



FINAL REPORT

Study on the Costs and Benefits of EMAS to Registered Organisations

Study Contract No. 07.0307/2008/517800/ETU/G.2

October, 2009

milieu
ENVIRONMENTAL LAW & POLICY

RPA

This Draft Final Report has been prepared by Milieu Ltd and Risk and Policy Analysis Ltd for DG Environment of the European Commission under Study Contract No. 07.0307/2008/517800/ETU/G.2. The primary authors were Dr Jan Vernon, Mr Mark Peacock, Ms Alice Belin, Dr Catherine Ganzleben and Mr Martin Candell.

Catherine Ganzleben was responsible for the overall editing of the report.

The views expressed herein are those of the consultants alone and do not necessarily represent the official views of the European Commission

Milieu Ltd., 15 rue Blanche, B-1050 Brussels, Belgium, tel: +32 2 506 1000; fax: +32 2 514 3603; g.goldenman@milieu.be; catherine.ganzleben@milieu.be; web address: www.milieu.be

Risk and Policy Analysis Ltd., Farthing Green House, 1 Beccles Road, Loddon, Norfolk NR14 6LT, UK, tel: +44 (0)1508 528465, fax: +44 (0)1508 520758; jan.vernon@rpaltd.co.uk; web address: <http://www.rpaltd.co.uk>

Executive Summary

This Final Report sets out the results of the Study on the Cost and Benefits of registration with the Environmental Management and Audit Scheme (EMAS) to Registered Organisations that is being undertaken by Milieu Ltd and RPA Ltd for DG Environment of the European Commission under Study Contract No. 07.0307/2008/517800/ETU/G.2. The study was initiated in December 2008 and completed by October 2009.

The aim of the study is to draw conclusions regarding the costs and benefits to organisations of EMAS registration, as well as the incentives and barriers confronted by potential new registrants. Observed variation in the costs and benefits of EMAS registration is to be related to internal organisational factors, such as best practice for international environmental management, and external factors, such as the support systems for EMAS registration set up by Member States. All conclusions should be substantiated by credible and robust evidence.

Based on these conclusions, the project consortium has generated recommendations for strategies designed to attract new organisations into the scheme, to minimise the barriers to registration and to provide targeted assistance to new organisations. In addition, we have identified best initiatives that help organisations to realise maximum benefits from the application of EMAS, both internal to the organisation and run by Member State competent authorities and/or accreditation bodies.

A final output of the study is a set of indicators that can be used to make assumptions about the possible costs and benefits that may arise for an organisation.

This Final Report summarises the results of the study. It includes:

- an introduction;
- a review of the relevant literature;
- methodologies;
- results;
- conclusions on the costs and benefits of EMAS
- conclusions on best practice in implementing EMAS and recommendation;
- a list of indicators; and
- list of references.

Supplementary materials are included in the annexes to the report.

Literature Review

The literature review aimed to identify and review the evidence for specific costs and benefits associated with EMAS, as well as for drivers and barriers. The conclusions of the literature review provide a basis for ongoing empirical research. Materials reviewed include publications of the European Commission, Member States, academia and think tanks.

Studies investigating drivers for EMAS registration found organisational size to play a role in the private sector, with larger organisations taking up EMAS more frequently than smaller organisations. Expectations of cost savings are identified as an important driver for the manufacturing sector. Evidence was found for the following drivers in the private sector: trade linkages with Member States where EMAS has a high profile; internal stakeholders; securing external legitimacy and achieving regulatory compliance. Evidence suggests that public sector organisations seek EMAS registration in order to secure legitimacy amongst stakeholders.

In terms of external barriers, numerous studies cite the costs associated with certification and

registration as a key barrier to EMAS registration, of particular relevance to SMEs. Additional external barriers for which evidence was found include a lack of consumer awareness, poor feedback, and a lack of recognition by public institutions. Internal barriers identified by the literature include a lack of human resources, specific skills and capacities, and low motivation.

Persuasive evidence was found for a number of benefits arising from EMAS registration, including reduced costs for raw materials and waste management, achieving regulatory compliance, regulatory relief, competitive advantage, and improved personnel motivation. Less evidence was found of concrete benefits from risk minimisation. Improved relations with external stakeholders seem to play a key role for public authorities implementing EMAS. There is less evidence to show that this is an important benefit for commercial organisations, in terms of their relations with regulators and the members of the public living in proximity to commercial activities.

While a number of studies discuss the sources of the various costs associated with EMAS registration, there is little concrete numerical data on costs available in the literature. This represents a key gap which this study has attempted to fill. Evidence in the literature suggests that the presence of internal environmental management skills reduces the costs of registration and implementation to an organisation.

Regarding the kinds of incentives available to promote EMAS uptake, Member States offer regulatory relief, green public procurement, funding support, technical support and information support. In particular, evidence has been found of the power of regulatory relief as successful incentive promoting EMAS registration.

The conclusions of the literature review provide a sounding board against which the results of our empirical evidence are assessed.

Methodologies

The methodology employed by the project consortium aimed to access and explore the internal management systems of organisations, as well as reviewing factors in the external environment that affect EMAS registered organisations. The approach to information gathering was therefore two-tiered, involving an online questionnaire survey targeted at EMAS registered organisations, followed by in-depth interviews with a target group of 30 organisations selected on the basis of criteria tailored to the research questions. In addition, the project consortium conducted interviews with Member State EMAS Competent Bodies.

Online questionnaire survey

Stage one of the methodology involved an online questionnaire survey. Following approval of the questionnaire by the Commission, it was posted online. All EMAS registered organisations, plus sites that had recently withdrawn from EMAS, were sent an email inviting them to complete the questionnaire. This was followed by a reminder to organisations that had not responded.

The software used to manage the online questionnaire automatically generated quantitative data as responses were received. This data was downloaded into a series of spreadsheets providing an analysis of the answers to each question in terms of company size, turnover and sector. Information from these spreadsheets was used to prepare the results for this report.

Interviews with organisations:

As a first step in our methodology we identified a list of 40 organisations for interview that fulfilled a number of criteria, including:

- from Member States that provide the bulk of EMAS registration, namely Germany, Austria, Italy, and Spain;
- from Member States where EMAS registration is low, namely UK, Netherlands, France; and
- from new Member States, namely Poland and the Czech Republic;
- from a Nordic Member States, namely Denmark;
- that were previously EMAS registered but have subsequently de-registered;
- that represent a range of sectors, including industrial and service, public and privates;
- that present a range of categories, including micro, small, medium and large;
- that demonstrated particular features of interest (e.g. success, particularly high or low costs or innovative implementation processes); and
- that had won the European EMAS Award.

Organisations were first contacted by email and then by telephone. In practice, we were able to conduct 22 interviews, after contacting all organisations from the first list several times as well as those from the reserve list. Many organisations were not interested or did not respond to our request. Semi-structure questionnaires, adapted to the organisations interviewed, were used to guide the interviewers. Interviews were conducted in English, French, German, Hungarian Greek, Czech, Swedish, Italian and Spanish and yielded primarily qualitative data. In cases where areas of confusion arose, a short summary of the interview was sent back to the interviewee for validation.

Once each interview summary had been completed, a systematic analysis of each response was conducted to identify evidence to support the conclusions of the questionnaire survey, as well as to provide examples of the circumstances and situations where organisation's experiences differed from the general results of the survey. Reasons for any disparity were then sought and presented, alongside examples of general evidence gathered, in summary boxes within this report.

The reports of interviews with organisations were used to supplement the information obtained from questionnaires, particularly on the factors affecting the scale of costs and benefits associated with EMAS and to provide further detailed breakdown of specific cost and benefit areas.

Interviews with competent bodies:

A list of the individuals responsible for EMAS in all 27 Member States was drawn from the European Commission EMAS webpage. These individuals were contacted first by email and then by telephone. Two member States (Slovenia and Sweden) did not respond to our request after several attempt to contact them.

A semi-structured questionnaire was used for interviews with the competent bodies. It was sent prior to the interview to the responsible individual, translated into his/her own language if possible. The extensive notes taken during the interview were used to produce a summary report and, when clarifications were needed, we followed up with emails to request additional information.

Prior to analysing data from the interviews, we looked at practices in each Member State and cross checked these with information from organisations, so as to determine the influence of country-specific factors. Then data was analysed with a view to developing a number of topic specific matrices to allow for a systematic visual comparison of the data emerging from each Member State.

Topics for which matrices were developed include:

- Assistance and promotional activities
- Incentives to register
- Barriers to registration

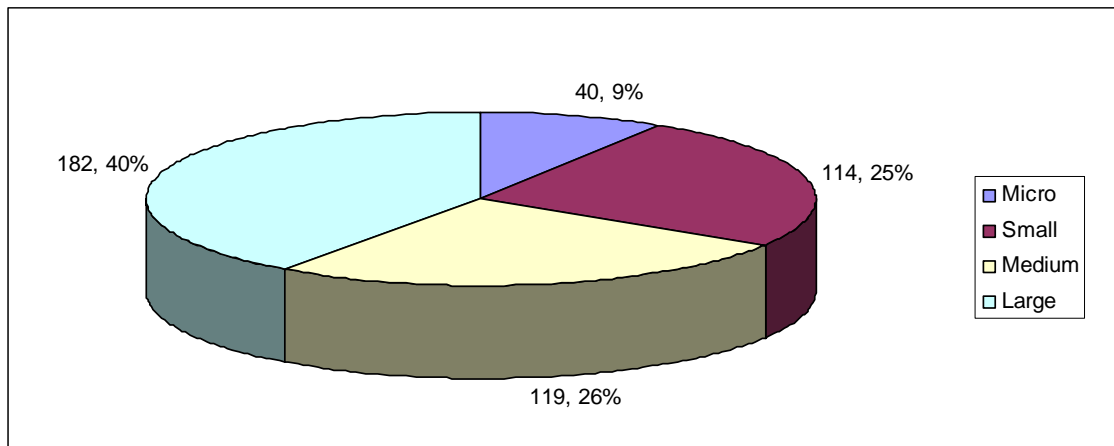
Results

Results from survey and interviews with organisations

By the end of the consultation exercise, 1058 of the invited organisations had accessed the online questionnaire; 769 of these organisations completed at least some of the questions, whilst around 426 provided (more or less) complete responses. In addition, email responses were received from 21 organisations. As some of the organisations have more than one EMAS registered site, this represents a total of 457 EMAS registered sites, or 11% of the total number of EMAS registered sites. This is a good response rate, based on previous experience, given the nature of the information requested and the breadth of organisations consulted.

The breakdown of responses by organisations size was 60% micro, small and medium organisations and 40% large organisations, as shown in Figure 1. Responses were received from EMAS registered organisations in most EU Member States, with the exceptions being Estonia, Malta, Slovakia and Slovenia. As expected, the highest numbers of responses were from Member States with the largest numbers of registered organisations – Spain (23% of response), Italy (27%) and Germany (16%). Respondents included both public (24%) and private organisations (76%). The private organisations represented a range of different sectors, with the highest percentage of responses from the chemicals (DG24) and other services (O90-93) sectors. We received responses from 25 organisations that were no longer registered.

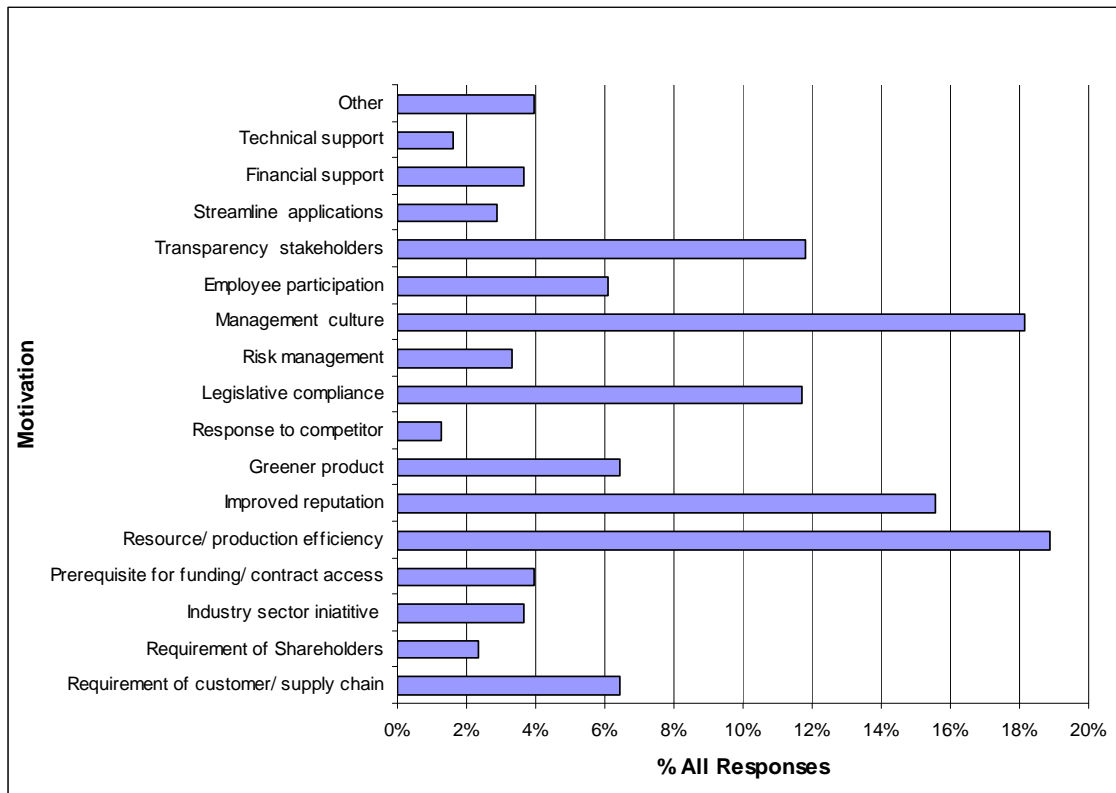
Figure 1: Breakdown of Survey Responses by Organisation Size



Motivation for Seeking EMAS Registration

Organisations were asked what their three most important reasons for seeking EMAS registration were. The reasons most frequently selected are highlighted in Figure 2 below. They include the wish to improve resource and production efficiency (19%), internal management approach/culture (18%) and improved reputation (15%) as the most popular reasons identified. The desire to improve transparency with stakeholders and legislative compliance were also significant for some organisations.

Figure 2: Reasons for Seeking EMAS Registration (Percentage of all preferences)



The results did not vary significantly by Member States but there were variations by organisation types. Manufacturing organisations tended to allocate the greatest importance to improving resources and production efficiency, whilst organisations closer to the consumer were more likely to indicate stakeholder transparency or supply-chain pressures as a key motivation. Public sector organisations appeared to be significantly more motivated by improved employee participation, stakeholder transparency and the desire to provide greener products or services than those in the private sector. For the private sector, industry sector initiatives, improve reputation and supply chain/customer requirements were highlighted as more significant motivators of EMAS adoption than in the public sector, as highlighted in Figures 3 and 4 below.

Figure 3: Public Sector Reasons for Adopting EMAS

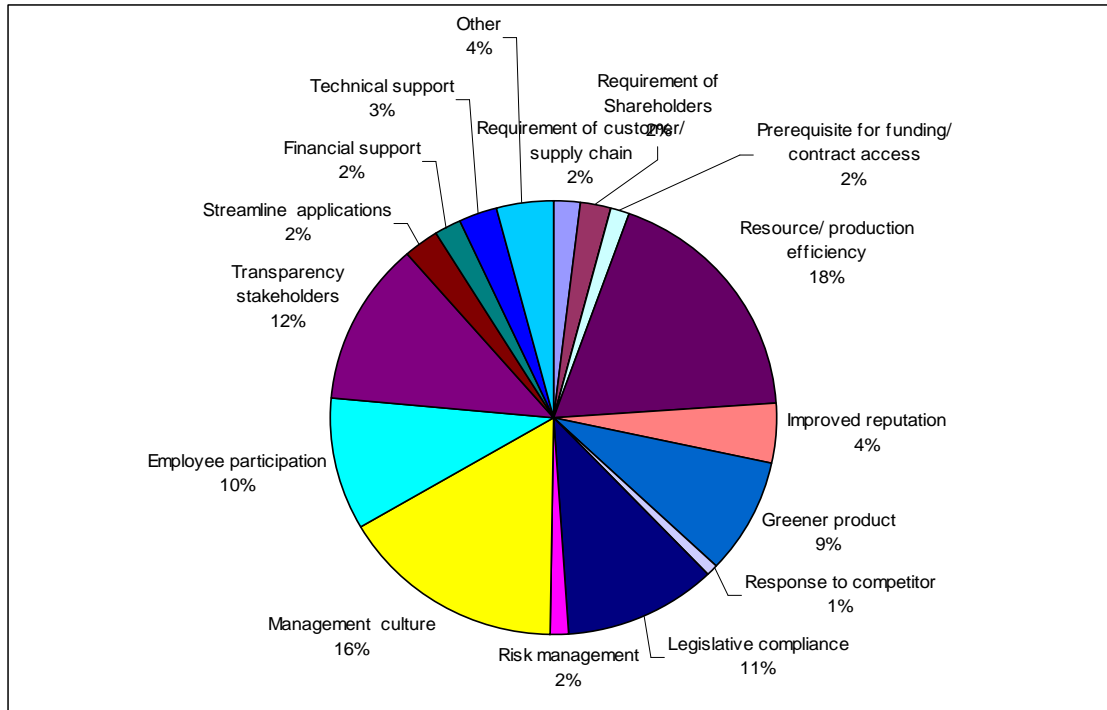
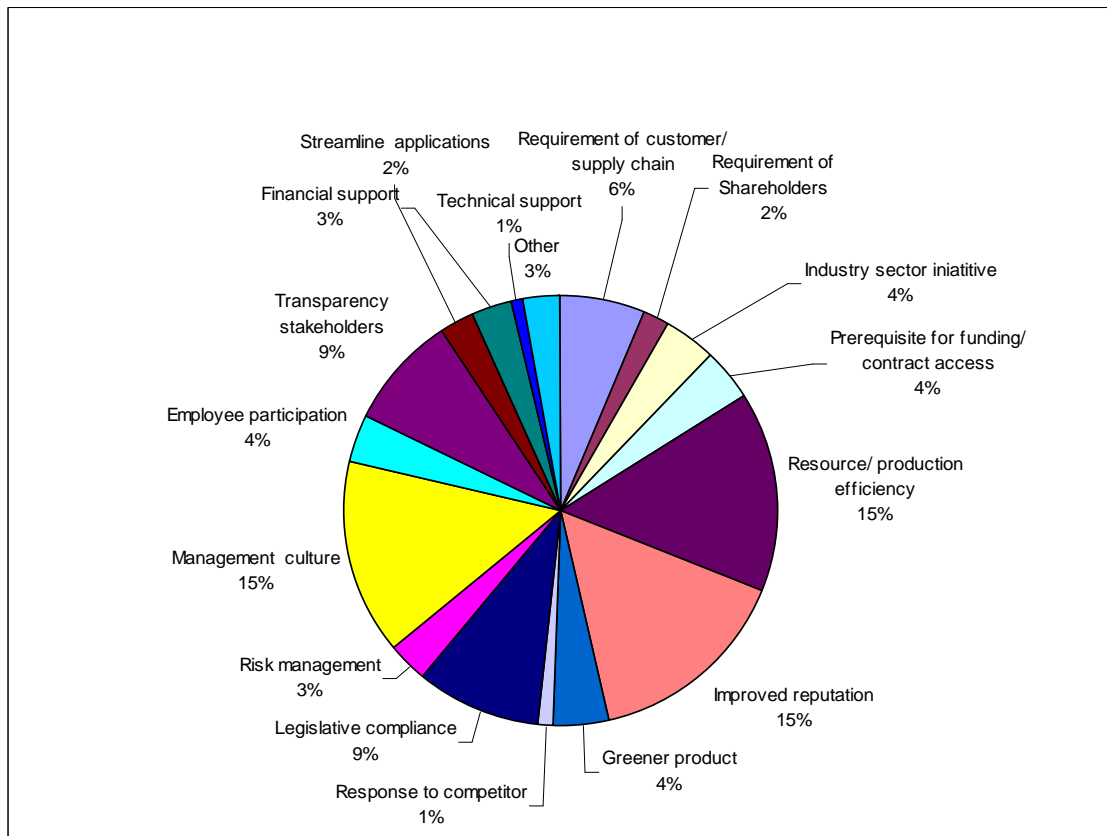


Figure 4: Private Sector Reasons for Adopting EMAS



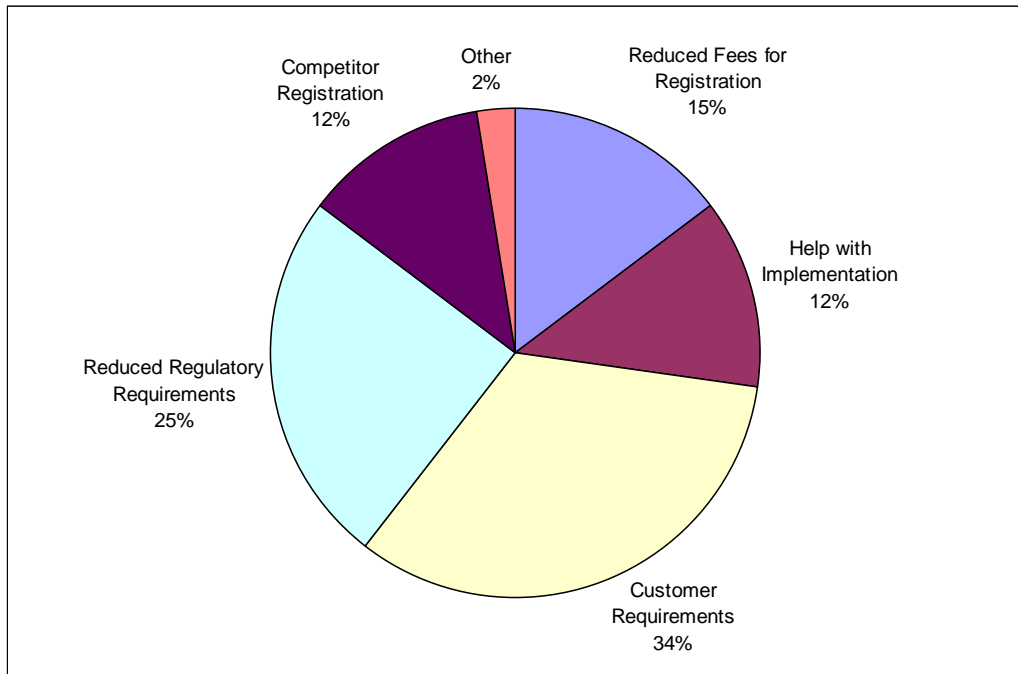
Around half (53%) of the organisations responding to the questionnaire had an environmental management system in place prior to EMAS. The overwhelming majority (86%) of respondents were certified to ISO 14001 as well as EMAS. When asked to give their reasons for also seeking EMAS registration, responses included:

- to increase transparency with stakeholders;
- EMAS has more obligations and [requires greater] environmental responsibility;
- requirement of client;
- EMAS more adapted to needs than ISO 14001 (considered inflexible); and
- EMAS was adopted first, ISO 14001 later for the world market.

