCentre.ie). This tool is provided by the Environmental Policy Department of Enterprise Ireland in conjunction with the Department of Enterprise Trade and Employment (DETE) as part of their ongoing environmental supports for Irish industry. Information and advice given to industry cover key environmental issues such as energy/climate change, eco-design, EMS, waste management, ambient air quality/emissions monitoring, aquatic toxicity testing, biological effluent treatment, noise/vibration, waste water treatment/monitoring.

<sup>80</sup> See: [www.envirowise.com](http://www.envirowise.com)

<sup>81</sup> 30 user sessions on average per day (sessions are tracked per IP address and must register at least one hit to be counted) and 2200 hits per day (A hit can be any request for data e.g. web page, file etc...) which based on web statistics would indicate medium to high usage of the site. However, it is not possible to distinguish the usage by SMEs alone or whether usage has resulted in EMS implementation.

<sup>82</sup> A review of 33 studies into environmental management in EMS by Hillary (1999) points this out as a key issue for SMEs.

<sup>83</sup> See Hillary (2000).

<sup>84</sup> This was one of the key findings from a pan-EU study of EMAS, see Hillary (1998).

<sup>85</sup> Guidance to verifiers on the verification of Small and Medium-Sized Enterprises (SMEs) particularly small and micro-businesses, Annex IV of Commission Recommendation of 7 September 2001, OJ. L 247/21 of 17.9.2001.

<sup>86</sup> See for more information: [www.inem.org](http://www.inem.org)

<sup>87</sup> Using a pilot consisting of five companies, all of which are drawn from different sectors and have less than 30 employees.

<sup>88</sup> ADEGE is co-financed by the EU ADAPT program. The three training programs proposed as part of the initiative are subsidised at 70 per cent by the European Social Fund (ESF) and the ADEME (French Environment and Energy Management Agency).

<sup>89</sup> The VISIT-ecolabel for sustained tourism development in Europe is developed with financial support from the LIFE programme of the European Commission. It serves to increase transparency, improve the co-operation between existing tourism-related ecolabels and to make them more familiar to consumers, tour operators and tourist enterprises.

<sup>90</sup> The requirements are: basic training in two ECOCAMPING workshops and two individual consultations; designation of an environmental manager; information and co-operation with relevant stakeholders such as employees and guests; analysis of the organisation and its compliance; development of an environmental policy; establishment of an environmental program; documentation of resource use; publication of an annual environmental report; an annual visit to an ECOCAMPING workshop; and a three-yearly check of the campsite’s management system by an ECOCAMPING consultant.

<sup>91</sup> The Project was aimed specifically at all types of enterprises in the chemical, plastic, rubber and coke sectors and provided support for EMAS.

<sup>92</sup> The AMA project (*Acções de Melhoria Ambiental*, “actions of environmental improvement”) provides the means to promote EMS implementation in a sectoral (ornamental and industrial stones) and regional context where SME constitute almost all the existing enterprises. Based on a proposal made by the relevant business organisation, this project was conceived in the framework of PRIME Partnerships and Public Initiatives and has strong participation of the relevant business organisation ASSIMAGRA, several enterprises, two institutions from the Ministry of Economy (the General Directorate for Industry and the Institute for Mining and Geology) and a Technological Centre, thus providing the basis for a multi-stakeholder network.

<sup>93</sup> The European Association of Mining Industries (Euromines – [www.euromines.org](http://www.euromines.org)) is currently examining a number of options to facilitate and promote the adoption of EMSs among mining companies throughout Europe. This initiative was



taken in response to the Commission Communication on Sustainable development in the EU extractive industry (COM/2000/265) and the call by the Council upon industry and Member States to pursue voluntary approaches to achieve better environmental performance. A study commissioned by the Commission showed that EMS uptake among mining companies is lower than that in other industrial sectors. One of the reasons for this is that due to their specific nature mining companies find it more difficult to adopt existing formal EMSs such as ISO 14001. Therefore, consideration is given to developing alternatives, either by providing reference material to help mining companies adopt the standard, or by adapting existing standards in line with the sector's specific character.

<sup>94</sup> As part of the chemical industry's world-wide "Responsible Care" initiative some European associations promote the (integrated) "Responsible Care" management system which covers both environmental and health & safety issues.

<sup>95</sup> The Hackefors model has been extensively studied and these studies show the benefits to SMEs of the approach. See for example: Ammenberg, Börjesson and Hjelm (2000) and Hallinan and Jenks (2003).

<sup>96</sup> Costs are as follows:

Employees	Cost (SEK)
5	28,750
10	47,500
50	157,500

<sup>97</sup> The Hackefors Model is owned by Altea AB, Sweden and is sold as a service.