Reasons for Withdrawal from EMAS and Factors that would Encourage Re-registration

The 25 respondents who had withdrawn from EMAS (the vast majority of which were large organisations from the private sector) were asked to score from a menu on a scale of 1 (great importance) to 5 (no importance) their reasons for withdrawal. The reason with the highest score amongst respondents was that the benefits of EMAS were unclear or insufficient to justify registration (26% identified this as of great or significant importance). Respondents that had withdrawn from EMAS were also asked what factors would encourage them to re-register; again, they were asked to score potential factors from a menu (with 1 being strong encouragement, 5 no encouragement). Respondents indicated that customer requirements would give strong or significant encouragement (34% of all preferences), as shown in Figure 5.

Figure 5: Most Important Reasons for Re-registering with EMAS

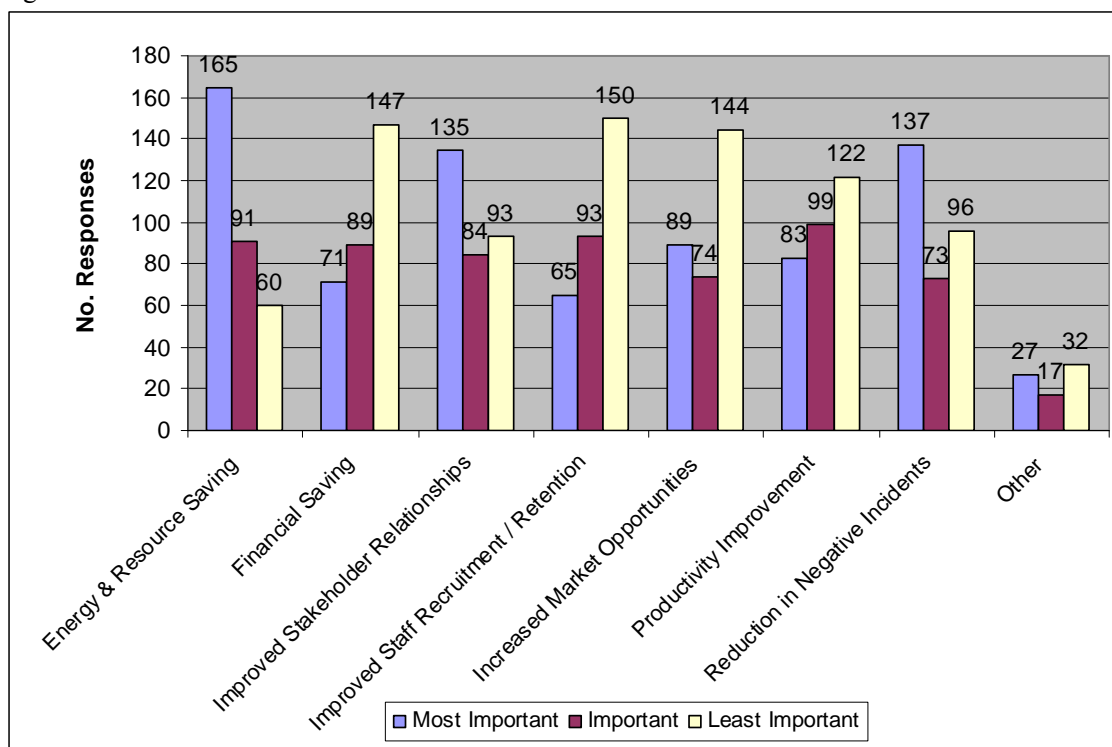


Benefits of EMAS Registration

Organisations were asked to indicate which of a list of impacts of EMAS had been the most positive for them. The most positive impact, identified by 29% of respondents as having a score of 1 and 18% as 2, was energy/resource saving. There were only limited differences in the scores awarded to different impacts by organisation size and type. However, private sector organisations ranked increased market opportunities much higher than public organisations (14% to 3% of corresponding

responses). All other responses were very similar, varying by only 1-2% between organisation groups.

Figure 6: Benefits of EMAS Identified in Order of Preference



The stakeholders most influenced by EMAS appeared to be public authorities (83% of respondents indicating that relationships had improved) and staff (82% of respondents indicating some improvement). Thirty-nine percent also indicated that there had been no change in relationships with local stakeholders. These results are similar across all organisations, regardless of the organisation’s characteristics.

In answer to the question as to whether EMAS had reduced the number of ‘negative’ incidents, around half of the respondents indicated that there had been no change, with 60% or more indicating no change in the frequency of internal and external inspection. However, both the frequency of environmental breaches and time spent on monitoring legislative compliance had reduced for more than 50% of respondents (52% in both cases).

The most frequently cited financial benefits were linked to reductions in energy use and more efficient resource use. Although 93% of responses to the question asking whether EMAS registration assisted them to qualify for new opportunities in the public sector or compete more successfully for new contracts indicated that they had won additional contracts or gained greater access to public procurement opportunities, this may be a false result as organisations that had not won additional contracts may not have answered “No” to the question, whereas organisations that were aware that EMAS had assisted them in winning contracts were more inclined to answer “Yes”.

Finally, a number of respondents connected with the automotive manufacturing sector in Europe stated that many customers required an EMS to be implemented and that having an overall integrated management system within their organisation was a key benefit.

Costs

Organisations were asked to indicate the number of person-days (of either their own staff or outside contractors) required to first implement EMAS. The range of responses was quite varied. External consultancy was used by most respondents to implement EMAS (59%). There may be a trade-off between the complexity of the EMAS system (higher in larger organisations) and the expertise available (also likely to be higher in larger organisations). The most time-consuming tasks for internal staff are the environmental review, EMS development and internal audit. A summary of the person days required to maintain and implement EMAS by each task is provided in Figures 7 and 8.

Figure 7: Person Days to Maintain EMAS by Task

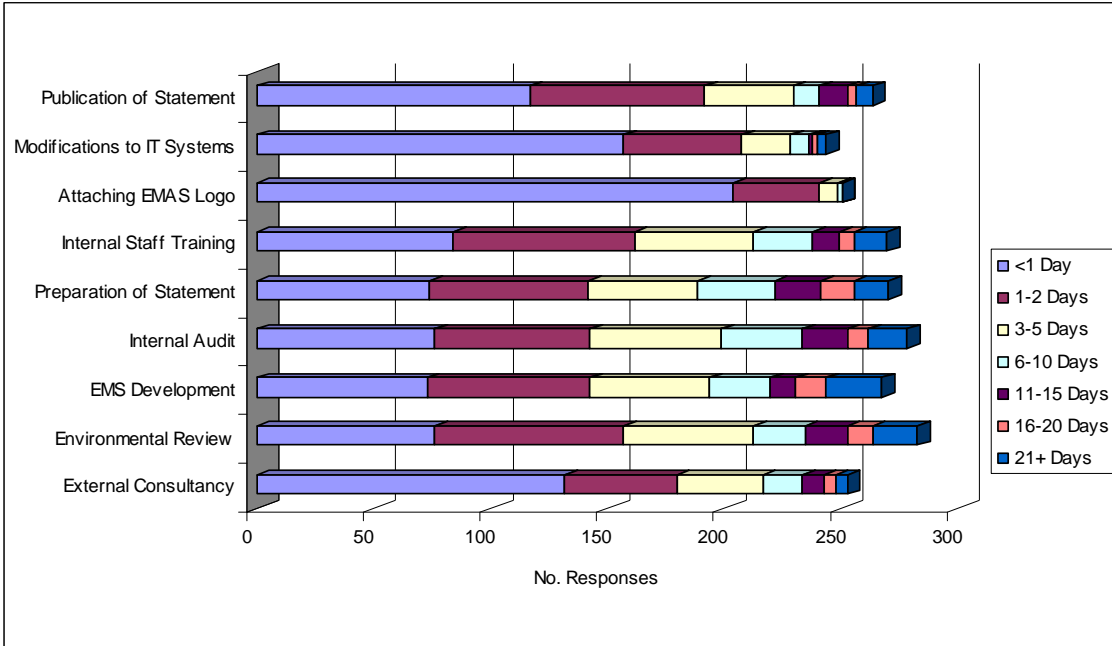
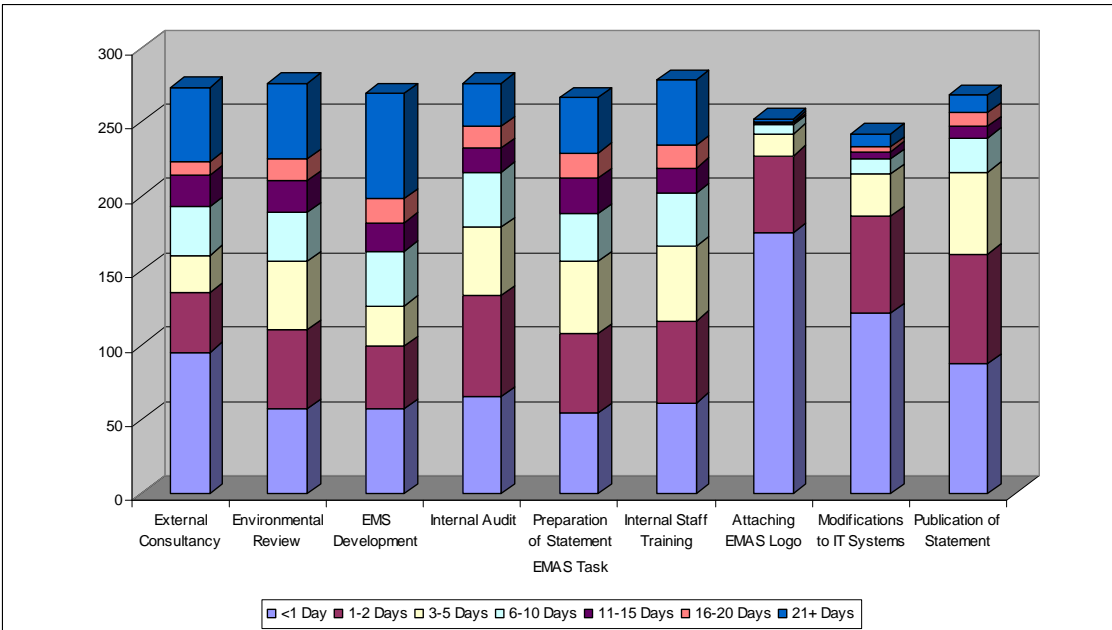


Figure 8: Person Days to Implement EMAS by Task



The number of days required to maintain EMAS is lower than the number required for implementation. As with implementation, the environmental review, EMS development and internal audit were the most time-consuming tasks.

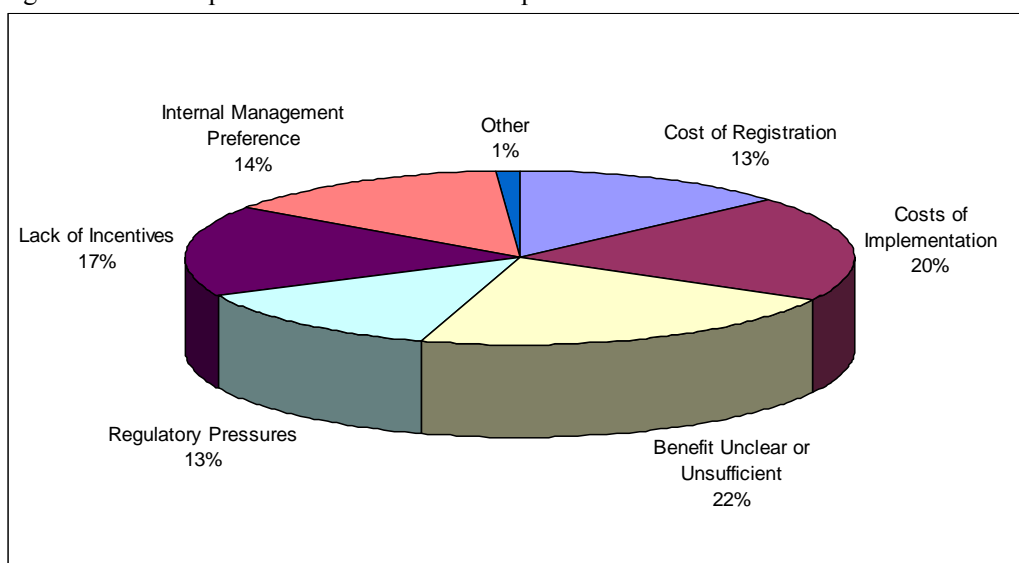
Incentives

The most commonly-available incentives were guidance documents, reduced regulatory enforcement (regulatory relief) and promotion of EMAS registered organisations. The incentives most commonly taken up were financial support, guidance documents and reduced regulatory enforcement. The incentives identified as most important by respondents were promotion of EMAS registered organisations (19%), reduced regulatory enforcement (19%) and financial support to register (19%).

Barriers

Barriers identified as important by the highest numbers of respondents included that the benefits were unclear or unjustified (23%) and the costs of implementation (20%). The next most highly-scored barrier was the lack of Member State financial incentives (17%). The most important barriers according to respondents are summarised in Figure 9 below.

Figure 9: Most Important Barriers to EMAS Uptake



Results from interviews with Member State Competent Bodies

Assistance and Promotional activities

Most individuals working on EMAS (usually one or two individuals per competent authority) also have other functions. They provide technical assistance via email, phone calls and newsletters. Basic enquiries are answered on the competent bodies' websites, the vast majority of which have a page dedicated to environmental management systems.

Assistance specifically targeting SMEs is provided in several Member States, as are programs set up specifically to help organisations get started with EMAS. Such programs include the European EMAS-Easy project implemented in several Member States, the French "123Environnement" program

or the Portuguese “PMEmas” program.

Among promotional and educational activities at the national level, conferences and seminars on EMS are the most common tools to promote EMAS. Promotion of EMAS is usually targeted towards organisations, but in some Member States it is also targeted at the general public (via schools and universities for instance). In contrast, several countries found public outreach unnecessary, since the EMAS logo cannot be used on products and therefore suffers from a low recognition and limited public interest.

Some competent bodies from newer Member States found it difficult to identify concrete examples of the benefits from promotional assistance to organisations because of the early stage of development of EMAS registrations. Benefits from promotional activities were expected to accrue over the long term, along with an increased interest amongst organisations in EMS in general and EMAS in particular. Competent bodies were not always able to report accurately on the costs of technical assistance and of promotion. However, from the information available it is evident that the amount spent on EMAS promotion and assistance varies significantly between Member States, from tens of thousands of Euros to nothing.

Incentives

The most common financial incentive is not charging registration fees but other benefits, such as subsidies and funding programs, are also offered to encourage companies to register. Sixteen Member States offer financial benefits to organisations that are registered with EMAS.

The majority of Member States favour organisations with an EMS in their public procurement decisions, by awarding additional points to registered organisations in the process of assessing tenders against specific criteria. Several Member States stressed that it cannot be a requirement for a supplier to have EMAS, but rather it can be a plus.

The most common form of regulatory relief offered to organisations is found under the IPPC Regulation. EMAS-registered companies (along with companies that have implemented any type of EMS) are usually subjected to fewer environmental inspections than other companies. In five Member States, no regulatory relief is offered yet, but it is under discussion. Finally, in five Member States, EMAS-registered organisations are not offered any kind of regulatory relief and none is planned.

Barriers

Competent bodies were asked what they believed to be the most challenging requirements of EMAS for organisations. The greatest barrier, according to all interviewed competent bodies, is the cost of EMAS, both the internal costs of allocating personnel and the external costs of verifiers and auditors. This agrees with the results from the organisations as reported in the section above.

Another widely accepted criticism is that the system is seen as too complex and demanding, which is a deterrent to most organisations. The environmental statement is also perceived as a significant burden by Member State authorities, with some doubting its value due to a lack of public interest. Achieving legal compliance was identified as challenging, in particular by newer Member States, where organisations are in some cases still progressing towards compliance with EU legislation. Also, several Member States said it was difficult to persuade organisations of the value of EMAS, given the general lack of awareness and demand amongst customers and the public and the unclear benefits.

All competent bodies agree that the barriers are especially significant for SMEs. However, several competent bodies noted that, in their country, the costs of registration are tailored to the size of the organisation, with the specific aim of reducing the burden. Member States were also asked which sectors have more difficulties implementing EMAS and several reported that the implementation of EMAS is easier for the industrial and pharmaceutical sectors than for the service and trade sectors.

However, it was also noted that these sectors already have to follow a lot of stringent environmental rules and they will only do more on the environmental front if it will secure added value, in the form of clear benefits.

The point was made by many Member States that, in general, organisations see little incentive to go beyond the requirements of ISO14001, since in most cases there appears to be no clear advantage of being EMAS-registered rather than ISO14001-registered.

Benefits

Member States specifically identified benefits to organisations from EMAS registration, in terms of increase efficiency and reduced costs. Competent Bodies from several of the new Member States, where the number of registered organisations remain low or at zero, found it difficult to identify direct benefits at this early stage due to limited experience.

Analysis of the costs and benefits of EMAS to registered organisations

Analytical Approach

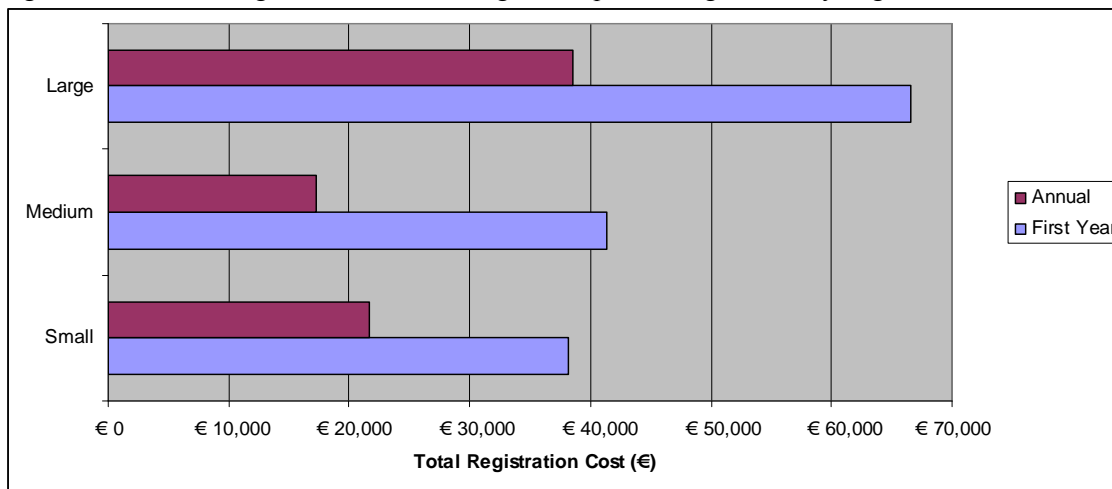
Based on the responses to the questionnaire, we were able to calculate average costs for EMAS across the entire sample of responding organisations. Organisations were asked to provide four different types of data including the person-days required by each organisation to first implement EMAS and then maintain it, the fees and costs charged to organisations to register, validate and verify registration, typical daily costs of staff by grade and other costs or information not identified above. Cost categories were created reflecting different characteristics, such as the size of the organisation (micro, small, medium and large) or the region of Europe in which the organisation is EMAS registered (Southern, Northern, and New Member States of Europe) and between public and private organisations.

Organisations were also asked to evaluate the benefits of EMAS, but these were generally reported in terms of qualitative data and not quantitative ones. Therefore the potential for a numerical comparison of costs and benefits proved to be limited.

Costs and Benefits to Individual Organisations

Based on the completed questionnaires, the estimated average costs of a typical EMAS organisation amount to around €48,000 for the first year and €26,000 annually for subsequent years. Thus costs in subsequent years are around half of those in the first year, on average. The average total costs estimated for organisations of different sizes are presented in Figure 10.

Figure 10: Total Average Cost of Maintaining and Implementing EMAS by Organisation Size



Micro organisations

For micro organisations, the results of the cost-benefit analysis suggest that energy savings alone could be sufficient to offset the costs of EMAS after the first year, if they are repeated annually. However, energy savings alone would not offset the first year costs of EMAS for a considerable time. Several micro enterprises highlighted that a key benefit of EMAS was gaining access to public contracts. However, interviewees noted that financial benefits from new contracts are not applicable to many public organisations, such as churches and local authorities. Instead, these organisations are motivated by their responsibility to protect the environment and set an example for others within the community.

Small organisations

Fixed annual costs are similar for all organisations, suggesting that, proportional to organisation size, the cost burden may be greater than expected for small organisations. Although EMAS may have a net benefit for small organisations, the initial costs of implementation and lack of knowledge of the potential benefits from energy and resource savings may make organisations reluctant to adopt EMAS. Similarly to micro organisations, small organisations may experience reduced savings over time, as a 5% or 10% efficiency gain is unlikely to be repeatable year on year. Benefits from better relations with local stakeholders or with public authorities follow a similar pattern, as they are at their highest the first year, with limited potential for further improvement in subsequent years.

Medium organisations

Data suggest that internal costs constitute the greatest burden on medium-sized organisations when implementing EMAS. However, fixed and external costs in subsequent years were estimated to be much lower for medium organisations than for small organisations, suggesting the potential for economies of scale. This analysis suggests that the financial benefits of EMAS increase in magnitude with the size of organisation. It also appears that, even where the financial benefits may be unclear or more limited, other non-quantifiable benefits, such as better relations with stakeholder groups and market factors, are sufficient to justify adoption of EMAS.