<sup>98</sup> Of these companies 16 employed fewer than ten people, seven employed between 11 and 50 people and three employed between 51 and 80 people.

<sup>99</sup> NUTEK, the Swedish National Board for Industrial and Technical Development, funded a study to evaluate the Hackefors Model (see Ammenberg et al, 2000)

<sup>100</sup> The project is supported by a range of stakeholders including national, regional and local government authorities and environmental agencies as well as the Chamber of Commerce, industrial associations and trade unions.

<sup>101</sup> Progress towards territorial registration to EMAS has so far been blocked on technical grounds. The Italian Competent Body for EMAS is insisting that all 324 enterprises develop formal management systems and that it will not exclude the micro businesses from the registration process. CONSER argues that this group has only minor and even ephemeral environmental impacts and that there is little to be gained from their inclusion. According to CONSER, the effort required to do this could be counterproductive. It hopes that a quick solution (that recognises both formal and less formal EMSs) can be found. So far, 3 individual SMEs have achieved EMAS registration, with another two planning to register in the near future.

<sup>102</sup> It should be noted that a number of - predominantly micro-businesses, such as coffee bars, have minimal involvement. The requirement to complete a substantial questionnaire (50 pages) can act as a disincentive to those smaller companies with minimal environmental impacts and therefore with little practical advantages to be gained from addressing environmental issues.

<sup>103</sup> The project has a multi-stakeholder project management committee including industry, government and NGOs.

<sup>104</sup> Three workshops addressed securing commitment and establishing the "baseline"; identifying compliance with legal, customer and market requirements; and developing environmental management programmes.

<sup>105</sup> Other "Performance" initiatives include: *Performance Bretagne Qualité Plus*, *Performance Bretagne Psa Peugeot Citroën Plus* and *Performance Bretagne Ressources Humaines Plus*. See for further information: [http://www.cordis.lu/bretagne/fr/services\\_enterprises.htm](http://www.cordis.lu/bretagne/fr/services_enterprises.htm)

<sup>106</sup> *Directions Régionales de l'Industrie de la Recherche et de l'Environnement* (see: [www.drivre.gouv.fr](http://www.drivre.gouv.fr))

<sup>107</sup> *Direction Régionale de l'Agriculture et de la Forêt*

<sup>108</sup> ADEME is a state-funded public organisation whose activity is supervised by the French Ministries in charge of research, the environment and energy. ADEME came into existence on 1 January 1992. The agency's mandates cover: conservation of energy and raw materials; promotion of renewable energy sources; promotion of clean and energy-efficient technologies; waste minimisation, disposal, recovery and processing for economic value; prevention and reduction of air pollution; mitigation of noise pollution; and prevention and remediation of soil pollution. For further information see: [www.ademe.fr](http://www.ademe.fr)

<sup>109</sup> See for more details: <http://www.ecogestion.be/>

<sup>110</sup> The importance of a strong decision-making process was underlined by the experiences made in a Finish project financed by the National Technology Agency, where a small industrial estate was deemed to be the entity to pilot a group EMS (i.e. a "horizontal network") for 12 companies. The project faced some difficulties in this respect, inter alia because the starting point of participating enterprises was different and these differences were not accommodated.

<sup>111</sup> This is also recognised in the literature. See for example research into the barriers to EMS implementation by SMEs (Hillary, 1999) and a discussion on what is an appropriate system for an SME (Walley, 2000).

<sup>112</sup> The research was funded by the DTI and investigated the barriers, opportunities and drivers facing SMEs when adopting EMS (Hillary, 1999)

<sup>113</sup> Final recruitment figures on numbers of SMEs were down on the target of 200 owing to over- allocation of resources into the technical development of the model in the first half of the project, which was at the expense of its commercially viable delivery in the second half.

<sup>114</sup> The company employs just 25 people. See for further details: [www.greenfieldway.co.uk](http://www.greenfieldway.co.uk)

<sup>115</sup> Multi-stakeholder representation is achieved by SMEs, mentors (large companies), DTI and DEFRA, BSI and the World Wide Fund for Nature (WWF) sitting on the Board of Directors and a Council of Members.

<sup>116</sup> There are links to the Environment Agency's NetRegs site, which provides sectoral legislative information to SMEs (see: <http://www.environment-agency.gov.uk/netregs>).