Large organisations

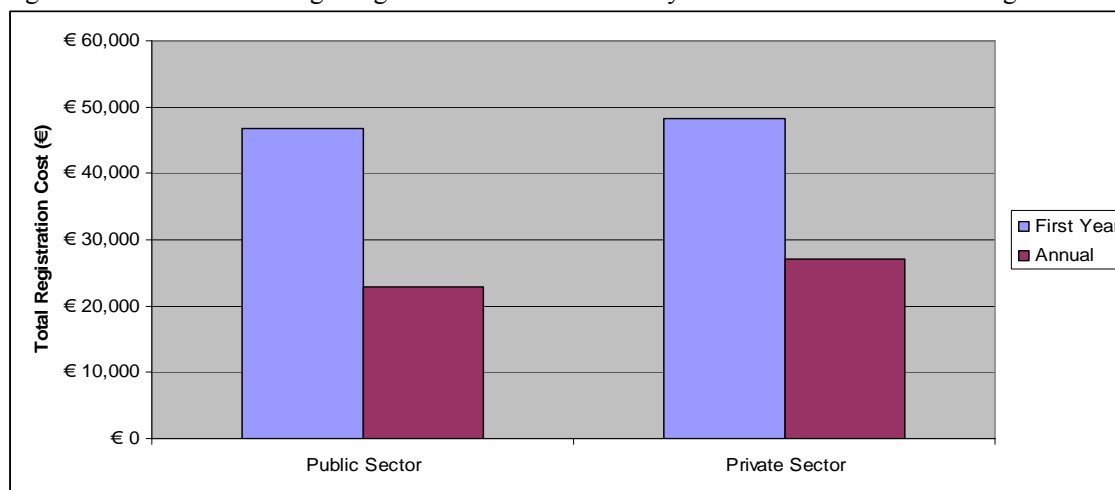
The costs for large organisations are much higher than the total sample average, owing to the larger number of sites, activities and staff involved in EMAS related activities. 30% of respondents identified reduced energy use as the main source of financial saving from EMAS, with more efficient use of

resources (29%) and legal cost savings (12%) also significant. This suggests that the costs of implementing EMAS should be easily recovered by larger organisations. However, other responses indicated that lack of awareness of EMAS amongst customers and stakeholders meant that EMAS had few additional benefits compared to ISO 14001, which has lower costs.

Private versus public sector

Analysis of the data from the completed questionnaire indicated that, during both first and subsequent years, the costs of EMAS registration are slightly higher for private organisations than public organisations. It also indicated that public organisations appear to incur significantly higher external consultancy costs than private organisations in the first year, but that public organisations were more likely to receive financial support from European initiatives and national governments. The differences in total costs are illustrated in Figure 11.

Figure 11: Estimated Average Registration Costs Incurred by Public and Private Sector Organisations



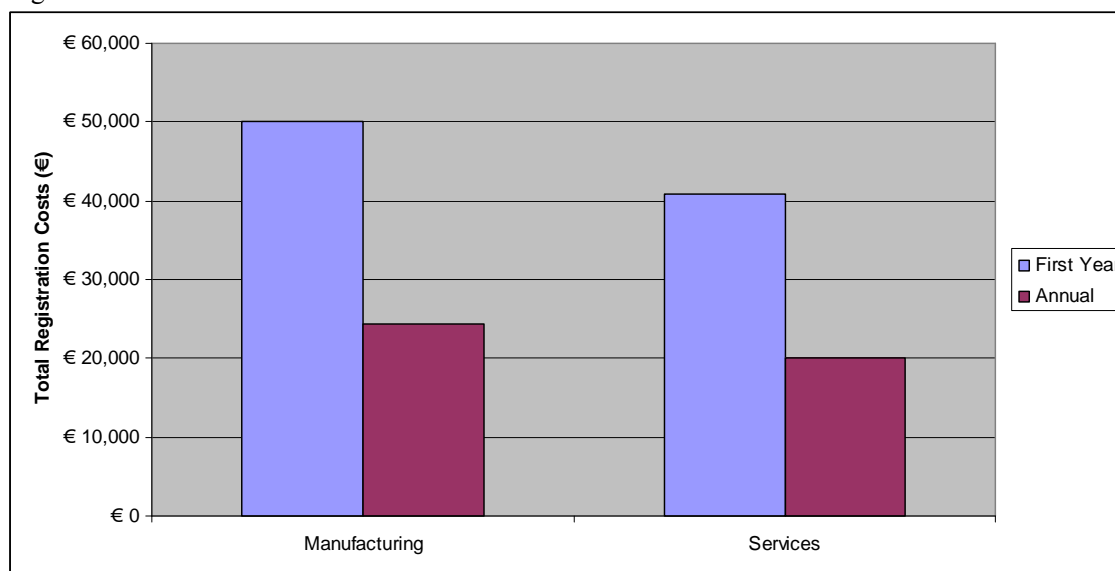
Geographical Differences

Member States were grouped into three categories (Northern Europe, Southern/Mediterranean Europe and new Member States) to gather a large enough sample to make the results meaningful. The results indicate that, on average, EMAS registration costs are higher than in the Northern European countries than those in any other region and that for new Member States, the first year costs of adopting EMAS are estimated to be the lowest in the sample. Our analysis indicates that there is a strong correlation between the estimated costs of EMAS and the comparative costs of living in each region, suggesting that our results are largely driven by price differences between Member States.

Manufacturing and Service Organisations

Organisations in the service sector appear to incur lower costs than those in the manufacturing sector (See Figure 12 below). However, external consultancy costs are slightly higher. This could be because systems and staff in the manufacturing sector may be better prepared for EMAS, due to experience with other management systems, or because of the need to comply with regulations such as IPPC. In terms of the benefits, the survey response and interviews indicate that reduction of negative incidents and energy savings are far more important to the manufacturing sector; whereas public organisations place greater emphasis on setting an example to others and service sector organisations on achieving recognition from customers and the general public.

Figure 12: Estimated Average Registration Costs Incurred by Manufacturing and Service Organisations



Costs and Benefits Linked to Combinations of Characteristics

Based on the completed questionnaire and the interviews, it was possible to analyse the impact on costs of a combination of organisation characteristics such as organisation size and region, organisation size and ownership and finally organisation size and sector. These results indicated that SME public organisations in Southern Member States are likely to experience some of the lowest costs of EMAS implementation, whereas larger organisations in Northern European Member States face the highest costs.

Conclusions on the costs and benefits of EMAS

Drivers to register

Seven drivers were identified as important by organisations when asked about their motivation for seeking EMAS registration.

Improving resources and production efficiency was identified as the key driver by the highest number of responding organisations in the online survey (19%), with the majority of those being large manufacturing organisations. Internal management approach and culture was highlighted by both the online survey responses and the subsequent interviews as an important issue in driving the uptake of EMAS. The desire to improve their legislative compliance was identified by 12% of organisations as an important driver. At the same time, several competent bodies from new Member States identified the demand for legislative compliance under EMAS as a barrier to registration in their country where organisations are overwhelmed with environmental obligations.

The goal of increased transparency with local stakeholders was identified as a driver by 12% of organisations in the survey, with the interviews yielding additional evidence of transparency as a driver. Our results also suggest that supply chain and customer requirements appear to be significant drivers and to be more specific that the importance of client demand as a driver for EMAS varies according to the sector (proximity to and interest of the customer) and by Member State. The interviews even revealed that in certain sectors, suppliers are required to have EMAS certification in order to gain market access. However, we noted that organisations serving principally the non-EU

market tend to favour ISO 14001 since it is internationally recognised.

General improvement in an organisation's reputation was identified as a key driver by 16% of organisation in the online survey. In particular, public sector organisations identified the desire to improve their image and present a positive example to other organisations as a key driver, which supports the conclusions of the literature review. Finally, during subsequent discussions with manufacturing organisations several noted that they had registered with the expectation that regulators would provide regulatory relief for example through reduced site inspections. However, we did not find much evidence of this expectation being delivered upon.

Barriers to registration

Our research clearly reveals that both organisations (23% of questionnaire respondents) and competent bodies see a lack of clarity surrounding concrete benefits emerging from EMAS to be the key barrier to registration. They also both identified a lack of awareness amongst both the public and amongst clients, as well as the necessity to achieve legislative compliance in a context where organisations are facing many new requirements, as important barriers.

Organisations alone identified the costs of implementation (20% of respondents) and the lack of financial incentives and of regulatory relief as key barriers to registration.

The benefits of EMAS

Increased efficiency and energy savings were identified as main benefit for registered organisations. In terms of quantified benefits, the results show clear evidence of substantial financial savings following EMAS adoption from increased energy and resource efficiency. However, this comes with the caveat that additional efficiency improvements are unlikely to be achievable year on year, meaning that the cost saving may tail off over the long term once all possible measures have been implemented.

The second most widely acknowledged benefit of EMAS was a reduction in negative incidents. Regarding market access, it appears that EMAS registration may be more important for retaining existing customers than for winning new business. Survey respondents also indicated that EMAS has improved relationships with regulators more than with any other stakeholder group. Finally, while many organisations also had expectations of regulatory relief from EMAS registration, the evidence of organisations actually benefiting from regulatory relief was limited.

Incentives

The results of this study and the views of stakeholders consulted suggest that, although guidance documents and technical support are helpful for organisations wishing to register with EMAS, they do not make a decisive difference to an organisation's decision to register. Instead, the evidence indicates that financial support provides the greatest stimulus for organisations to register.

Conclusions on best practice with EMAS

Best practice in organisations

Adoption of EMAS appears to be simpler for organisations that have integrated system to manage health and safety, quality and environmental issues. In addition, EMAS yields greater benefits where an organisation seeks to demonstrate leadership, for example in competitive sectors, through public procurement, or to improve stakeholder perceptions,.

We identified a number of factors that serve to minimise the costs and maximise the benefits of EMAS, including:

- streamlining requirements under IPPC by using EMAS documents for reporting and auditing;
- registering as part of a convoy/cluster (especially for smaller organisations);
- integrating EMAS into the general management system; and
- using EMAS to systematically review resource and energy use

Best practice in competent bodies

Our research suggests that the variation in the numbers of EMAS registered sites across the Member States arises more from cultural preferences for different EMS and client demands rather than the incentives offered by the competent bodies.

Nevertheless, some specific initiatives have been identified by competent bodies and flagged by organisations as helpful.

Regarding promotional activities, our results indicated the need to highlight concrete benefits and to highlight the benefits of EMAS that go beyond those achievable under ISO 14001. Examples of best practice include EMAS award ceremonies, roads shows, conferences and events, publications, presence at trade fairs and targeting schools. Offering financial assistance seems particularly relevant to SMEs, who face high costs in the first year of EMAS registration. Member States offer a range of incentives, such as no or reduced fees, subsidies for verifiers and consultant fees and fiscal advantages.

Types of technical assistance offered by Member States included guidance documents, dedicated websites, training of consultants and verifiers, help desks and targeted projects. However, our research suggested that technical assistance was less valuable as an incentive for organisations to register, although this conclusion may be less relevant for the new Member States.

Regarding public procurement, although many Member States now include EMS as a criterion in their assessments of tenders, we did not find much evidence of this providing benefits to organisations on the ground. This suggests that it would be pertinent to undertake some awareness raising activities amongst public bodies to further promote EMAS. Best practice in promoting green procurement included green purchasing websites for public authorities; targets for sustainable procurement amongst public bodies and EMAS as an entry criterion for tender application.

With regards to delivering regulatory relief, most Member States offer some advantages under the IPPC Directive. However, our research with organisations did not provide much evidence of benefits being realised on the ground. This suggests that delivering regulatory relief is an area that requires some additional stimulation from EU level. Practices adopted by Member States include simplified reporting obligations; reduced inspections and extended permit review periods under IPPC and reduced charges and fees under risk assessment legislation.

Recommendations for options and actions

We identify a number of recommendations for possible options and actions that could be undertaken wither nationally, bilaterally or at EU level to promote EMAS.

Regarding raising public awareness, we suggest the following:

- National EMAS award ceremonies
- Generating demand for EMAS amongst environmental NGOs
- Using the media to promote EMAS
- Publishing environmental statements

With the aim of increasing awareness amongst organisations, we make the following recommendations:

- Promotion at trade fairs and exhibitions
- Raising awareness amongst public bodies through targeted seminars and

In order to facilitate registration, we suggest promoting the convoy/cluster approach to registration through the provisions of EU guidance and seminars to share best practice between competent bodies.

Regarding technical assistance, we recommend the provision of support to SMEs in writing the environmental statements through subsidies for consultants.

With the aim of generating financial incentives to register with EMAS, we recommend that a dialogue be opened with the insurance industry. The aim would be to investigate current best practice in the industry with regards to reducing premiums on the basis of EMAS certification. The long term goal would be to promote EMAS as a guarantee of good environmental practice.

We generated a number of recommendations relating to maximising the energy and resource efficiency benefits from EMAS registration, including:

- Promoting increased energy and resource efficiency as a key benefit
- Generating guidance on how to achieve efficiency savings
- Providing subsidies for investments in energy saving under EMAS

Regarding national capacities to implement EMAS, we recommend establishing a twinning programme through which to train up verifiers and consultants in the new Member States.

On public procurement, we developed recommendations on:

- Targeted campaigns to raise awareness amongst public bodies
- Including a list of public tenders with EMAS as a criterion on the EMAS website
- Establishing green purchasing websites for public bodies

In relation to delivering regulatory relief, we suggest that the recast of the IPPC Directive 96/61/EC be examined for opportunities to highlight EMAS as a criterion in planning inspection programmes at the national level. In addition, it may also be relevant to highlight the status of EMAS in the review of Recommendation 2001/331/EC on environmental inspections.

Regarding non-legislative actions, it would be useful to provide guidance to Member States on opportunities for delivering regulatory relief to organisations registered with EMAS.

List of Indicators on the evolution of costs and benefits

One of the objectives of the study was to develop a list of indicators to demonstrate the relative costs and benefits of EMAS adoption to individual organisations. These are easily comparable between organisations with different characteristics and allow the policy maker to identify key trends and predict the magnitude of costs and benefits for an organisation wishing to adopt EMAS.

EMAS Cost and Benefit Indicators

As the cost indicators are based on the survey sample, they are only intended as order of magnitude estimates of the potential costs incurred by different types of organisation. We present these cost

indicators in a table in chapter 8. They should allow any future estimates of the costs of EMAS to be normalised and benchmarked against the results of this study in order to track the progress of initiatives, incentives and cost structures over time.

It is not possible to provide quantitative indicators of the benefits likely to arise for different groups of organisations but it is possible to score the likelihood of particular benefits occurring in the future based on the number of responses within each group identifying a particular benefit as important.

Evolutionary Indicators

The objectives of the study also required that indicators are proposed which would enable the future evolution of costs and benefits to be assessed. The cost indicators generated for this study are recommended for monitoring the evolution of costs.

Tracking evolution of certain types of benefit such as energy savings is prohibitively difficult, even though quantitative information might be provided through consultation exercises. An alternative approach might be to conduct a top-down assessment of the various impacts of EMAS. For instance, public procurement authorities in Member States may be able to provide information on the number of organisation tendering for contracts with EMAS and those without, plus an indication of their relative success rates.

EMAS Uptake indicators

The European Commission already tracks EMAS registration, withdrawal and re-registration by country and type of organisation. In addition, the number of listed companies requiring an EMS from their suppliers as part of corporate environmental policy could be used as a proxy for demand for EMAS and ISO 14001 worldwide.

Table of Content

Executive Summary.....	i
1. Introduction	1
1.1. Objectives of the Study on the Costs and Benefits of EMAS	1
1.2. Policy Context for the Study	1
1.3. Structure of the Draft Final Report	2
2. Literature review	3
2.1. An Overview of EMAS.....	3
2.1.1. <i>Key Elements</i>	3
2.1.2. <i>Brief History of EMAS</i>	4
2.1.3. <i>Steps towards EMAS Registration</i>	5
2.2. Drivers for EMAS Registration	6
2.2.1. <i>Drivers for Private Sector Organisations</i>	6
2.2.2. <i>Drivers for Public Sector Organisations</i>	8
2.3. Barriers to EMAS Registration	8
2.3.1. <i>External barriers</i>	9
2.3.2. <i>Internal barriers</i>	9
2.4. Benefits to Participating Organisations.....	10
2.4.1. <i>Cost reductions</i>	11
2.4.2. <i>Regulatory relief</i>	11
2.4.3. <i>Risk minimisation</i>	12
2.4.4. <i>Improved relations with internal stakeholders</i>	12
2.4.5. <i>Improved relations with external stakeholders</i>	12
2.4.6. <i>Competitive advantage</i>	13
2.4.7. <i>Regulatory compliance</i>	13
2.4.8. <i>Factors Influencing Benefits to Organisations</i>	14
2.4.9. <i>Benefits to the Environment</i>	14
2.5. The Costs of EMAS to Participating Organisations.....	15
2.5.1. <i>Factors Influencing Costs</i>	16
2.6. Member State Incentives for EMAS Registration.....	16
2.7. Conclusions.....	17
2.7.1. <i>Conclusions on incentives:</i>	19
3. Research Methodologies.....	21
3.1. Questionnaire survey.....	21
3.1.1. <i>Research methodologies</i>	21
3.1.2. <i>Statistical analysis of quantitative data from the survey with organisations</i>	22
3.2. Interviews with organisations.....	22
3.2.1. <i>Research methodology</i>	22
3.2.2. <i>Data analysis</i>	25
3.3. Interviews with Member State Competent Bodies.....	26
3.3.1. <i>Research methodology</i>	26
3.3.2. <i>Data analysis</i>	26
4. Results	27
4.1. Results from survey and interviews with organisations.....	27
4.1.1. <i>Number and Nature of Responding Organisations</i>	27
4.1.2. <i>Motivation for Seeking EMAS Registration</i>	29
4.1.3. <i>Reasons for Withdrawal from EMAS and Factors that would Encourage Re-registration</i>	33
4.1.4. <i>Benefits of EMAS Registration</i>	36
4.1.5. <i>Costs of EMAS</i>	41
4.1.6. <i>Incentives and Barriers</i>	44

4.2.	Results from interviews with Member State Competent Bodies	47
4.2.1.	<i>Introduction</i>	47
4.2.2.	<i>Assistance and Promotional activities</i>	47
4.2.3.	<i>Incentives</i>	55
4.2.4.	<i>Barriers</i>	61
4.2.5.	<i>Benefits</i>	69
5.	Analysis of the costs and benefits of EMAS to registered organisations	71
5.1.1.	<i>Analytical Approach</i>	71
5.1.2.	<i>Costs and Benefits to Individual Organisations</i>	73
5.1.3.	<i>Costs and Benefits Linked to Combinations of Characteristics</i>	86
6.	Conclusions on the costs and benefits of EMAS	89
6.1.	Drivers to register	89
6.2.	Barriers to registration	91
6.3.	The costs of EMAS	92
6.4.	The benefits of EMAS	92
6.5.	Incentives	94
7.	Conclusions on best practice with EMAS	95
7.1.	Best practice in organisations	95
7.1.1.	<i>Encouragement and Motivation for Uptake</i>	95
7.1.2.	<i>Maximising the benefits of EMAS Registration</i>	95
7.1.3.	<i>Minimising the costs of EMAS Registration</i>	96
7.2.	Best practice in Competent Bodies	96
7.2.1.	<i>Promotional activities</i>	97
7.2.2.	<i>Financial assistance</i>	97
7.2.3.	<i>Technical assistance</i>	97
7.2.4.	<i>Public procurement</i>	98
7.2.5.	<i>Delivering regulatory relief</i>	99
7.3.	Recommendations for options and actions	99
7.3.1.	<i>Raising public awareness about EMAS</i>	100
7.3.2.	<i>Increasing awareness amongst organisations</i>	101
7.3.3.	<i>Facilitating registration</i>	102
7.3.4.	<i>Technical assistance</i>	103
7.3.5.	<i>Generating financial incentives</i>	103
7.3.6.	<i>Maximising efficiency benefits and energy savings</i>	104
7.3.7.	<i>Increasing national capacities</i>	105
7.3.8.	<i>Public procurement</i>	106
7.3.9.	<i>Regulatory relief</i>	107
8.	List of Indicators on the evolution of costs and benefits	110
8.1.	Analytical Approach	110
8.1.1.	<i>Development of Indicators</i>	110
8.1.2.	EMAS Cost and Benefit Indicators	110
8.1.3.	<i>Evolutionary Indicators</i>	116
References:	119
Annex I:	Online Questionnaire for Organisations	123
Annex II:	List of Contacts in the Competent Bodies	133
Annex III:	Semi-structured questionnaire for interviews with organisations	135
Annex IV:	Semi-structured questionnaire for interviews with Member State Officials	142
Annex V:	Analysis of Responses to the EMAS Questionnaire	145
Annex VI:	Example Matrix: Organisations	186

1. Introduction

This Final Report sets out the results of a study on the costs and benefits of registration under the Community Environmental Management and Audit Scheme (EMAS) to organisations. The study is being conducted by Milieu Ltd. and Risk and Policy Analysis Ltd. for DG Environment of the European Commission under Study Contract No. 07.0307/2008/517800/ETU/G.2.

The aims of the Final Report are:

- to describe the methodological steps that have been undertaken to investigate the costs and benefits of EMAS to registered organisations;
- to detail results and conclusions on the costs and benefits of EMAS;
- to identify best practice and provide recommendations for possible initiatives at EU level; and
- to present a list of indicators on the costs and benefits of EMAS to organisations.

In introducing the Final Report, this section goes on to provide a summary of the objectives of the study, briefly outlines the policy context for the study, and describes how the report is structured.

1.1. Objectives of the Study on the Costs and Benefits of EMAS

The aim of the study is to investigate the costs and benefits to organisations of EMAS registration, as well as to examine the incentives and barriers confronted by potential new registrants.

A key objective of the study is to uncover evidence of the kinds of benefits that accrue to organisations that participate in EMAS. While information on economic costs is easier to measure and hence more readily available, comprehensive evidence of the “soft” benefits has not been documented. In investigating the costs and benefits of EMAS to organisations, we are looking inside the black box of internal organisational management in order to understand what kinds of internal characteristics determine an organisation’s capacity to reap benefits from EMAS, as well as influencing the costs of registration and implementation.

As well as investigating costs and benefits, the study also focuses on the kinds of incentives that Member States use to motivate organisations to join EMAS and as the structures set up to support registration. This material will enable us to identify the external characteristics that influence the costs and benefits of EMAS to organisations.

Based on the evidence on costs, benefits, barriers and incentives, the project consortium has generated recommendations for strategies designed to attract new organisations into the scheme, to minimise the barriers to registration and to provide targeted assistance to new organisations. This report identifies the best initiatives that help organisations to realise maximum benefits from the application of EMAS, both internal to the organisation and run by Member State competent authorities and/or accreditation bodies. In some cases, these initiatives may be targeted towards specific sectors or categories of organisations.

A final output of the study is a set of indicators that can be used to make assumptions about the possible costs and benefits that may arise for an organisation.

1.2. Policy Context for the Study

Council Regulation (EC) No 1836/93 established the Community Environmental Management and Audit Scheme (EMAS). Coming into force in 1995, this voluntary mechanism was initially limited in scope to

industrial companies. However, this scope was widened in 2001¹ to encompass public and private service providers as well as public sector organisations.

The Commission has presented a draft proposal² for revision of the EMAS Regulation, together with an accompanying impact assessment³. The revision aims to increase participation in the scheme, establishing the scheme as a benchmark for environmental management systems, allowing organisations to upgrade their management systems to EMAS, and promoting environmental considerations up the value chain. In addition, the revision aims to reduce the associated administrative burden and costs, in particular for Small and Medium Enterprises (SMEs). The objectives of the revision and the issues identified in the impact assessment provide the rationale behind conducting the proposed study on costs and benefits and, as such, the outcomes of the study should serve to inform the revision process.