<sup>117</sup> Eco-business plan Vienna is the environmental programme for Viennese businesses. The first programme period was 1998-2001 and the current runs from 2002-2005. Up to 2003, 370 companies had taken part in the programme. In 2002, Eco-profit Vienna was added as a module. The Eco-business plan was developed and is supervised by a steering committee which includes: the Vienna Chamber of Commerce (WKW), the Viennese Business Promotion Institute (WIFI), the environmental protection unit and the industry and permitting unit of the Vienna city council, the Vienna Business Promotion Fund (WWFF), the Federal Ministry for Agriculture, Forestry, Environment and Water Management (BMLFUW), trade unions (ÖGB) as well as the employees association (AK). The steering committee is involved in programming and evaluation.

<sup>118</sup> The city of Vienna is providing €2.6 Million from 2002-2005.

<sup>119</sup> The time pressure stems from the fact that participants have a fixed time (ten months) to complete all workshops (eight workshops) and prepare their environmental measures. This time pressure arises from the yearly implementation cycle of Eco-profit.

<sup>120</sup> Criteria are developed by the Eco-lighthouse Office, vetted by an independent expert and submitted to the relevant trade association for review.

<sup>121</sup> Local authorities can give financial support to SME to conduct their environmental analysis. In the city of Kristiansand, the first participating company in a particular sector gets its environmental analysis for free; additional companies have 50 per cent of their cost covered. Financial support is an incentive to join the programme.

<sup>122</sup> Based on 50 companies, a further larger study is currently underway.

<sup>123</sup> A three-year test period was started in January 2000 with an annual funding of approximately € 270,000 year. An additional €200,000 was secured for 2003. No funding is yet available for 2004.

<sup>124</sup> Eco-lighthouse enterprises are to be surveyed on their willingness to pay a registration fee.

<sup>125</sup> The EFQM and Baldrige quality models clearly point towards increasing integration of management systems. This is confirmed by ISO's approach to ISO 9004:2000, in which customers become wider 'interested parties', and its continual improvement guidelines, which specify clear environmental initiatives for energy and resource conservation as well as pollution prevention and waste minimisation. Also, the issue of ISO 19011 in relation to integrated QMS and EMS auditing and the opportunity to have single certification opportunities is another clear example of one way ahead for businesses. Nevertheless, there may be doubts about the SME-friendly character of these approaches.

<sup>126</sup> See for further information: [www.projectsigma.com](http://www.projectsigma.com)

<sup>127</sup> For instance, the Swedish Standardisation Organisation, certification bodies, local authorities, SMEs and the Swedish Industry Association

<sup>128</sup> ENAP stands for "Exploring New Approaches in Regulating Industrial Installations". It is a two-year project led by the Netherlands's Ministry of the Environment (VROM) and the Information Centre for Environmental Licensing and Enforcement (InfoMil). Its aim is to explore new approaches to regulating industrial installations and to develop a European dialogue on new instruments (see: <http://sharepoint.infomil.nl/enap>). REMAS is the project title for a three-year long examination of environment management systems currently in place in business and industry across key EU Member States. It hopes to substantiate the assumption that companies and organisations that implement an EMS show better environmental performance overall.

<sup>129</sup> For example, the environmental prize of the Environment Ministry in Baden-Württemberg, which rewards industry for special efforts in the field of environmental protection.

<sup>130</sup> For instance, in the context of the *Prix Français "Enterprises et Environnement"*, a general environmental award in France.

<sup>131</sup> Hillary (1998). The results of this comprehensive study of EMAS registered sites were fed into the revision of the EMAS I Regulation.

<sup>132</sup> A number of studies (e.g. Hillary (1998 and 1999)) have highlighted the target groups that companies want to reach.

<sup>133</sup> See: Federal Environment Agency (2000), page 37. The survey was undertaken from 15 June 1998 to 30 April 1999. The return rate of the survey was nearly 70 per cent (1806 sites were registered at the end of 1998 and 1228 sites returned the questionnaire).

<sup>134</sup> Information based on a telephone interview with Mr. Bode, Gerling Industry services, on 13 May 2003. Gerling also runs its own EMS and Quality auditing company called Gerling Cert. This company is independent from Gerling Insurance, and Gerling Cert information may not be used by Gerling Insurance.

<sup>135</sup> This approach is being developed in Italy in the ECOIMPRESA project. For more details see [www.confindustria.it](http://www.confindustria.it).

<sup>136</sup> In Madrid, EMAS registration has been considered in some technical specifications as a percentage (10-20 per cent) of the total marks for winning the contract.

<sup>137</sup> Guidance on procurement for UK Government Departments is contained in the Green Guide for Buyers (2001). See: <http://www.sustainable-development.gov.uk/sdig/improving/partf/greenbuy/>.

<sup>138</sup> Ten Brink et al (2003).