1.3. Structure of the Final Report

Section 2 of the report includes the review of the literature focusing on costs and benefits. This provides a background to the study by summarising research already undertaken on EMAS and identifying the available evidence on costs and benefits. Section 3 then outlines the research conducted and summarises the methodology employed, namely an online questionnaire survey with EMAS registered organisations and follow up interviews with a selected group of organisations and with Member States competent bodies.

Section 4 goes on to summarise the results that have emerged from an analysis of submitted questionnaires and interview with organisations, as well as the results from the interviews with competent bodies.

Section 5 outlines the approach taken to analysing the data on costs and benefits and presents the results of this analysis. Section 6 then draws conclusions regarding the costs and benefits of EMAS to organisations, including monetary estimates.

Section 7 presents best practice, both within organisations to maximise benefits and reduce costs and by competent bodies in promoting EMAS. Recommendations for options to promote EMAS at EU level are include at the end of this section. Section 8 then presents the list of indicators.

The report also includes a reference list and a number of annexes, including: the online questionnaire for organisations; a contact list for the Competent Bodies; semi-structured questionnaires for interviews with organisations and with competent bodies and a detailed analysis of questionnaire responses.

¹ Regulation (EC) No 761/2001

² EC (2008): Proposal for a Regulation of the European Parliament and of the Council on the voluntary participation by organisation in a Community eco-management and audit scheme (EMAS): COM(2008)402/2, SEC(2008) 2121-2122

³ EC (2008): Commission Staff Working Document accompanying the Proposal for a Regulation of the European Parliament and of the Council on the voluntary participation by organisation in a Community eco-management and audit scheme (EMAS): Impact Assessment, COM(2008) 402, SEC(2008) 2121

2. Literature review

This literature review was undertaken with the aim on informing work on the study, namely our empirical research with organisations and Member State officials through an online survey and interviews.

In this review we summarise evidence regarding the costs and benefits that accrue to EMAS registered organisations. In doing so, we draw on a range of materials, including official publications of the European Commission, Member States, academia and think tanks. These publications draw conclusions based on evidence including the results of surveys, interviews and case studies with individual organisations.

In section 2.1 we provide a brief introduction to EMAS, including a brief history of the scheme, key elements and the steps in registration.

In section 2.2, we discuss the drivers that motivate organisations to register with EMAS, while in section 2.3 we identify barriers to registration. The aim of these sections is to provide an insight into how organisations perceive the benefits and costs of EMAS prior to registration.

Section 2.4 focuses upon the range of benefits that are claimed to be associated with EMAS registration. In each case we review the empirical evidence to support these claims, and in doing so we both identify those benefits for which robust evidence exists and reveal the gaps in the evidence. With regards to gaps in the evidence, we consider why claims regarding certain types of intangible or diffuse benefits are harder to back up with clear evidence. We go on to discuss evidence to support the premise that certain internal and external factors determine the benefits accruing to organisations, such as organisation size and awareness levels concerning EMAS.

In section 2.5, we repeat this exercise for EMAS related costs. We examine the costs associated with registration and review available estimates. Following the structure of the previous section, we look for evidence that links internal organisational characteristics with the scale of certain costs, as well as identifying any correlations between external factors and costs, an obvious example being the variation in registration costs across Member States.

Section 2.6 then briefly reviews the types of incentives that Member States offer to encourage participation in EMAS.

Finally, in section 2.7 we draw some conclusions regarding the costs and benefits of EMAS and the state of available evidence. The conclusions serve to highlight areas upon which we are focusing our ongoing empirical investigations in order to generate additional evidence regarding costs and benefits.

2.1. An Overview of EMAS

2.1.1. Key Elements

EMAS is a voluntary environmental management system, under which organisations evaluate, manage and continuously improve their environmental performance. EMAS is open to any organisation that is dedicated to improving its environmental performance. Participating organisations are obliged to develop and implement an environmental management system (EMS). An EMS is defined in EMAS II as “the part of the overall management system that includes the organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing,

implementing, achieving, reviewing and maintaining the environmental policy”⁴.

Three main features of EMAS are performance, transparency and credibility. The objective of the scheme is to encourage organisations to improve their environmental performance by requiring them to evaluate their environmental impact and commit to step-by-step reductions. Transparency is achieved partly through the environmental statement which provides information to the public on the environmental impact and performance of the organisations, and partly through the active involvement of employees in the implementation of the scheme. A key characteristic of the scheme is that the verification and registration process should be independent, lending credibility to the environmental claims of participating organisations.

The scheme neither prescribes the mechanisms to employ, nor how much an organisation should do, beyond a requirement to ensure compliance with relevant regulatory requirements. Instead, it provides a flexible approach to improving environmental performance, as organisations assess their own capabilities and set their own goals for improvement. Progress towards achieving these goals and establishing effective procedures and systems within the organisation, approved by an accredited verifier, then leads to successful registration of the organisation by the appropriate competent and/or accreditation body in that Member State.

Following registration, an organisation is permitted to display the EMAS logo on marketing materials, provided the statement of its environmental credentials, as submitted during the registration process, is made public. The logo cannot, however, be used on products, since the performance of the products themselves is not under scrutiny.

2.1.2. Brief History of EMAS

Council Regulation (EC) No 1836/93 establishing the Community Environmental Management and Audit Scheme (EMAS) was adopted in 1993 as a step towards the Community’s goal of sustainable development. Coming into force in April 1995, the EMAS scheme was open for voluntary participation by organisations. Participation was initially restricted to sites operating industrial activities.

Article 20 of Regulation 1836/93 stated that the EMAS scheme had to be reviewed no more than 5 years after its entry into force. Subsequently, in 2001, the legislation was revised with the adoption of Regulation 761/2001, EMAS II. Key revisions include an extension of the scope of EMAS to all economic sectors, including local authorities. In addition, a visible and recognisable EMAS logo was adopted to allow registered organisations to publicise their participation in the EMAS more efficiently. With regards to EMAS requirements, the involvement of employees in the implementation process was increased, and the role of the environmental statement was strengthened with the aim of improving communication between registered organisations and the public.

According to the latest statistics (updated on 28/09/2009)⁵ the current number of EMAS registrants is 4341 EMAS registered organisations on 6667 sites. The distribution of registered organisations across Member States is markedly uneven. Germany, Spain and Italy stand out in their total number of registrants, and Austria, Greece, Denmark, and Belgium in relation to their population. Participation rates are much lower in the UK, the Netherlands and France. Amongst the newer Member States, only the Czech Republic has a significant number of registered organisations, while Lithuania and Bulgaria have no registrations. Table 2.1 provides a summary of the current levels of Member States participation in EMAS.

⁴REGULATION (EC) No 761/2001 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 19 March 2001, Article 2(k), Definitions

⁵http://ec.europa.eu/environment/emas/about/participate/sites_en.htm

Table 2.1: Summary of the current levels of Member State participation in EMAS

Member State	Number of EMAS Registered Organisations	Approximate number of EMAS Registered Sites
Austria	262	628
Belgium	49	428
Bulgaria	0	-
Cyprus	4	4
Czech Republic	31	33
Denmark	94	235
Estonia	2	4
Finland	37	44
France	15	15
Germany	1,401	1,845
Greece	69	61
Hungary	18	21
Ireland	7	11
Italy	983	1,395
Latvia	6	9
Lithuania	0	-
Luxembourg	2	4
Malta	1	1
Netherlands	9	13
Poland	17	24
Portugal	81	88
Romania	1	1
Slovakia	6	7
Slovenia	2	6
Spain	1102	1,353
Sweden	75	76
UK	67	361
Total	4,341	6,667

Source: http://ec.europa.eu/environment/emas/about/participate/sites_en.htm
Accessed 28.09.09

2.1.3. Steps towards EMAS Registration

The registration process involves four steps to be completed by the participating organisation:

- 1) Conduct an environmental review of all its activities and assess them against existing environmental laws;
- 2) Establish an environmental management system setting out its environment objectives and the means to achieve these objectives;
- 3) Carry out an internal environmental audit assessing the management system in place and compliance with relevant environmental regulatory requirements;
- 4) Provide a statement outlining its environmental policy, programme and management system, and summarising its environmental performance with the results achieved and the steps necessary for future improvements (see box 2.1).

Once the environmental statement has been accredited by the verifier, the Competent Body will register the company after receipt of the registration fee. The company then have the right to use the EMAS logo.

Box 2.1: Information to be included in the environmental statement

According to article 3.2 of the Annex III to the EMAS regulation, the statement has to include the following information:

- a description of the organisation, its structure and its activities, products and services;
“(a) a clear and unambiguous description of the organisation registering under EMAS and a summary of its activities, products and services and its relationship to any parent organisations as appropriate;”
- an assessment of all the significant direct and indirect environmental issues;
“(c) a description of all the significant direct and indirect environmental aspects which result in significant environmental impacts of the organisation and an explanation of the nature of the impacts as related to these aspects (Annex VI);”
“(d) a description of the environmental objectives and targets in relation to the significant environmental aspects and impacts”
“(f) other factors regarding environmental performance including performance against legal provisions with respect to their significant environmental impacts;”
- a summary of year-by-year figures on pollution emissions, waste generation, consumption of raw material, energy and water, and noise;
“(e) a summary of the data available on the performance of the organisation against its environmental objectives and targets with respect to its significant environmental impacts. The summary may include figures on pollutant emissions, waste generation, consumption of raw material, energy and water, noise as well as other aspects indicated in Annex VI. The data should allow for year-by-year comparison to assess the development of the environmental performance of the organisation;”
- a presentation of the organisation's environmental policy, programmes and management system;
“(b) the environmental policy and a brief description of the environmental management system of the organisation;”
- the deadline for the next statement; and,
- the name and accreditation number of the environmental verifier and the date of validation.“

2.2. Drivers for EMAS Registration

In this section we consider the different drivers that cause organisations to seek EMAS registration. Given the differences in the priorities of private versus public organisations, we discuss the drivers for these two sectors separately. Table 2.2 below provides an overall summary of the drivers for registration with EMAS.

2.2.1. Drivers for Private Sector Organisations

A number of studies have investigated the drivers for EMAS registration for private sector organisations and identified a heterogeneous range relating to competitive advantage reaped through improved image and market access, cost savings, regulatory compliance and improved relations with stakeholders.

A general conclusion is that the size of the organisation has also been found to play a role in EMAS registration. In a study for the Organisation for Economic Cooperation and Development (OECD), Rennings *et al*

EMAS registrations are highest amongst medium and large private sector firms

investigated the application of EMS in the German manufacturing sector, and found EMAS registrants to be highest amongst facilities with more than 250 employees (Rennings *et al*, 2003). Heinelt, H. and Smith, R., ed. reviewed literature as well as carried out several case studies in Germany, Greece and the UK on the importance of company size for EMAS registration and concluded that larger firms are taking up EMAS more than smaller firms (Heinelt, H. and Smith, R, 2003).

Table 2.2: Drivers for the adoption of EMAS

Drivers
Reduction of environmental impacts
Savings from energy and resource consumption and waste management
Image improvement
Achieve regulatory compliance
Satisfy requests by customers
Obtain competitive advantages, differentiate product
Regulatory and monetary incentives (de-regulation, tax relief)
Better organisation and management of activities
Keeping up with competitors
Improve relations with regulatory authorities
Improve relationship with stakeholders and local communities
Better risk management
Satisfaction of requests from corporate headquarters
Improve rating in access to public funding and procurement procedures
Identify future environmental liabilities
Access to export markets
Mergers and acquisitions

The expectation of competitive advantage from EMAS implementation has been identified as a key driver for commercial organisations to register (EVER, 2005, Rennings *et al*, 2003, Clausen *et al.*, 2002). A 2004 study on EMAS and ISO 14001 registered Spanish companies identified improved image as a key driver for EMAS registration (Escapa González, 2004).

Cost savings are an important driver for the manufacturing sector

With regards to the manufacturing sector, a study undertaken by the German UBA found cost savings to be a key driver for EMAS (Clausen *et al.*, 2002). In their survey of the German manufacturing sector, Rennings *et al* also identified creating cost savings from reduced resource consumption and waste management as a key driver. The emphasis on cost savings may be particularly relevant

for the manufacturing sector, where raw materials and waste disposal costs form a high percentage of operational costs.

Regulatory compliance has been identified by a number of studies as a driver for registration (Rennings *et al*, 2003). In his survey of Spanish organisations, Leal found that non-certified companies identify the assurance of legal compliance as a key benefit deriving from EMAS certification (Leal, 2003). A 2004 study of Spanish firms again found legal compliance to be a key driver in EMAS registration (Escapa González, 2004).

EMAS is associated with regulatory compliance

Various studies concluded that the relative importance of different drivers to vary according to the location of markets and corporate headquarters. The EMAS Eastwards study concluded that export markets and potential mergers and acquisitions were the most important driver for East European organisations joining EMAS (Meima and Starkey, 2000). Perkins and Neumayer suggest that the up-take of EMAS is increased with the number of trade linkages that a private firm has with countries that

have a higher number of EMAS registrants (Perkins and Neumayer, 2004).

Regarding stakeholders, both the EVER study and Rennings *et al* identify an important role for internal stakeholders in driving the adoption of EMS, namely management employees and corporate headquarters. Rennings *et al* also found that firms listed on the stock exchange and firms with their headquarters located abroad were more likely to operate an EMS. Bracke *et al* found that companies whose headquarters is located in a country that actively encourages EMAS have a higher probability of participation (Bracke *et al*, 2007). This evidence supports the supposition that firms use EMS to reassure internal stakeholders about their environmental performance.

EMAS registration sends a message to internal and external stakeholders about a firm's environmental performance

The importance of external stakeholders, namely households and commercial customers was found to be more significant in driving EMAS registration where consumers display sensibility with regards to the environmental characteristics of the products, such as paper and clothing. Facilities with high environmental costs were found to be especially concerned with regulatory compliance and relations with public authorities (Rennings *et al*,

2003). Perkins and Neumayer argue that EMAS registration may be triggered by managers' quest for external legitimacy and the need to conform to widely held beliefs of efficient management practice (Perkins and Neumayer, 2004)

In a context where small-medium enterprises (SMEs) make up approximately 90% of the business sector and are estimated to contribute up to 70% of all industrial pollution (Hillary, 2000), it makes the inclusion of SMEs into an environmental management scheme such as EMAS critical. At the same time, SMEs range from companies with one employee to those with 249, and the heterogeneity of the sector makes generalising about the kinds of drivers for EMAS uptake challenging. The EVER study finds that in deciding whether to implement EMAS, SMEs may be particularly affected by customer demand (EVER, 2005). In her review of 33 studies on the uptake of EMS by SMEs, Hillary finds public image to be a key incentive in driving registration (Hillary, 2003).

2.2.2. Drivers for Public Sector Organisations

In terms of drivers for public authorities, recent studies have found the decision of public institutions to adopt EMAS to be closely related to their nature and functions. Public authorities have been found to be driven by the desire to provide an example for the communities they govern, including both firms and citizens, and their need to obtain and maintain political consensus amongst stakeholders (SSSUP 2005, EMAS Peer Review 2004, Focus Lab 2003, EURO-EMAS 2001). In their review of the drivers behind the development of EMS in Swedish local authorities, Emilsson and Hjelm found that the authorities were seeking to bring order to environmental matters within their organisation (Emilsson and Hjelm, 2002).

Public sector organisations use EMAS registration to secure legitimacy

2.3. Barriers to EMAS Registration

Barriers to EMAS registration are generally categorised into those that are external to the organisation, and those that are internal. Table 2.3 below provides a summary of key barriers identified by the literature.

Table 2.3: Barriers to EMAS registration

External Barriers
Cost of registration
Lack of support and guidance from Member State Competent Bodies
Hindrances linked to the institutional framework
Lack of market recognition of the EMAS logo
Lack of customer interest and awareness regarding EMAS
Lack of feedback following registration
Lack of recognition and positive rewards by public institutions
Internal Barriers
Lack of financial resources/ Budget constraints
Difficulties in the understanding and perception of the EMAS scheme
Organisational culture
Lack of human resources and competence
Difficulties in involving and motivating the internal personnel
Dominance of foreign consultancies in delivering consultation and auditing services to support registration, associated high prices, and the need for translation
Lack of political support (public authorities)
On-going commitment and difficulties in understanding and implementing the EMAS requirements (public authorities)

2.3.1. External barriers

External barriers encompass a wide set of factors, ranging from the cost of implementation to lack of support and guidance from Member State Competent Bodies, from hindrances linked to the institutional framework and the verification/registration process to the lack of market recognition of the EMAS logo.

The costs associated with registration including the time and efforts involved are widely acknowledged as a key barrier (Escapa González, 2004, Biondi et al. 2000). A 2005 survey on the uptake of EMAS and ISO 14001 showed how the lack of financial resources and the costs of certification are among main barriers against the implementation of an EMS (Strategic SME Group, 2005). This is particularly relevant for SMEs, where financial resources are more limited (Hillary 1999).

Costs associated with certification and registration represent a key external barrier

Another important external factor is the lack of customer interest and awareness regarding EMAS (Kvistgaard 2001, Brouhle 2000, Best project 2004), with the resulting costs then associated with promoting EMAS registration.

The EVER study identified a perceived lack of feedback following registration, which serves to discourage new applicants (EVER, 2005). In their 2003 study, De Leo et al. also identified a lack of recognition and positive rewards by public institutions as a deterrent (De Leo et al., 2003).

2.3.2. Internal barriers

Internal barriers include a wide range of internal organisational factors, such as lack of resources, difficulties in the understanding and perception of the EMAS scheme, and organisational culture. According to the EMAS Eastwards study, the main organisational barriers to EMAS registration for

organisations in the new Member States are the lack of human resources and competence and the difficulties in involving and motivating the internal personnel. Additional barriers include the dominance of foreign consultancies in delivering consultation and auditing services to support accreditation, associated high prices, and the need for translation (Meima and Starkey, 2000). A British study concluded that the requirement to make an environmental statement publicly available Environmental Statement in EMAS acts a barrier to registration by SMEs, due to the long-term commitment of resources that this implies (Chen, 2004).

Public authorities often lack the skills required to develop environmental management schemes

With regards to public authorities, studies identify a number of barriers faced in the implementation of the EMAS. Key barriers related to resources include a lack of time and relevant skills, difficulties in motivating staff, and budget constraints. Additional barriers include a lack of political support and on-going commitment and difficulties in understanding and implementing the EMAS requirements (SSSUP 2005, EURO-EMAS 2001, EMAS LAB 2003,

Focus Lab 2003).

The Finnish Envedu project *inter alia* reviewed implementation of EMAS in the educational sector and concluded that the number of EMAS and ISO 14001 certificates was very low. The project suggests that this is because of a lack of specific skills and competences relating to environmental management and the costs associated with registration, certification and auditing (Environmental Certification and EMAS Registration of Educational Establishments, 2004).

2.4. Benefits to Participating Organisations

The uptake and success of EMAS is heavily dependent on whether organisations are able to harness the potential benefits, without entailing excessive costs (Majerčák, 2006). However, drawing firm conclusions regarding the concrete benefits of EMAS accreditation is challenging for a number of reasons.

Firstly the heterogeneity of organisations involved in the scheme makes it unrealistic to draw common conclusions. We can expect the benefits to public authorities to differ from those that accrue to commercial organisations.

Secondly, intangible benefits such as the commitment levels of personnel, reduced risk, and improved image, accrue over the long term and are challenging to measure and equate with an economic value. The drivers of intangible benefits are difficult to isolate in complex organisational systems, and managers may prefer to capture them for themselves rather than ascribing them to EMAS implementation. In addition, clearly linking a benefit with EMAS requires an assessment of what would have happened had the organisations not registered with EMAS. In particular, competitive advantages (especially those directly related to the market response, such as customer satisfaction, increase of the turnover or the market share, etc.) and improved stakeholder-relations (particularly with reference to the relation with institutional actors and with the local communities) may take a long time to show.

Clearly linking intangible benefits that accrue over the long term with EMAS registration is challenging

Nevertheless, various studies have identified concrete benefits backed up with empirical evidence. Table 2.4 below provides a summary of the key benefits emerging from EMAS registration for which concrete evidence has been found.

Table 2.4: Summary of the benefits of EMAS registration to organisations

Benefits of EMAS registration
Reduced costs for resources and waste management
Regulatory relief
Risk minimisation
Improved relations with internal stakeholders
Improved relations with external stakeholders
Competitive advantage
Achieving regulatory compliance

A range of specific benefits identified in the literature and the associated empirical evidence are discussed below.

2.4.1. Cost reductions

The introduction of an EMS should enable an organisation to identify opportunities for the better management of resources, including saving in raw materials and energy in the supply chain of an organisation, or in the reuse or recycling of resources. Such steps reduce consumption and in turn reduce the operating costs of that organisation. Although one would expect such benefits to be greater in the manufacturing sector, they can also accrue to organisations delivering services, and to the public sector through savings in energy, electricity, paper consumption etc.

Clear evidence of cost reductions arising from EMAS implementation in both the private and public sectors

In terms of concrete evidence for such costs saving, a recent survey on EMAS in the UK suggests that over 60% of respondents perceive resource efficiencies leading to cost reductions as the most significant benefit of environmental management systems (ENDs, 2007). A German study found positive benefits to predominate at the majority of companies involved in EMAS, with key cost savings from waste reduction, improve energy efficiency, reduced water consumption and sewage generation, and recycling (von Hauff, 2000). In their survey of German companies implementing EMAS, Freimann and Schwedes also found evidence of costs savings (Freimann and Schwedes, 2000)

Regarding public authorities, a number of studies found evidence of cost savings through a more eco-efficient management resulting in increased recycling performance, reducing energy consumption, and increased income generated from sale of recovered waste as a raw material (SSSUP 2005, EURO-EMAS 2001, Focus Lab 2003).

2.4.2. Regulatory relief

Granting regulatory relief to EMAS registered organisations is at the discretion of the Member State authorities and the possibility of reaping this benefit is therefore not consistent across the EU. When local authorities choose to relax certain regulatory requirements for EMAS registered organisations it reduces the regulatory burden incurred by the company and can avoid a duplication of efforts required for registration, for example with the relaxation of reporting requirements (Glachant *et al.*, 2000). Such regulatory relief is most common granted to industrial installations, and may for example include less frequent inspections requirements under Directive 96/61/EC on Industrial Pollution Prevention and Control. The premise for granting less frequent inspections is that installations are better informed concerning environmental legislation, more organised and more committed to implementation (Dasgupta *et al.*, 2000).

Benefits from regulatory relief accrue to the manufacturing sector

In terms of concrete evidence of regulatory relief as a factor yielding benefits to organisations, a survey of organisations in France, Germany, the Netherlands and the UK found regulatory relief to increase participation in EMAS (Wältzold *et al.*, 2001). The requirement was that the regulatory relief must be granted exclusively to EMAS registered companies and integrated into a comprehensive voluntary policy.

2.4.3. Risk minimisation

By undertaking a thorough assessment of their operations, organisations should be in a position to reduce the associated risk levels. It is expected that this is more relevant for organisations in the manufacturing sector, when the risks associated with industrial processes are significant and strategies to minimize risk require an understanding of all aspects of production. Effective risk minimisation can yield financial benefits by increasing trust amongst shareholders, investors, insurance companies and financial institutions. For example, proper risk management may prompt lenders and insurers to offer better financial terms.

While EMAS should serve to reduce risk – to date evidence of financial benefits is weak

While there is evidence of increased trust amongst internal stakeholders from firms that operate EMAS (EVER, 2005, Rennings *et al.*, 2003, Freimann and Schwedes, 2000), there is no concrete evidence of subsequent financial benefits from reduced insurance costs in the literature.

2.4.4. Improved relations with internal stakeholders

It has been proposed that EMAS can serve to improve internal relations within an organisations, namely with employees and with corporate headquarters in the case of organisations that operate as subsidiaries. This proposition is supported by evidence from surveys citing improved relations with internal stakeholders as a key driver for EMAS registration (Rennings *et al.*, 2003, EVER, 2005).

In their survey of German companies implementing EMAS, Freimann and Schwedes found evidence of corporate benefits, in terms of improved relations with internal stakeholders in the form of corporate headquarters (Freimann and Schwedes, 2000). The motivation and involvement of personnel is also cited as an organisational benefit emerging from EMAS implementation. Increased motivation of personnel has been singled out as a relevant benefit deriving from EMSs certification in a number of studies (Hillary 1998, IRIS 2000, Von Hauff 2000, Biondi *et al.* 2000).

EMAS serves to improve internal firm relations and increase the motivation levels of personnel

2.4.5. Improved relations with external stakeholders

EMAS can also generate benefits through an improvement in relations with external stakeholders. Specifically, this can include regulatory authorities and members of the public who may live in proximity to an EMAS registered site where activities take place. However, there is little direct evidence in the literature of benefits emerging from increased trust from external stakeholders in commercial organisations.

EMAS increases opportunities for effective communication within local community and stakeholders, enhances transparency and credibility and improves the image of the organisation

The literature on EMAS implementation by public authorities confirms that EMAS serves to increase opportunities for effective communication within local community and stakeholders, to enhance

transparency and credibility and improve the image of the institution (IEFE–QualitAmbiente 2005, SSSUP 2005, EURO-EMAS 2001, Focus Lab 2003).

2.4.6. Competitive advantage

For the purpose of this study, we restrict the defining of competitive advantage to increased market access and improved relations with customers. When EMAS was created, the initial idea was that the pressure of competition would encourage a large number of companies to participate in order to gain

Competitive advantages include:

- *increased customer satisfaction*
- *improved image*
- *increased market access*

increase access to green markets (Wenk, 2005). The new EMAS logo and the verified environmental statement both serve as proof of sound environmental management and can be used in marketing activities to improve relations with customers. EMAS was promoted with the argument that participating firms could expect an increase in the market share of their products from participating in the programme (Brouhle, 2000).

Studies have subsequently uncovered a range of evidence linking EMAS with competitive advantage. The EMAS Eastwards study cited evidence of EMAS registration increasing market access (Meima and Starkey, 2000), while the EVER study suggests that SMEs can benefit from improved customer satisfaction when a major customer requests evidence of EMAS registration. The EVER study identifies the most important competitive advantage for EMAS registered organisations as an improved image (EVER, 2005). In a pan-EU survey Hillary found SMEs to perceive an improvement of image as the main benefit (54%), with its importance decreasing as the size of the organisation increases (Hillary, 1998). In his survey of German companies registered with EMAS, Wittman found an effective improvement in company image in 62% of cases (Wittman, 1996).

In contrast, according to a 2001 survey, most Dutch and German companies did not see great advantage from the publication of the environmental statement under EMAS, with some expressing disappointment with the communication results (Wätzold and Bültmann, 2001).

With regards to public authorities, local authorities registered in EMAS can benefit from a competitive edge over those who do not. This is particularly relevant for territory quality and attractiveness, such as EMAS's capability to attract investments and tourists, recruiting and retain quality staff, attract and retain self-sufficient residents (EURO-EMAS 2001, Focus Lab 2003).

2.4.7. Regulatory compliance

The requirement under EMAS for an organisation to be in compliance with relevant legislation should have the effect of ensuring that an organisation is both familiar with relevant requirements and in a better position organisationally to meet them. Studies identifying drivers for registration cite achieving regulatory compliance as a key driver (EVER, 2005, Rennings *et al*, 2003).

Strong evidence of EMAS facilitating legal compliance

In terms of evidence, a number of studies emphasise how EMAS supports organisations from the point of view of increased levels of legal compliance they guarantee (Madsen and Ulhoi 1999, Van Der Veldt 1997, Sunderland 1997, Watson 1996, Aragon 1998). Biondi *et al.* cite better legal compliance the capacity for continuously monitoring compliance as one of the most significant benefits of EMAS registration (Biondi *et al.*, 2000).

The EVER study finds EMAS to provide considerable benefits in the area of legal compliance. The most important benefits identified include greater awareness of regulatory requirements, better compliance and better planning of actions for legal and regulatory compliance (EVER, 2005). A study examining six German electricity and gas providers found regulatory compliance to be a key benefit (Morrow, 2001). In his wider assessment of EMS in general Hamschmidt states that legal compliance is perceived as a key benefit (Hamschmidt, 2001).

2.4.8. Factors Influencing Benefits to Organisations

A review of the literature suggests that both internal firm characteristics and external factors act to determine an organisation's capacity to capitalise on EMAS.

With regards to internal factors, the EVER study suggests that the success of EMAS in yielding benefits relates to the effort that the organisation makes in communicating and valorising EMAS registration on the market and with stakeholders (EVER, 2005). In their survey of German manufacturing firms, Rennings *et al* suggest that benefits accrue more readily to firms of a certain scale. They find that the presence of individuals explicitly responsible for environmental management is more likely in a larger firm and facilitates implementation of an EMS (Rennings *et al.*, 2003).

In terms of external factors that influence benefits that might accrue to a participant, awareness of EMAS amongst potential customers in the supply chain is key in determining possible competitive advantage. Public procurement policies that favour EMAS can serve to increase these benefits. Opportunities for regulatory relief have already been identified above as a factor that varies between Member States.

The lack of specific evidence on factors that influence an organisation's capacity to reap benefits from EMAS registration is an area that Milieu and RPA will address in the ongoing study of which this literature review is part.

External factors influencing benefits include:

- *Awareness of EMAS in the supply chain*
- *Public procurement policies*
- *Regulatory relief*

2.4.9. Benefits to the Environment

The objective for introducing the EMAS Regulation in July 1993 was to create another environmental policy tool to achieve the community's goal of sustainable development. As such, it is important that EMAS demonstrably generates positive externalities in the form of improved environmental performance and increased levels of regulatory compliance, leading to a lower environmental impact of registered organisations.

In terms of evidence for improved performance, the most persuasive evidence comes from the manufacturing sector. While, Freimann and Walther argue that EMAS has not yet proven its capacity to lead companies to a better ecological performance (Freimann and Walther, 2002), a number of surveys have found evidence that EMAS has led to process innovations in the manufacturing sector. The EVER study found that EMAS has a significant role to play in stimulating environmental improvement, particularly in relation to facility-related aspects of waste, water and air pollution (EVER, 2005). In his survey of nine European Member States, Wagner found evidence that EMS are associated with process innovations, but that this is moderated by the interaction of environmental management system implementation with country location. He found no evidence linking environmental management systems are associated with product innovations (Wagner, 2009). Rennings *et al* found strong evidence in support of positive effects on process innovation from EMS implementation

EMAS implementation has led to process innovation in the manufacturing sector

(Rennings, Ziegler *et al.*, 2003).

Evidence of improved environmental performance in the public sector resulting from EMAS registration

In terms of benefits from EMAS implementation in local authorities, a number of recent studies found evidence of improvements in environmental performance. An Italian survey carried out on 19 registered local authorities found an increase in separate waste collection, an overall improvement of environmental conditions, reductions in water consumption and energy savings (Focus Lab, 2003). Under the EURO-EMAS project, 9 municipalities across Europe aimed at improving environmental performance by 33% over the three-year period of the project. The main achievements of participating municipalities involved waste reduction and recycling, energy efficiency and improved resource use (EURO-EMAS, 2001). In addition, the EMAS Peer Review study found the environmental performance of participating local authorities in accession countries to have improved following EMAS registration (EMAS Peer Review, 2005).

2.5. The Costs of EMAS to Participating Organisations

The cost for implementing EMAS can be divided into external costs and internal costs. The external costs of implementing EMAS include the following aspects: costs for the external verifier; registration fees; and any additional external support from consultants for the initial review, auditing, training and ongoing implementation. Registration fees vary across Member States and between sectors and can range from 0 to 1500 Euros, in the case of large companies. In general, the EMAS Regulation foresees reduced registration fees for SMEs to encourage higher participation and some Member States have introduced reductions for SMEs.

Internal costs vary with the size and the sector of the organisation. The costs are comprised of the implementation cost and the maintenance costs. It is challenging in the literature to find precise data on the costs of EMAS to organisations, with the challenge compounded by variations across sectors and across Member States. In the “EMAS Toolkit”, the European Commission estimates the financial resources spent on setting up an environmental management system, including external consulting fees and associated communication and registration costs, to be on average:

€ 10,000 for very small companies	(< 10 employees)
€ 20,000 for small companies	(< 50 employees)
€ 35,000 for medium companies	(50 <250 employees)
€ 50,000 for large companies	(> 250 employees)

However, a number of studies on EMS costs suggest that these figures may underestimate the costs (Hamschmidt and Dyllick, 2001, Cesqa Sincert, 2001). Clausen (2002) collected evidence from previous studies on the costs of EMAS registration in different countries, with the result presented in table 2.5 below.

Table 2.5: The costs of EMAS registration

Member State	SIZE			Average
	Small <100 employees	Medium <500 employees	Large >500 employees	
Austria	€ 109,000	€ 225,000	€ 153,000	-
Denmark	-	-	-	€ 62,000
Germany	€ 37,000	€ 84,000	€ 85,000	€ 59,000
Hungary	€ 3,200 - 6,200	€ 5,800 – 11,000	> € 11,000	-

It is a key objective of our empirical research to gather up-to-date data on the costs of EMAS registration and implementation to participating organisations.

Up-to-date data on the costs of EMAS is needed

2.5.1. Factors Influencing Costs

The literature does not reveal a great deal regarding the types of variables that influence the costs of EMAS to registered organisations. This will be an important gap to address under the current study.

Evidence suggests that the presence of internal environmental management skills reduces the costs of registration and implementation

An obvious variable will be the costs of hiring an external verifier, something that varies between Member States depending on the cost of labour and the number of firms engaged in such activities. Another variable that influences the cost of registration is the time taken to achieve EMAS registration. 64% of registered sites take more than 10 months to implement the scheme, with the environmental management system and the “environmental review being most time consuming” (EVER,

2005). In their survey of the German manufacturing industry Rennings *et al* correlated firm size and the existing of an environmental department within a firm as a key factor in implementing an EMS, suggesting that these elements may reduce costs (Renning *et al*, 2003). According to an American study about costs for implementing EMS, publically traded facilities had stronger complementary capabilities prior to EMS adoption and therefore lower adoption costs. By contrast government facilities and privately owned enterprises had fewer capabilities and accrued higher implementation costs (Darnell and Edwards, 2006).

Incentives offered by the member states often serve to reduce the costs of implementation and maintenance and are briefly considered in the section below.

2.6. Member State Incentives for EMAS Registration

This section provides a brief summary of the kinds of incentives offered by Member States to support EMAS registration. Table 2.6 below provides a brief summary of the types of incentives for EMAS registration that are employed in the Member States.

Incentives take a number of forms, those of a regulatory nature and those which aim to promote wider uptake of the scheme through public procurement, funding support and technical and information support.

Table 2.6: Member State Incentives for EMAS Registration

Types of incentives used in Member States
Regulatory relief
Wider uptake through public procurement
Funding support to organisations looking to register with EMAS
Technical support
Information support

Regulatory relief aims to simplify legal formalities and procedures and to avoid duplication of effort in reporting between mandatory obligations and those under EMAS. Examples of regulatory flexibility from some Member

Strong evidence of regulatory relief as a powerful incentive

States include streamlined permit applications for permits, reduced reporting and monitoring requirements, consolidating reporting and monitoring requirements and reduced inspections. Wätzold et al compared regulatory relief in France, Germany, the Netherlands and the United Kingdom and concluded that regulatory relief can increase participation in EMAS, when granted exclusively to EMAS registered companies. Glachant et al have reviewed the same countries and found the granting of regulatory relief to registered companies to be the most powerful participation leverage (Glachant *et al.*, 2002).

The use of EMAS as a criterion in public procurement has been strengthened by the implementation of Directive 2004/17/EC Directive on Public procurement.⁶ The Directive includes a technical selection criterion whereby bidders have to show, in appropriate cases and if it is requested by the public authorities that they can apply environmental management measures when executing specific works or service contracts. In these cases the Directive states that EMAS or any other equivalent environmental management system could be provided as evidence of compliance with the requirement to adopt environmental measures.

Several Member States provide funding support to organisations looking to register with EMAS. In particular, Article 11(1) of the Regulation emphasises the need for Member States to guarantee the participation of SMEs in the scheme. One way of doing this is by facilitating support funds and ensuring reasonable registration fees. Areas that are currently targeted for financial support include: cost subsidies for new registrants; tax breaks on purchases for improving environmental performance; special funds for technical assistance, staff training and external consulting; reduced registration fees; and preferable conditions with bankers and insurers for EMAS-registrants.

Currently, the main areas of technical support provided by Member States include: educational programmes in co-operation with relevant associations; phased implementation programmes especially designed for SMEs; synergies involving all the actors in environmental management systems; short- and long-term investment by the authorities to educate and train professionals through specialised programmes; and guidelines and toolkits for specific sectors.

Programmes to provide information to potential registrants include: customised information programmes; information campaigns aimed at specific interest groups and the general public; and conferences and workshops to allow for an exchange of experiences and best practices.

Organisations have identified green public procurement as a key incentive for EMAS

The EVER report investigated the kinds of incentives that organisations would like to see associated with EMAS registration. The report concluded that the majority of organisation would like to see permanent institutional measures, the most favoured being fiscal incentives and regulatory and relief. Information and promotion campaigns for EMAS by public institutions and the inclusion of

EMAS in green public procurement policy were also seen as important. Many organisations flagged the importance of upgrading EMAS to internationally recognised scheme is considered by many companies and stakeholders as another powerful incentive. Surprisingly, direct funding and technical support were not prioritised (EVER, 2005).

2.7. Conclusions

The key conclusions of this literature review concern the costs and benefits associated with EMAS that have been identified in the literature and the robustness of the associated evidence. The conclusions of the literature review provide a sounding board against which the results of our

⁶ Directive 2004/17/EC of the European Parliament and of the Council of 31 March 2004 coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors, Article 52.3.

empirical evidence are to be judged.

Conclusions on drivers:

1. Studies investigating drivers for EMAS registration found organisational size to play a role in the private sector, with larger organisations taking up EMAS more than smaller organisations.
2. Expectations of cost savings are identified as an important driver for the manufacturing sector.
3. Evidence was found for the following drivers in the private sector: trade linkages with Member States where EMAS has a high profile; internal stakeholders; securing external legitimacy and achieving regulatory compliance.
4. Evidence suggests that public sector organisations seek EMAS registration in order to secure legitimacy amongst stakeholders.

Conclusions on barriers:

1. In terms of external barriers, numerous studies cite the costs associated with certification and registration as a key barrier to EMAS registration, of particular relevance to SMEs. Additional external barriers for which evidence was found include a lack of consumer awareness, poor feedback, and a lack of recognition by public institutions.
2. Internal barriers identified by the literature include a lack of human resources, specific skills and capacities, and low motivation.

Conclusions on benefits:

1. Persuasive evidence has been found for a number of benefits arising from EMAS registration, including reduced costs for raw materials and waste management, achieving regulatory compliance, competitive advantage, regulatory relief (manufacturing sector) and improved personnel motivation. It will therefore be interesting to explore how these benefits vary according to the characteristics of organisations, such as size, sector and commercial versus public.
2. There is less evidence supporting concrete benefits from risk minimisation, making this an important area for further investigation.
3. In terms of relations with external stakeholders, this seems to play a key role for public authorities implementing EMAS. There is less evidence to show that this is an important benefit for commercial organisations, in terms of their relations with regulators and the members of the public living in proximity to commercial activities.

Conclusions on costs:

1. While a number of studies discuss the sources of the various costs associated with EMAS registration, in terms of concrete numerical data on costs, there is little available in the literature. This represents a key area where we hope to gather up-to-date data across Member States and from a range of participating organisations.
2. Evidence in the literature suggests that the presence of internal environmental management skills reduces the costs of registration and implementation to an organisation.

Conclusions on incentives:

1. Regarding the kinds of incentives available to promote EMAS uptake, Member States offer regulatory relief, green public procurement, funding support, technical support and information support. In particular, evidence has been found of the power of regulatory relief as successful incentive promoting EMAS registration. It will therefore be interesting to investigate which other incentives serve to alter the local context for EMAS implementation and affect the costs and benefits. In addition, linkages between public awareness and benefits through competitive advantages will be scrutinised for any correlation.

3. Research Methodologies

The study required the project consortium to contact EMAS registered organisations, as well as those that had recently withdrawn from registration, in order to gather information on the costs and benefits of registration and the kinds of incentives that make EMAS more attractive. This objective demanded a methodology that could both access and explore the internal management procedures of organisations, and review factors in the external environment that relate to EMAS registration. In addition, research tools were required to differentiate between the different sectors and categories of organisations that participate in the scheme, be they public or private, micro or large. This approach allowed the consortium to first identify trends, whereby organisational characteristics are linked with costs and rewards, and to then unpack the mechanisms behind these trends. As such, our research tools were specifically tailored to collect both quantitative data and qualitative information in order to build a robust weight of evidence.

The consortium has employed a two-tiered approach to information gathering, by using an online questionnaire to gather quantitative data from all registered organisations, followed by in-depth interviews with a target group of organisations to obtain qualitative data. To complement these materials, the project consortium also conducted interviews with officials responsible for EMAS registration in the Member States.

Section 3.1 below describes the methodologies that were employed in designing and distributing the questionnaire, as well as the approach taken towards data analysis. Section 3.2 then outlines the methodology employed for conducting interviews with both organisations and Member States competent bodies, as well as detailing the approach to the analysis of this qualitative data.

3.1. Questionnaire survey

3.1.1. Research methodologies

The survey of organisations was undertaken by RPA, using a structured questionnaire to obtain quantitative and qualitative data regarding the internal resources, structures and procedures required to implement EMAS, as well as on resulting costs and benefits realised. The questionnaire was designed in ‘multiple choice’ format, with a range of possible answers provided for each questions in order to facilitate the speed and ease with which consultees can complete the questionnaire. The questionnaire was designed for completion online. However, given the time necessary to complete the questionnaire and a possible reluctance of stakeholder to insert their responses on-line, there was an option to download the questionnaire and to send it by e-mail to the contractor. The questionnaire was available only in English, but with the option for respondents to reply in any of the main EU official languages.

A draft questionnaire was first developed and agreed with the Commission. It was then pilot tested with environmental managers in five organisations in the UK and Spain, to ensure that the questions were clearly stated and relevant. Following testing, the questionnaire was revised to reflect input from the pilot phase. The questionnaire was then be finalised and sent to the Commission for approval. The Word version⁷ of the questionnaire that was completed by organisations is included in Annex I to this report.

Following acceptance of the questionnaire by the Commission, it was translated into an on-line format. An invitation to complete the online questionnaire was sent by e-mail to all organisations currently

⁷ Because of the nature of the on-line questionnaire system, the on-line format was slightly different from the Word version (e.g. where there was an option to specify ‘other’ as a response, the details needed to be added in a separate text box).

registered with EMAS, together with sites that had recently withdrawn from EMAS, using contact details supplied by the EMAS help-desk. The original plan was that the invitation would be accompanied by a letter from the Commission stating the purpose of the consultation and confirming that it is an official EU project. However, the letter drafted by the Commission focused on the approach to be used to consult Member State authorities and did not mention the online survey, so this was not included with the invitation, to avoid confusion.

Despite some initial problems with the email system (including multiple invitations to some organisations which had a number of different sites registered with EMAS), invitations were successfully sent to all organisations on 10 March 2009. The invitation asked for questionnaires to be completed by 27 March 2009; however, it asked organisations that would like to respond to this survey but were unable to do so before 27 March 2009, to inform us of this. Several organisations indicated that they would like longer to respond; the on-line survey was therefore kept open for a further two weeks for these respondents.

The number and nature of responses was monitored as the study progressed; following the additional two-week period, reminders were sent by e-mail to non-respondents, offering them another opportunity to respond (by 30 April 2009). This resulted in some further responses.

3.1.2. Statistical analysis of quantitative data from the survey with organisations

The quantitative data from the questionnaire responses by organisations were generated automatically by the online questionnaire site as responses were received. The data from responses were downloaded into a series of spreadsheets, which provide analysis of the responses to each question by company size, turnover and sector. A summary spreadsheet was prepared which provided the percentage response to each question.

Information from these spreadsheets was used to prepare a series of summary tables for this Final Report. The results from the responses received are discussed in Section 4 of this report and a series of more detailed tables are included in Annex II.

3.2. Interviews with organisations

3.2.1. Research methodology

The first step in the interview methodology was to identifying the best organisations to interview. This required a detailed assessment of the responses provided by organisations under the survey. Although the survey software provides statistical analysis of the responses, analysis of other factors needed to be completed by hand to ensure that interesting potential interviewees were not missed.

Our methodology for identifying organisations for interview was based on a three-pronged approach. Firstly, the list needed to fulfil number of criteria, by including organisations:

- from Member States that provide the bulk of EMAS registration, namely Germany, Austria, Italy, and Spain;
- from Member States where EMAS registration is low, namely UK, Netherlands, France; and
- from new Member States, namely Poland and the Czech Republic;
- from a Nordic Member States, namely Denmark;
- that were previously EMAS registered but have subsequently de-registered;
- that represent a range of sectors, including industrial and service, public and privates; and

- that present a range of categories, including micro, small, medium and large.

Secondly, we drew on the statistical analysis of quantitative data generated by the questionnaires to identify individual organisations that demonstrated either particular success, or high costs in implementing EMAS, or where innovative implementation procedures are described, or where incentives were important in the uptake of EMAS.

Finally, we reviewed the list of organisations that were recently been awarded the European EMAS Award, in particular those receiving the award on 20th November 2008, in order to target organisations that have successfully implemented EMAS and reaped significant benefits.

We initially planned to conduct follow-up interviews with 30 organisations and we developed a list of 30 organisations plus 10 reserves, in case of non-availability, that fulfilled the criteria and that were selected to be contacted. Table 3.1 presents the selection of 40 organisations. The table indicates the size of the organisation (i.e. S – small, M – medium, L – large, micro), whether the organisation is public or private, the Member States in which the organisation operates, and a brief summary of the reasons why the organisation was selected.

It is important to note that the table does not provide names for the organisations, but simply numbers them and provides information on their characteristics and reasons for selection. This is because the questionnaire specifically indicated:

“Please note that your responses will be treated confidentially and care will be taken to ensure that specific responses cannot be linked to individual organisations”

Table 3.1: List of organisations that were contacted for interview

No.	Size	Private or Public	Member State	Reasons for Selection
1	L	Private	Various - HQ FIN	18 Site across EU, 16 EMAS registered. EMAS currently under review by country. Issues highlighted include: diff implementation of EMAS across EU. EMAS promotion/pub campaign but made no difference to customers etc.
2	M	Private	Spain	Good detailed response, particularly regarding internal systems, legislative compliance and stakeholder issues.
3	S	Public	Italy	Good responses, mentioning importance of setting a good example for environmental practice to region/stakeholders as key benefits of EMAS. A comparison of their experience could prove valuable
4	M	Public	Germany	
5	S	Private	Cyprus	Response indicates substantial efficiency and resource savings possibly resulting from EMAS; response from smaller MS.
6	M	Public	Italy	EMAS helped establish car share scheme, saving fuel costs etc. good example of potential in EMAS
7	M	Private	Greece	Good detailed response from organisation not currently registered .
8	M	Public	Czech	One of the best public authority responses with quantified costs and benefits.
9	M	Private	Czech	Response indicated importance of innovation, specifically green products for business, also good overall response from smaller MS.
10	S	Private	Germany	EMAS award nominee, in the private service sector, good overall response.
11	L	Private	Denmark	Nordic MS, large company nominated for EMAS award.
12	L	Private	UK	Good response from large company with sites across Europe.
13	M	Private	Portugal	Service sector response from south European MS, good overall response to questionnaire with different perspective to many others (i.e. reference to water environment and not land issues)
14	M	Private	Germany	Good response from the German private sector
15	M	Private	Germany	Good response from the German private sector

No.	Size	Private or Public	Member State	Reasons for Selection
16	L	Private	Sweden	Good response from large Swedish private sector
17	M	Private	Ireland	Good response from an EMAS award nominee.
18	L	Public	UK	UK public authority with good overall response, currently not registered , but provides reasons for withdrawal and incentives needed.
19	M	Public	Denmark	Nordic organisation not currently registered .
20	L	Private	France	One of only two responses from France fully completed.
21	M	Private	Hungary	EMAS nominee in waste management sector. Registration driven by customer, supply chain and competitor motives. States that ISO 14001 no longer has the same value as before, driving EMAS adoption.
22	M	Private	Norway	Representative of food, drink and tobacco sector. States that six incentives were available to it but only took up four.
23	S	Private	Italy	Small Italian company; response focuses on risk management benefits and motives for EMAS plus stakeholder transparency.
24	Micro	Private	Italy	Good general response from micro enterprise, interesting costs for registration
25	Micro	Private	Latvia	Good response from micro enterprise in new Member State. States that numerous incentives were available but not taken-up.
26	L	Private	Germany	Present in 15 Member States old and new (manufacturing), plus many non-EU countries. Mentions that reduced inspection intervals and fees were promised by authorities but promises not kept.
27	S	Public	Spain	Good costed response by small Spanish public authority, to compare/contrast with private sector.
28	M	Public	Romania	Only Romanian response, emphasis on communication of actions to stakeholders and environmental objectives through EMAS. Incentives available but not taken up
29	L	Private	Netherlands	One of only a handful of Dutch responses. Good response from manufacturing company, but from large organisation
30	S	Public	Austria	Good response from small public utility company. One of few companies to state that contract bids more competitive/successful due to EMAS.
31	S	Public	Italy	Good responses from Italian and German Public Authorities, some mentioning importance of setting a good example for environmental practice and image to region/stakeholders as key benefits of EMAS.
32	M	Public	Germany	
33	L	Private	Non-EU	Good for non-EU perspective, both have sites inside and outside the EU. One was nominee for EMAS awards.
34	L	Private	Non-EU	
35	M	Public	Latvia	New MS response
36	L	Public	Denmark	Two closely related institutions. Interesting to compare and contrast experience with EMAS. One nominated for EMAS awards
37	L	Public	Denmark	
38	S	Public	Italy	Service sector response from south European MS, good overall response to questionnaire with different perspective to many others (i.e. reference to water environment and not land issues)
39	L	Public	Belgium	EMAS award nominee, good overall response.
40	M	Public	Ireland	Good responses from Ireland

In contacting organisations, we drew on the contact details that were supplied in the completed questionnaires. Organisations were initially contacted by email to request an interview to follow up on some of the issues that they had mentioned in completing the questionnaire. Reminder emails were sent where the first email met with no response, and finally we contacted the organisations by telephone.

In practice, we were only able to complete 22 interviews. We repeatedly contacted every organisation on the list plus all the reserves, but many were simply not interested and never responded or said they did not have time and the questionnaire contained all relevant information. This is a result in itself,

indicating the comprehensive nature of the questionnaire and the detailed responses provided. A table showing those organisations with which we did conduct interviews is provided in Section 4.

Semi-structured questionnaires were used to guide the interviews, with discussions based on the topics identified for the questionnaires. In preparing for the interviews, we adapted the semi-structured questionnaire to suit the specific organisation to be interviewed, based upon their questionnaire response, and send it to respondents in advance of the interview in order to allow them to gather evidence and materials. An example of the semi-structured questionnaire used to guide interviews with organisations is included in Annex II.

When conducting the interviews, wherever possible we spoke with respondents in their native tongue. As such, interviews were undertaken in English, French, German, Hungarian Greek, Czech, Swedish, Italian and Spanish.

During each session, the interviewer took detailed notes of the discussion under the relevant question. This document then formed the basis of a report of each interview. In cases where the responses were unclear or additional details were required, a short summary report was sent back to the interviewees for validation. This was done to ensure that our understanding of the issues and comments raised by the interviews was accurate and correct, before drawing any conclusions. A cross-check with the relevant questionnaire responses was also undertaken to ensure that the answers received were consistent, if not, organisations were asked for reasons why this was the case. These reports constitute the primary evidence that has then been fed into data analysis.

3.2.2. Data analysis

Discussion with organisations provided additional qualitative and quantitative information on intra-firm factors that affect the costs and benefits of EMAS registration, such as the size and nature of organisations, cultural practice and employee engagement, as well as exploring external environmental factors, including public awareness of EMAS and national support systems for registration. In some cases, the qualitative data provided some of the most important information, for example, by providing estimates of the magnitude of specific impacts or identify reasons for significant changes that might have occurred in EMAS implementation and industry attitudes towards its adoption in a particular supply chain.

Once each interview summary had been completed, a systematic analysis of each response was conducted to identify evidence to support the conclusions of the questionnaire survey, as well as examples of the circumstances and situations where organisation's experiences differed from the general results of the survey. Reasons, for any disparity were then sought and presented alongside examples of general evidence gathered in summary boxes within this report.

In investigating trends we looked across a number of criteria that we had already applied in the analysis of questionnaire responses. Firstly, we analysed interview responses with an eye to investigating trends in organisations that emerge on the basis of organisation size, i.e. micro, small, medium and large. Secondly, we looked at trends that emerge depending upon the sectors, and in particular whether they are public or private. The process involved discussion and fertile exchange in identifying common trends, cross-checking data and ensuring that the approach used in analysing the data sets was coherent and consistent.

The reports of interviews with organisations were used to supplement the information obtained from questionnaires on the factors affecting the scale of costs and benefits associated with EMAS and to provide further detailed breakdown of specific cost and benefit areas.

3.3. Interviews with Member State Competent Bodies

3.3.1. Research methodology

Contact details for the officials responsible for EMAS registration were drawn from the EMAS pages of the Europe Commission website. A list of the individuals identified as responsible for EMAS in the Member State Competent Bodies is included in Annex I. We contacted each of these individuals firstly by email and then by telephone to conduct an interview.

We conducted interviews with officials from all Member States except Italy, Slovenia and Sweden. In the cases of Slovenia and Sweden, our multiple attempts to contact individuals both by email and by phone were unfortunately not successful. We were able to speak with the Italian competent body and they chose to forward us a recent report on the implementation of EMAS in Italy rather than participating in an interview.

We used the semi-structured questionnaire included in Annex II in carrying out the interviews. The questionnaire was sent to the official in advance, translated into their language where that was requested and our capacities permitted it. We then took extensive notes during interview to generate an interview report. Where relevant, we then followed up with email exchange to clarify particular points and request additional information.

3.3.2. Data analysis

In analysing data from the interviews with Member States, we looked at practices in each of the Member States and sought to link these trends with external factors present in those Member States. We cross checked information from organisations with data from interviews with Member State Competent Bodies, with the aim of confirming the influence of country-specific factors.

The technique employed for the analysis of qualitative data from interviews with Member State officials was to develop a number of topic specific matrices where the responses from each Member State can be inserted. This allows for a systematic visual comparison of the data emerging from each Member State. Topics for which matrices were developed include:

- Assistance and promotional activities
- Incentives to register
- Barriers to registration:

The matrices are provided in Section 4, where they are used to present our results in a systematic fashion.

4. Results

4.1. Results from survey and interviews with organisations

This section summarises the analysis of the questionnaire responses from and interviews with organisations. More detailed information on the questionnaire responses is presented in a series of tables in Annex III.

4.1.1. Number and Nature of Responding Organisations

Questionnaire responses

By the end of the consultation exercise, 1058 of the invited organisations had accessed the online questionnaire; 769 of these organisations completed at least some of the questions, whilst around 426 provided (more or less) complete responses. In addition, email responses were received from 21 organisations. This represents complete responses from more than 10% of EMAS registered organisations. This is a good response rate, based on previous experience, given the nature of the information requested and the range of organisations consulted.

Table 4.1 shows the breakdown of responses by organisations size; 60% of responses were from micro, small and medium organisations, with 40% from large organisations. This is a much higher response rate from smaller organisations than is usually achieved in surveys. However, as Figure 4.1 shows, responses are still biased towards larger organisations. We take account of this in our statistical analysis. Table 4.1 shows how our survey sample relates to all EMAS registered organisations.

Figure 4.1: Organisation Responses by Size

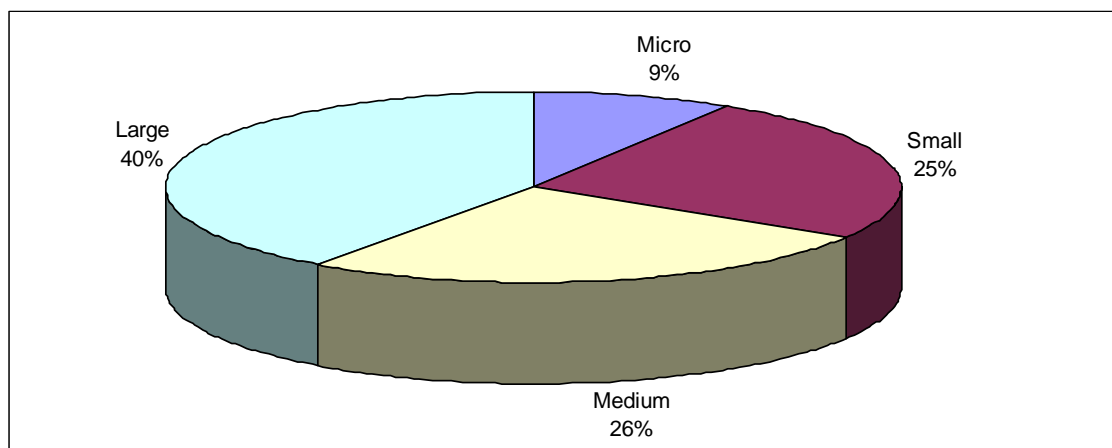


Table 4.1: Organisation Responses by Size

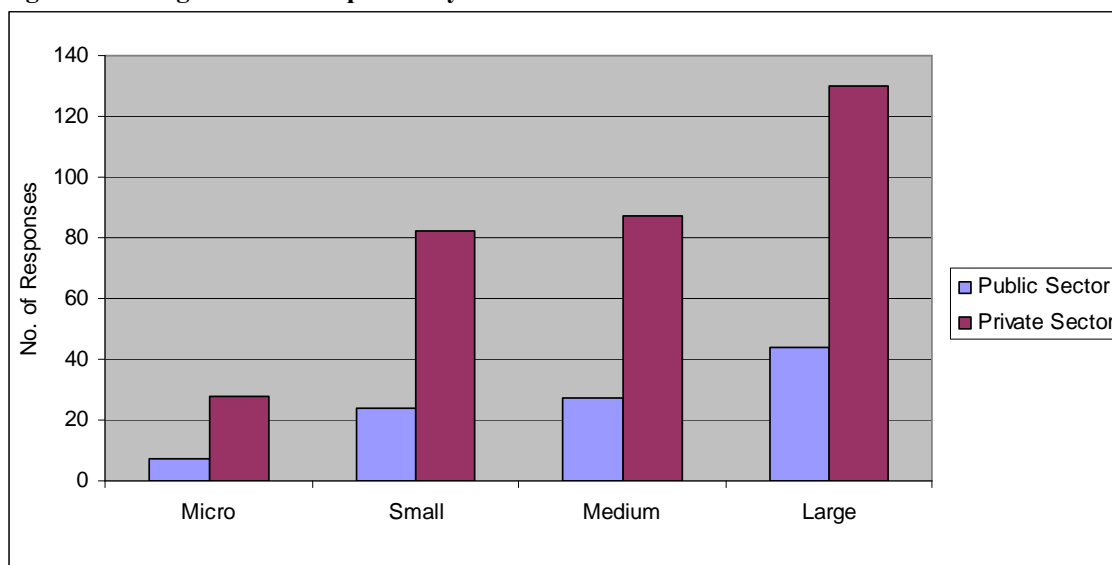
Organisation Size*	Number of Respondents	% all EMAS organisations
Micro	40	5%
Small	114	8%
Medium	119	10%
Large	182	20%
Total	455	11%

*Micro (10 or fewer employees), Small (50 or fewer employees), Medium (250 or fewer employees), Large (more than 250 employees)

Responses were received from EMAS registered organisations in most EU Member States⁸, with the exception of Estonia, Malta, Slovakia and Slovenia. As expected, the highest numbers of responses are from Member States with the largest numbers of registered organisations – Spain (23% of response), Italy (27%) and Germany (16%). Responses have been received from newer Member States (Czech Republic, Latvia, and Romania) and from small Member States (Cyprus and Luxembourg). The full breakdown of responses by Member States is given in Annex III

Respondents included both public (24%) and private organisations (76%). Figure 4.2 illustrates the variation of responses by public/private sector and size of organisation. The private organisations represented a range of different sectors (although a number of respondents omitted to indicate their NACE code). The highest percentage of responses came from the chemicals (DG24) and other services (O90-93) sectors. Again, the full breakdown is given in Annex III.

Figure 4.2: Organisation Responses by Size and Public/Private Sector Affiliation



Whilst most of the respondents were still registered with EMAS, we received responses from 25 organisations that were no longer registered.

Interviews

A summary of the 22 organisations interviewed by characteristics and reason for selection is provided below.

⁸ There are no EMAS registered organisations in Bulgaria or Lithuania

Table 4.2: List of Interviewed Organisations

No.	Size	Private or Public	Member State	Reasons for Selection
1	L	Private	Various - HQ FIN	18 Site across EU, 16 EMAS registered. EMAS currently under review by country. Issues highlighted include: diff implementation of EMAS across EU. EMAS promotion/pub campaign but made no difference to customers etc.
2	M	Private	Spain	Good detailed response, particularly regarding internal systems, legislative compliance and stakeholder issues.
3	S	Public	Italy	Good responses, mentioning importance of setting a good example for environmental practice to region/stakeholders as key benefits of EMAS. A comparison of their experience could prove valuable
4	M	Public	Germany	
5	M	Private	Greece	Good detailed response from organisation not currently registered .
6	M	Public	Czech	One of the best public authority responses with quantified costs and benefits.
7	M	Private	Czech	Response indicated importance of innovation, specifically green products for business, also good overall response from smaller MS.
8	S	Private	Germany	EMAS award nominee, in the private service sector, good overall response.
9	L	Private	Denmark	Nordic MS, large company nominated for EMAS award.
10	L	Private	UK	Good response from large company with sites across Europe.
11	M	Private	Portugal	Service sector response from south European MS, good overall response to questionnaire with different perspective to many others (i.e. reference to water environment and not land issues)
12	M	Private	Germany	Good response from the German private sector
13	M	Private	Germany	Good response from the German private sector
14	M	Private	Ireland	Good response from an EMAS award nominee.
15	L	Private	France	One of only two responses from France fully completed.
16	M	Private	Hungary	EMAS nominee in waste management sector. Registration driven by customer, supply chain and competitor motives. States that ISO 14001 no longer has the same value as before, driving EMAS adoption.
17	M	Private	Norway	Representative of food, drink and tobacco sector. States that six incentives were available to it but only took up four.
18	Micro	Private	Italy	Good general response from micro enterprise, interesting costs for registration
19	S	Public	Spain	Good costed response by small Spanish public authority, to compare/contrast with private sector.
20	M	Public	Romania	Only Romanian response, emphasis on communication of actions to stakeholders and environmental objectives through EMAS. Incentives available but not taken up
21	M	Private	Sweden	Good response from small utility company. One of few companies to state that contract bids more competitive/successful due to EMAS.
22	L	Private	UK	Good response from a previously EMAS registered organisation, including the reasons for not re-registering in 2008

4.1.2. Motivation for Seeking EMAS Registration

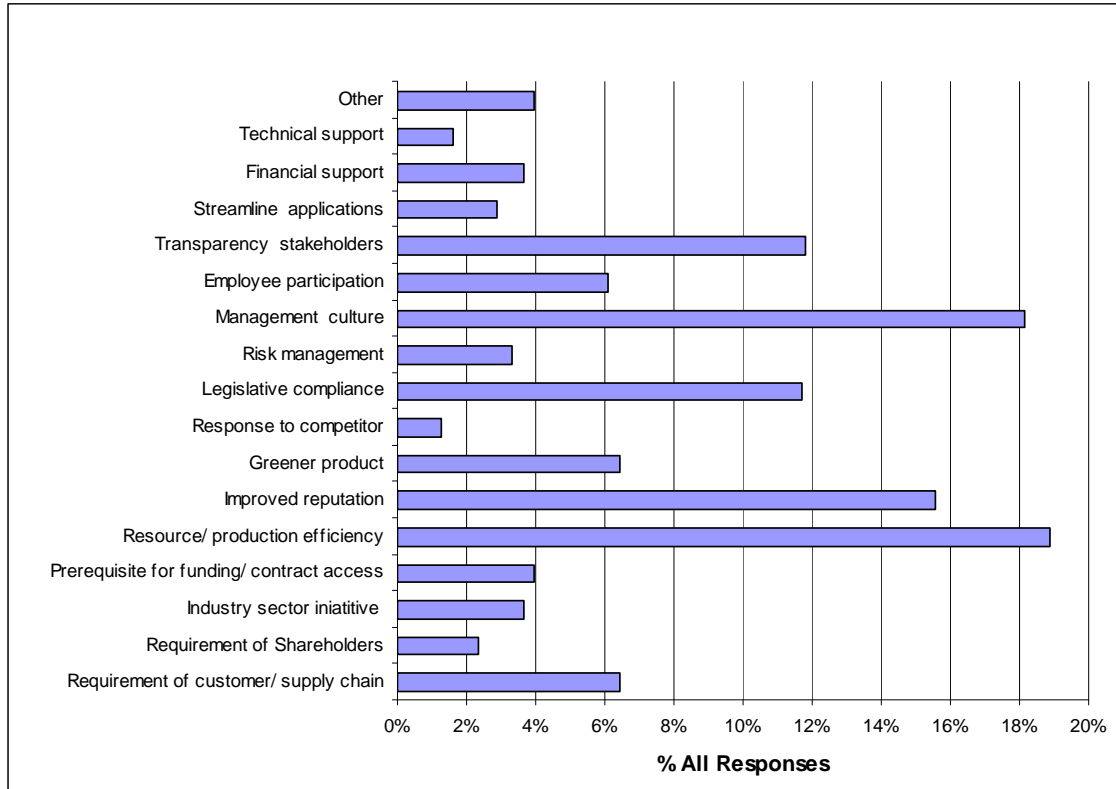
Respondents were asked to indicate their three most important reasons for seeking EMAS registration, from a menu of choices covering both internal and external factors. The reasons most frequently selected were:

- wish to improve resource and production efficiency (19% of all preferences);

- internal management approach/culture (18%), and
- improved reputation (16%);

Other factors identified as significant included transparency with stakeholders/local community and improved legislative compliance (both 12% of preference), as shown in Figure 4.3.

Figure 4.3: Motivation for EMAS Adoption (% All Responses)



Only 4% of respondents cited public financial support as a motivation for seeking registration and only 2% cited public technical or informational support. A further 4% of respondents cited ‘other’ reasons for seeking EMAS registration. This included, for example:

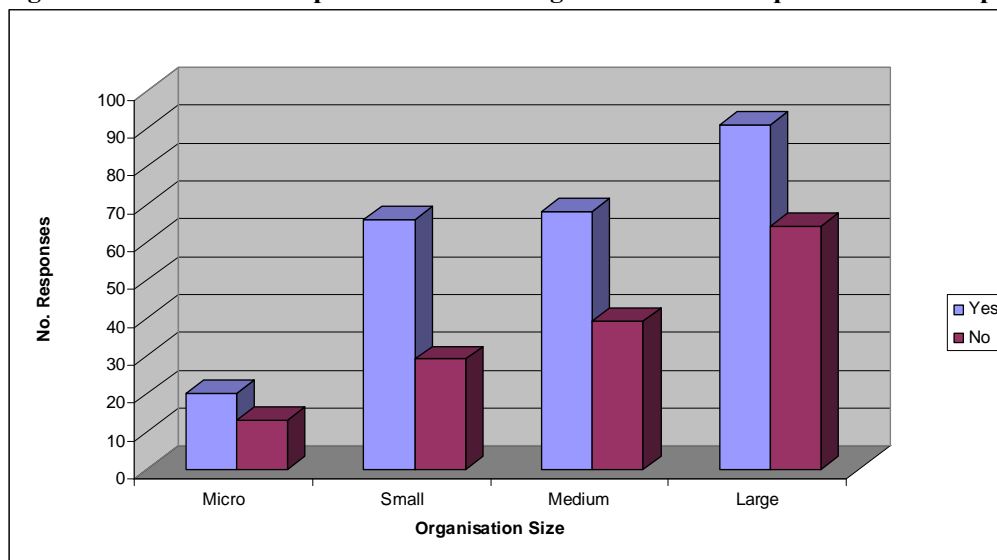
- providing a positive example to other organisations of how to manage environmental issues (a main motivation for public sector organisations);
- a desire to protect and improve the local environment; and
- less regulation by authorities, with one respondent highlighting that it hoped that adopting EMAS would safeguard the continued operation of a site as a result

The responses did not vary significantly by Member State, but there was some variation by organisation type. Manufacturing organisations tended to allocate the greatest importance to improving resources and production efficiency, whilst organisations closer to the consumer were more likely to indicate stakeholder transparency or supply-chain pressures as a key motivation.

We also asked whether the consistency of EMAS with Member State legislation was an important reason for seeking registration; 31% of respondents to this question said yes, whilst 69% said no. A slight variation by organisation size also emerged, with larger organisations more likely to view consistency as important. Respondents were also asked whether they considered EMAS to be a

requirement of management best practice; over 60% said yes, as shown by figure 4.4. A number of suppliers to the automotive manufacturing sector indicated that customers liked the fact they have EMAS and an integrated management approach to the environment, health and safety, which can be integrated with the customer's own system. For this reason, customers often preferred EMAS over ISO 14001.

Figure 4.4: Number of respondents considering EMAS to be a requirement of best practice



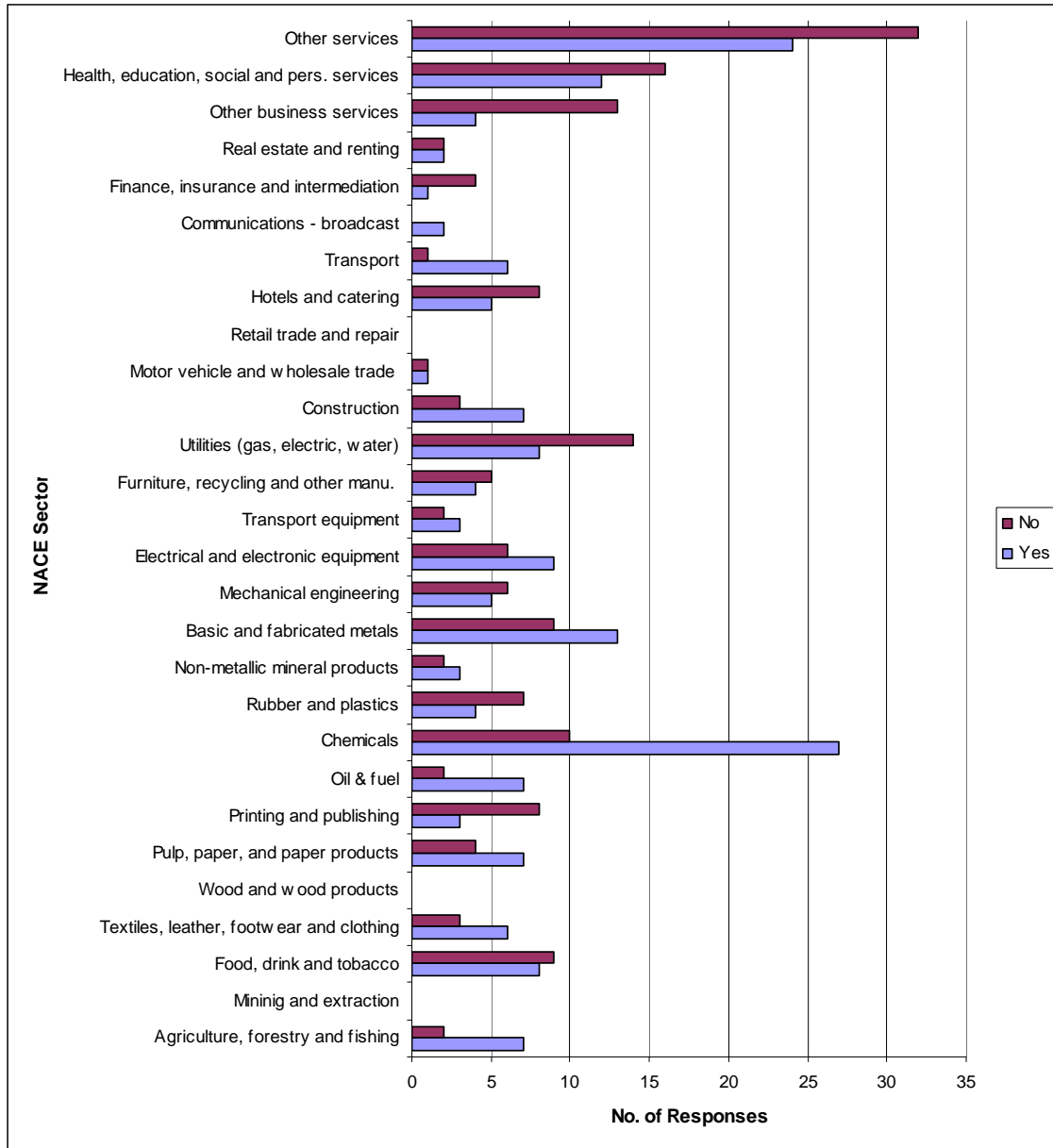
Around half (53%) of the organisations responding to the questionnaire had an environmental management system in place prior to EMAS. Even amongst micro organisations, over a third had such a system in place, whilst for large companies the figure was 63%. There were some differences between Member States; the proportion of organisations with environmental management systems prior to EMAS was below average for Austria, Germany, the Netherlands and Portugal and above average for Italy, Spain and the UK. Interestingly, the number of organisations with an EMS prior to EMAS did vary considerably between sectors as depicted in Figure 4.5.

The overwhelming majority (86%) of respondents were certified to ISO 14001 as well as EMAS. The proportion was slightly lower for micro organisations (71%) and German organisations (80%) and higher for Spanish (96%) and UK (94%) organisations. Respondents certified to ISO 14001 were asked to give their reasons for also seeking EMAS registration; examples of responses included:

- to increase transparency with stakeholders;
- EMAS has more obligations and [requires greater] environmental responsibility;
- requirement of client;
- EMAS more adapted to needs than ISO 14001 (considered inflexible); and
- EMAS was adopted first, ISO 14001 later for the world market.

More examples of responses are given in Annex III.

Figure 4.5: Organisations Implementing an EMS Prior to EMAS by Sector



Interview Responses – Motivation for EMAS Uptake

“Change behaviour in society, want to believe that the companies that work for us do it for environmental reasons” (Private medium organisation, Portugal)

*“Like to **show surrounding neighbours** that we are concerned about environmental issues ...[and] lead on this kind of issue” (Public micro organisation, Germany)*

*“Competitors already had certification systems and so had to develop one. **[Customer]** specifically stated that EMAS was better than ISO 14001, and would require further documentation from firms with ISO 14001 while EMAS covered everything”. (Private medium organisation, Germany)*

*“ISO 14001 requires no public reporting and is therefore not regulatory consistent or compliant with necessary requirements. **IPPC** is regarded as the principle motive for introducing EMAS in addition to ISO 14001”. (Private large organisation, Ireland)*

*“In 2003-2004, there was a requirement for an **operating license** for installations of high/medium noise generation level. This required registration with a quality system and this was one of the drivers behind seeking registration with EMAS”. (Private large organisation, Greece)*

*“Continuous improvement requirements are interesting in EMAS scheme... liked the idea of providing detailed information about targets and **communication to the public.**” (Private large organisation, Finland)*

*“in the new economic context, companies have to take more **corporate social responsibility (CSR)**, and environmental responsibility is part of CSR and one tool for this is EMS (EMAS in particular)” (Private medium organisation, Hungary)*

*“We wanted to undergo the process ourselves so that we gain first hand experience with the process from the perspective of the applicant in order to be able to **improve the support services** that we provide to applicants.” (Public large organisation, Czech Republic)*

4.1.3. Reasons for Withdrawal from EMAS and Factors that would Encourage Re-registration

Detailed responses were received from 25 organisations that are no longer EMAS registered. A number of other such organisations responded to the email invitation by saying that the questionnaire was not relevant to them as they were no longer registered.

Respondents who had withdrawn from EMAS were asked to score on a scale of 1 (great importance) to 5 (no importance) their reasons for withdrawal, from a menu. The reason with the highest score amongst respondents was that the benefits of EMAS were unclear or insufficient to justify registration (26% identified this as of great or significant importance). The next highest scored reasons were that other environmental management systems were preferred or management culture affected decision making (17% and 14% of respondents scored these as of great or significant importance respectively). Interestingly, 22% of respondents indicated that the cost of registration was of little or no importance to their decision. Figure 4.6 shows these results, with Figure 4.7 highlighting some of the differences between public and private organisations; unclear or insufficient benefits are the clear drivers of de-registration in the private sector, followed by a preference for other environmental standards (e.g. ISO 14001).

Figure 4.6: Most Important Reasons for De-registration

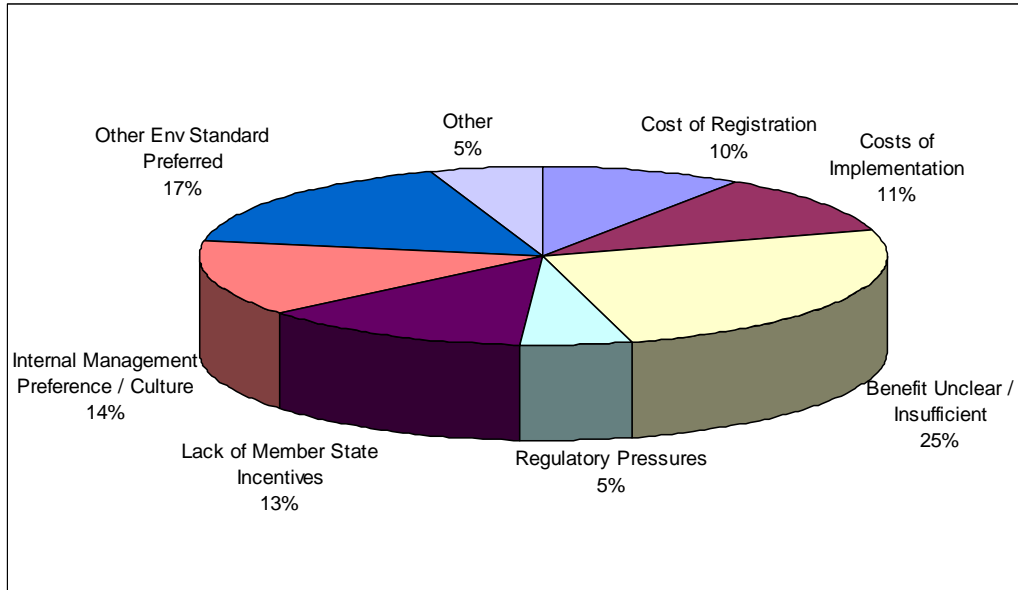
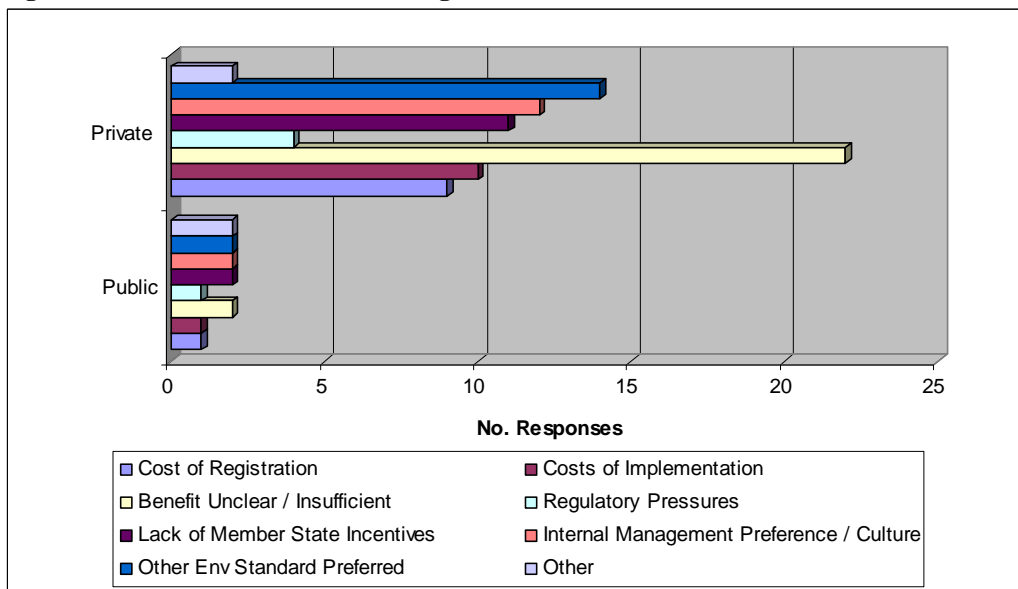


Figure 4.7: Reasons for EMAS De-registration in Public and Private Sectors



Interview Responses – Reasons for Withdrawal

*“EMAS is **not known and not easily explained** or imparted to others. People are not interested” (Private small organisation, Germany)*

*“The main criterion for registration was to attract the European customer...However, **customers don’t care**, ISO is more recognised”
(Private medium organisation, Denmark)*

*“interest has been decreasing after 10 years of EMAS registration, **costs** of printing the environmental statement are too high...less than 50% would go for EMAS now, since the final verification is not compulsory anymore they don’t really see the benefit of it” (Private large organisation, Germany).*

*“EMAS is **not known outside Europe**” (Private large organisation, Germany).*

*“**Low client value** and requirement for EMAS registration ... widening of corporate responsibility activities”
(Private large organisation, UK)*

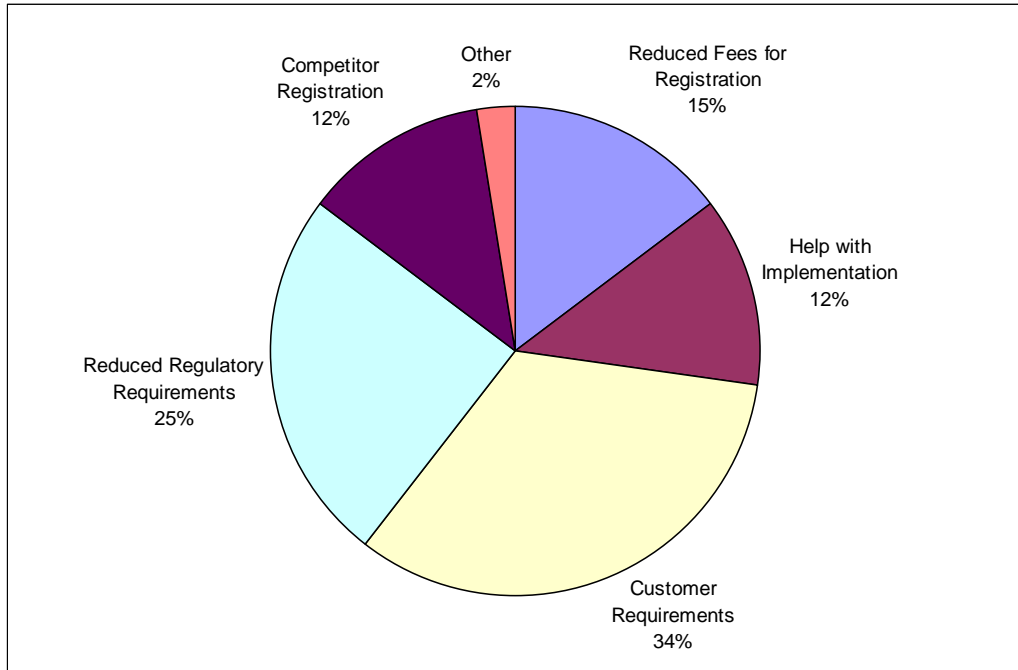
*“**cost-benefit** analysis made by new UK owners of company did not persuade new owners to carry on with EMAS”
(Private large organisation, UK).*

Twenty percent of respondents indicated that ‘other reasons’ were of most importance in their decision to withdraw from EMAS. Reasons cited included:

- no longer supply customer that required EMAS registration;
- ISO 14001 more often requested by customers and mentioned as Best Available Technique (BAT) in the Directive on Integrated Pollution Prevention and Control (Directive 91/61/EC); and
- lack of internal capacity to support the process.

Respondents that had withdrawn from EMAS were also asked what factors would encourage them to re-register; again, they were asked to score potential factors from a menu (with 1 being strong encouragement, 5 no encouragement). Most respondents (33%) indicated that customer requirements would give strong or significant encouragement; the factor with the next highest score was reduced regulatory requirements, with 25% of respondents considering this would give strong or significant encouragement. Help with implementation was considered to provide the least encouragement (31% scoring this as 4 or 5); with 23% also indicating that reduced fees for registration would have little or no effect. These results are presented in Figure 4.8.

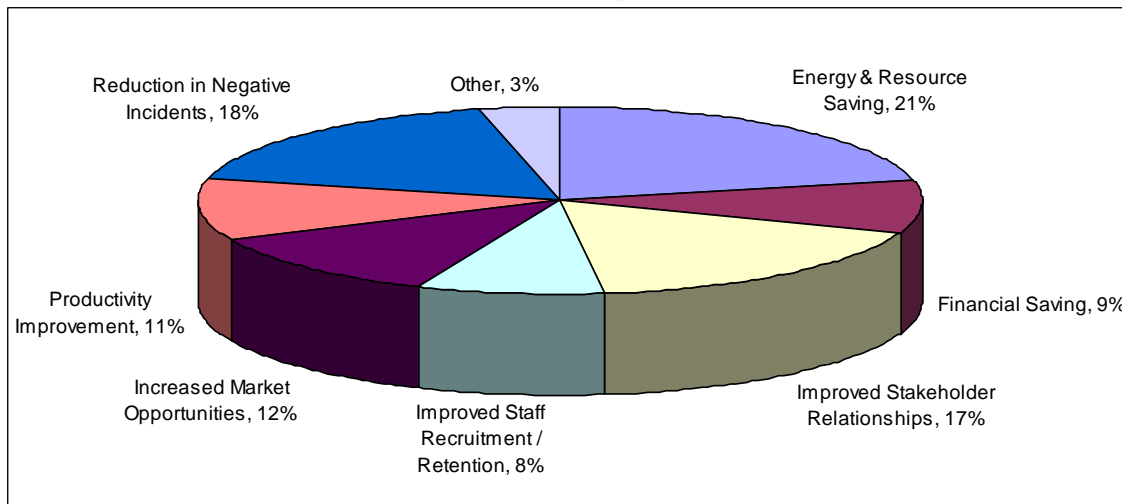
Figure 4.8: Factors that might Encourage Re-registration



4.1.4. Benefits of EMAS Registration

Organisations were asked to indicate which of a list of impacts of EMAS had been the most positive for them. The most positive impact, identified by 29% of respondents as having a score of 1 and 18% as 2, was energy/resource saving; the potential cost savings this could generate are discussed further in Section 5 of this report. The next most widely acknowledged benefits were reduction in negative incidents (scored as 1 by 20% and 2 by 17%) and improved stakeholder relationships (19% and 17%). EMAS was identified as having no or little impact (scores 4 or 5) on improved staff recruitment and retention (18% of respondents), increased market opportunities (17%), financial savings (17%) and productivity improvements (14%).

Figure 4.9: Identified Benefits of EMAS (% All Responses)



There were only limited differences in the scores awarded to different impacts by organisation size. Thirteen percent of micro organisations scored ‘improved stakeholder relationships’ as 1, compared to 8% of medium and 7% of large organisations; only 4% of micro organisations scored productivity improvement as 1, compared to 12% for large companies. Otherwise, the scores were very similar between organisations of different sizes.

Other positive impacts identified in responses included:

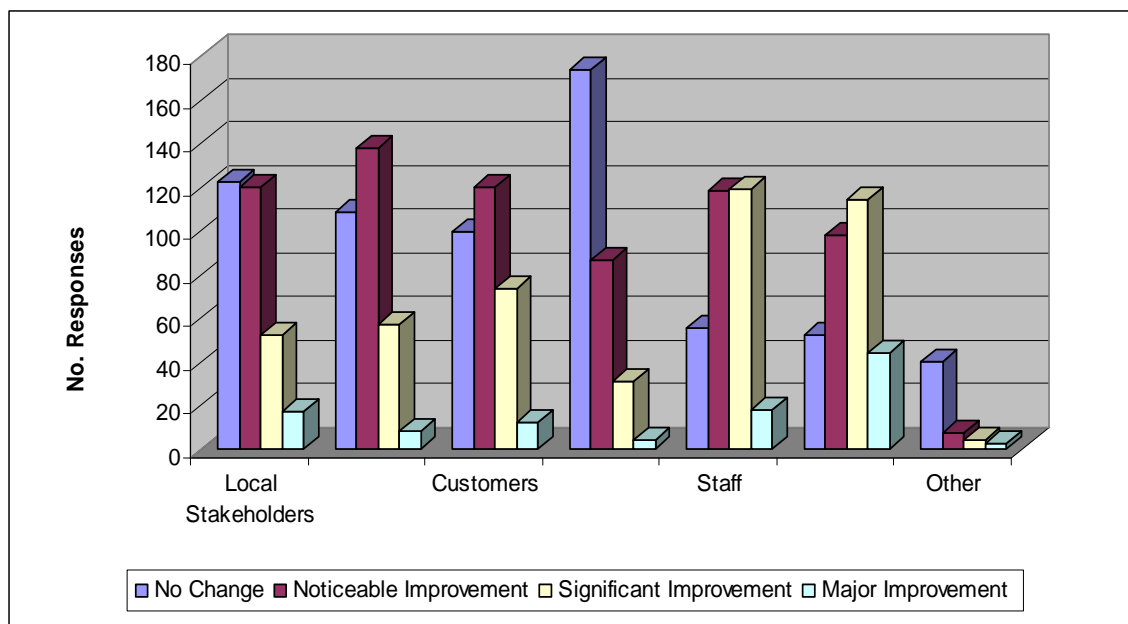
- better knowledge of environmental legal requirements;
- improved safety in the workplace, streamlining of administrative procedures and greater protection of natural resources;
- waste management and cost reduction through improved control of maintenance suppliers.

We then asked specifically about the impact of EMAS on relationships with different stakeholders; Figure 4.10 summarises the responses, with the data provided in table 4.3 below.

Table 4.3: Impacts of EMAS Registration on Relationships with Stakeholders

Stakeholder Group	% Responses indicating ...				Total No. Responses
	No Change	Noticeable Improvement	Significant Improvement	Major Improvement	
Local Stakeholders	39%	39%	17%	5%	311
General Public and Consumers	35%	44%	18%	3%	311
Customers	33%	39%	24%	4%	304
Investors	59%	29%	11%	1%	295
Staff	18%	38%	38%	6%	310
Public Authorities	17%	32%	37%	14%	308
Other	75%	13%	8%	4%	53

Figure 4.10: Impacts of EMAS Registration on Relationships with Stakeholders



The stakeholders most influenced by EMAS appeared to be public authorities (83% of respondents indicating that relationships had improved) and staff (82% of respondents indicating some improvement). The least influenced appeared to be investors, with 59% of respondents indicating that there had been no change in relationships since registering with EMAS. However, one interviewee disagreed with this (see box). Thirty-nine percent also indicated that there had been no change in relationships with local stakeholders.

We also asked whether EMAS had reduced the number of ‘negative’ incidents, such as environmental inspections, monitoring requirements or accidents on site. Around half of the respondents indicated that there had been no change, with 60% or more indicating no change in the frequency of internal and external inspection. Only the frequency of environmental breaches and time spent on monitoring legislative compliance had reduced for more than 50% of respondents (52% in both cases). Sixty percent of respondents said there had been no change in the number of local stakeholder complaints, which is consistent with the response that relationships with local stakeholders had improved less under EMAS than relationships with most other stakeholders.

Additional comments provided by respondents included:

- small occupational accidents have become less frequent in recent years. EMAS generally keeps staff more alert to environmental and H&S issues (Medium organisation, Greece);
- zero accident philosophy has been made realistic;
- very high synergy with OHS 18001 in employee and health protection and reduction of accidents; and
- internal inspections/control increased significantly to prove compliance.

Interview Responses – Benefits of EMAS

“Under **IPPC**, the national regulator requires companies to produce an environmental report detailing environmental performance. EMAS is used to produce this report and communicate environmental conditions more generally with the regulator”. (Private organisations in Ireland and Germany)

“the owners wanted to sell the company and **EMAS improved its value**. Environmental authorities like it [and] large customers also expect suppliers to have EMS.” (Private medium organisation, Sweden).

“the benefits of **improved trust** developing between organisations and local stakeholders are one-off in nature as once perceptions and opinions are changed from the first registration, little interest is shown thereafter” (Private large organisation, Ireland).

“in our case, EMAS is complementary to ISO 14001 EMS. But I think that implementing EMAS gives you **credibility** (to local stakeholders, local community, etc...)” (Private large organisation, Spain).

“Many **customers** send a questionnaire asking for **environmental guarantees**,...EMAS is that guarantee” (Private large organisation., UK).

“Every 2 years under German law a consultant should be paid to **check conformity with law** – the EMAS audit covered this requirement under German law so the external consultant did not have to be paid. Generated a saving of €600” (Private medium organisation, Germany).

“EMAS is more known from the public authorities and it is legally recognised by the State...giving them more credit, they trust them more. For **IPPC** legislation, when an installation is EMAS registered, permit renewal is every 8 years, not every 5 years” (Private small organisation, Italy).

“The benefits with EMAS are something one wouldn't have with ISO 14001...EMAS is just **communication**” (Private medium organisation, Denmark).

“Through the participation in the environmental package Bavaria and EMAS, the relationships to the authorities were deepened. This led to a **reduction in external inspections** and easier approval procedures” (Private large organisation, Germany).

“Better structure through the environmental management instructions. Bulk-buy of environmentally friendly cleaning products. This is also cheaper [reasons for EMAS **improving efficiency**...]” (Private small organisation, Germany).

“Environmental management was nothing new but it got **better structure** through EMAS” (Private small organisation, Germany).

“If you don't do it [EMAS] in Sweden, you lose **customers**” (Private medium organisation, Sweden).

“under EMAS they systematically reviewed all information on how much energy was used in which systems and had the opportunity to take measures to reduce hot spots of energy consumption. **Energy** demand for pressurised air went from 13.5% of total energy consumption down to 7.2% in five years” (Private medium organisation, Germany).

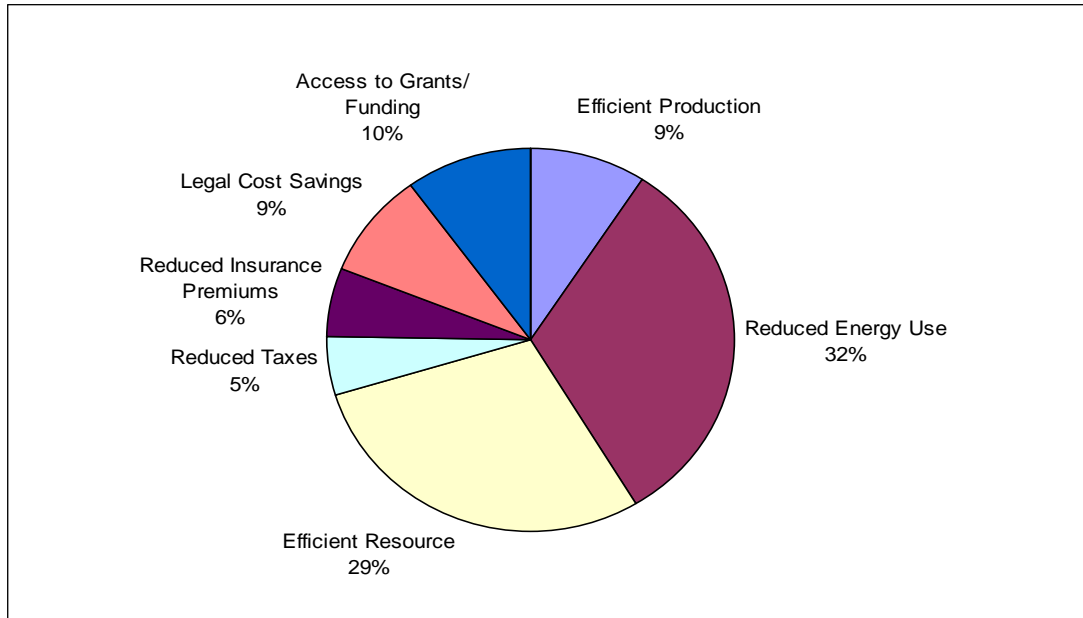
“Chemical industry seen as dangerous, problematic, in the 80's. Town hall has blocked all development projects... [and] couldn't expand the company. In 2002, [company] signed a public agreement protocol saying they would engage with EMAS as well as ISO 14001 so that they would not have problems with local **public authorities and local stakeholders**” (Private SME organisation, France).

“In the construction sector, there is tough competition and EMAS can **increase competitiveness** for registrant.” (Public large organisation, Czech Republic).

“10-15 years ago there was a lot of pressure from Greenpeace on the company, which had been flagged as a bad polluter, EMAS allowed us to open the dialogue. Now **stakeholders, NGOs** have the facts and don't conjecture about what happens and what the company emits, etc. EMAS is a great opportunity to set the record straight” (Private large organisation, UK).

In relation to the financial benefits of EMAS, we asked first what type of benefits organisations had experienced. The responses are summarised in Figure 4.11

Figure 4.11: Types of Financial Benefits Arising from EMAS (% All Responses)



The most frequently cited financial benefits are from reductions in energy use and more efficient resource use. However, micro and small firms were more likely than larger firms to indicate benefits in the form of access to grants and funding and larger companies more likely to indicate benefits from reduced legal costs.

Improved relations with regulators, NGOs and the local community were reported to increase trust and understanding between parties, reducing the number of complaints received from stakeholders. Although not possible to quantify this impact, it is possible to imagine that decision making, planning applications and agreement between various parties including with regulators may be quicker, easier and less onerous, in which case a financial benefit might be derived.

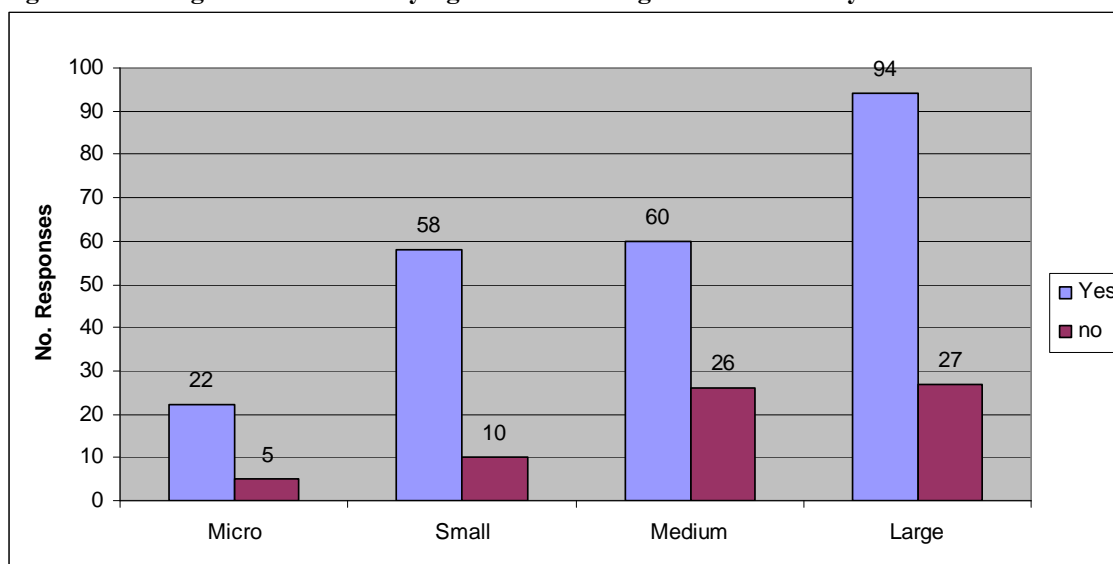
We also asked respondents to indicate the scale of the financial benefits. Further analysis used to generate robust estimates from the responses is presented in Chapter 5 and a summary of responses is given in Annex II.

We also asked organisations whether they had won additional contracts as a result of being EMAS registered. Although 93% of the 220 organisations that responded to this question indicated that they had won additional contracts, this may be a false result. During the interviews, a number of organisations indicated that they had not realised such benefits but had not answered this question in the survey. The real percentage of companies experiencing such benefits may therefore be lower than 93%, as companies that had won contracts were more likely to respond to the question than those that had not. One interview response clarified this situation by stating that *“there was no suggestion that EMAS has helped a lot with any bids or contracts. The key point made is that EMAS made a small difference only among those who knew about it”* (Medium organisation, Greece).

Specifically regarding increased access to public procurement, only one organisation out of the 48 that answered this sub-question noted that EMAS registration had helped win public tenders. We therefore found no evidence of public procurement policies generating effects on the ground.

A more robust result from the survey is that 77% of organisations indicated that EMAS had benefited their general management system, as shown in Figure 4.12, with small and micro organisations the most likely to indicate a benefit.

Figure 4.12: Organisations Identifying General Management Benefits by Size



A number of interviewees connected with the automotive manufacturing sector in Europe stated that many customers required an EMS to be implemented and that having an overall integrated management system within their organisation (possibly linked to the customer's management systems) was a key benefit. In such cases, the compatibility of EMAS with their general management systems and clients positive attitude to EMAS, in addition to reducing implementation costs are important.

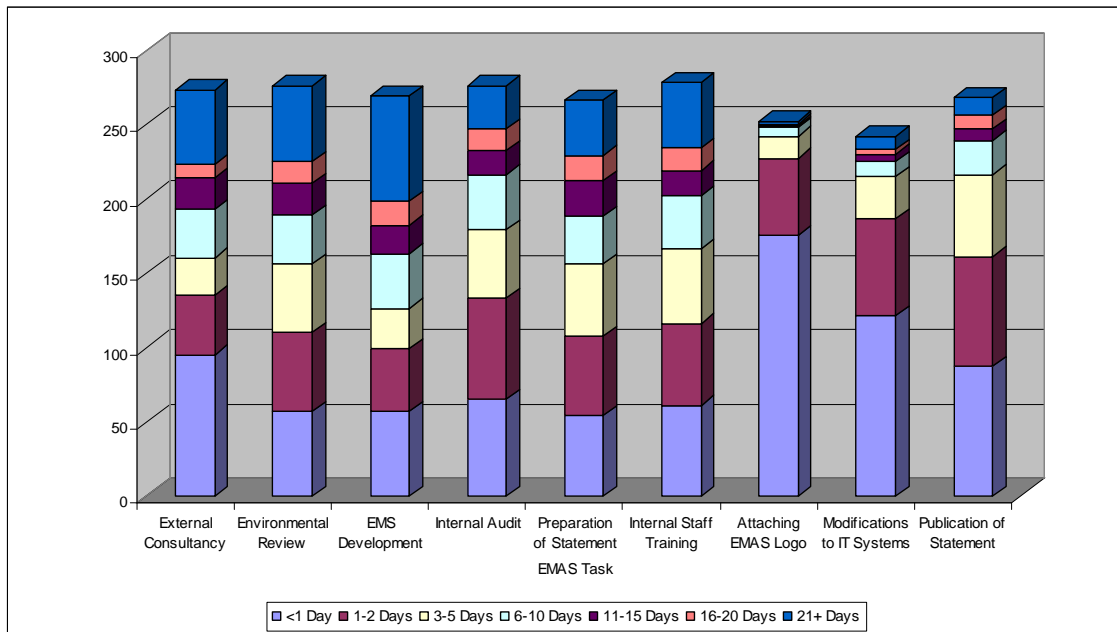
4.1.5. Costs of EMAS

Organisations were asked to indicate the number of person-days (of either their own staff or outside contractors) required to first implement EMAS. The results are shown in Figure 4.13, broken down by task.

The range of responses is quite varied and the results are analysed in more detail in Chapter 5. The table shows that external consultancy was used by most respondents to implement EMAS, with most organisations (59%) requiring five days or less of external support. The responses indicated, not surprisingly, that smaller companies used fewer days of consultant support than larger organisations, although the difference was only marked for micro organisations. For small, medium and large organisations, there may be a trade-off between the complexity of the EMAS system (higher in larger organisations) and the expertise available (also likely to be higher in larger organisations).

The most time-consuming tasks for internal staff are the environmental review, EMS development and internal audit, with staff training and preparing the statement requiring similar levels of input. The tasks requiring less time include attaching the EMAS logo, modification to IT systems and publication of the statement.

Figure 4.13: Number of Person-Days Implementing EMAS



We next asked about the number of person-days required each year to maintain EMAS. The results are shown in Figures 4.14 and 4.15.

Figure 4.14: Number of Person-Days to Implement EMAS Registration

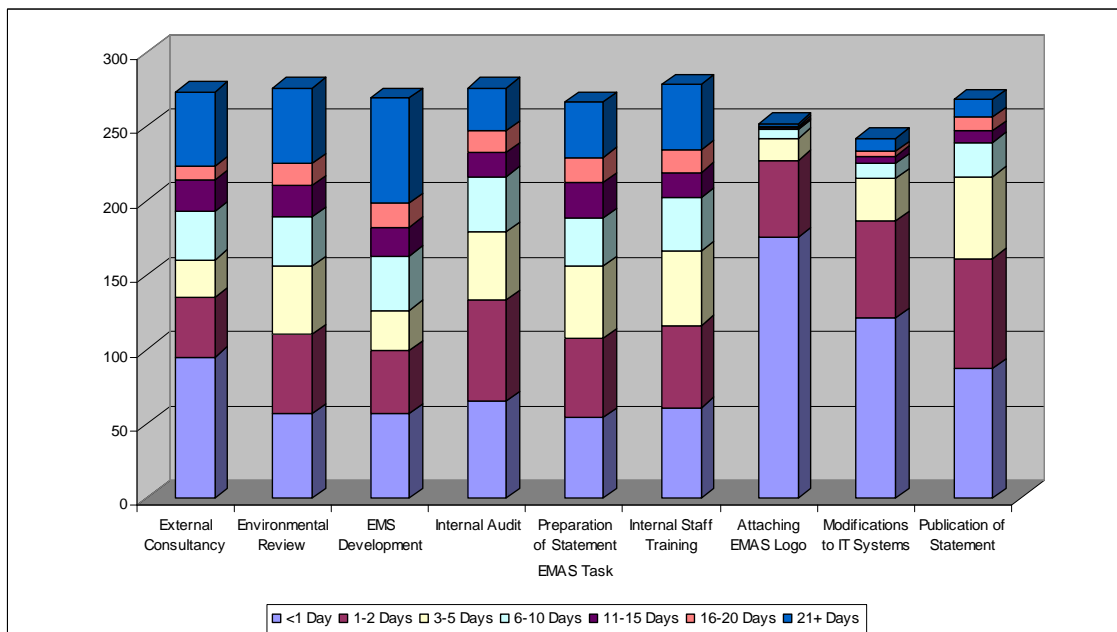
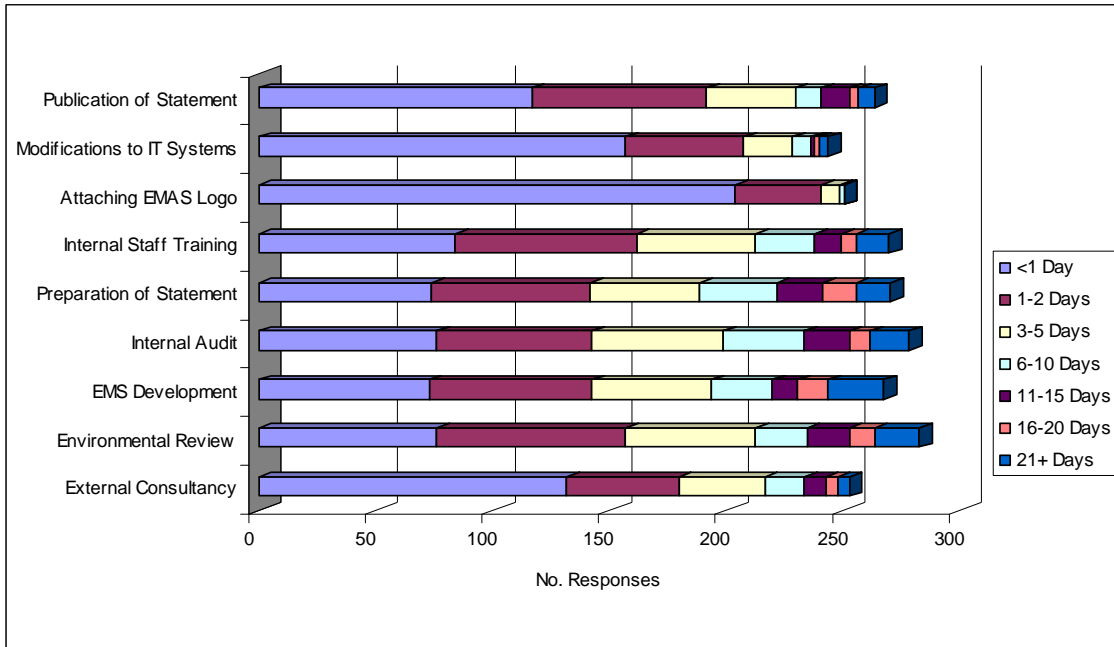


Figure 4.15: Number of Person-Days Required to Maintain EMAS Registration



Again, most of the respondents made use of external consultants, but generally for a small number of days than to implement EMAS. As would be expected, the number of days required to maintain EMAS is lower than the number required for implementation. As for implementation, the environmental review, EMS development and internal audit were the most time-consuming tasks, but in contrast to implementation, preparing the statement required slightly more time than staff training.

To put the person-day requirements into perspective, we also asked organisations to indicate the costs of internal and external staff. The results are summarised in Table 4.4.

Table 4.4 Costs to Organisations of Internal and External Staff

Daily Rate Category (€)	External Consultant	Internal Experts	Internal Administration	Other
Less than €250	56	56	82	17
€251-€500	29	62	21	15
€501-€750	20	23	14	16
€751-€1,000	25	19	7	16
€1,000-€1,500	26	18	4	14
More than €1,500	13	11	2	9
Total Responses	169	189	130	87

As the table shows, the costs varied considerably. We undertook further statistical analysis to relate the costs to the time requirements, to provide estimates of the costs of staff time in Chapter 5. We also asked respondents to indicate what fees and costs they had incurred to implement EMAS, in the first year and in subsequent years. These are also discussed in detail in Chapter 5.

Interview Responses – Costs of EMAS

*“In order to increase acceptance and reduce costs it is highly recommended to streamline and consolidate the environment certification by **merging ISO 14001 and EMAS**”* (Private large organisation, Germany)

*“when starting a global environmental statement, there wasn’t just one EMAS rule, but several different ones, depending on the auditors who had their own interpretations, and on the Member States, which have their own regulations/incentives, etc... there is a **need for clear guidance at EU level...**”* (Private large organisation, sites in Finland, Germany, Austria, France and UK)

*“what counts is not just the cost of registrations but also the **internal costs** that come with the implementation of EMAS. Many companies have been frightened by the bureaucratic burden”.* (Private medium organisation, Sweden)

4.1.6. Incentives and Barriers

Organisations were asked to indicate what incentives were available to them from Member State authorities to encourage EMAS participation, and whether they took advantage of these incentives. The results are shown in Table 4.5. Organisations appeared to respond to this question in a variety of different ways leading to a number of anomalies in the results. For example, many respondents indicated that they had taken up a particular incentive, but had not correspondingly indicated that the same incentive was available. Consequently, the take-up of an incentive is reported higher than its availability in some cases.

Table 4.5: Availability and Uptake of Incentives

Incentive	% Available	% Taken up
Regulatory relief	18%	15%
Guidance documents	25%	18%
Financial support	12%	23%
Technical assistance	13%	13%
Promotion of EMAS registered organisations	18%	13%
Streamline other applications	11%	15%
Other	2%	3%
Total no. responses	435	387

The most commonly-available incentives were guidance documents, regulatory relief and promotion of EMAS registered organisations. The incentives most commonly taken up were financial support, guidance documents and reduced regulatory enforcement. Other incentives mentioned by respondents included:

- higher public subsidies for investment in eco-technologies for EMAS registered organisations; and
- reduced taxes for organisations located on publicly-owned land.

Respondents were asked to score the incentives in from 1 (very important) to 5 (not important). The incentives scored 1 or 2 by most respondents were promotion of EMAS registered organisations (19%), regulatory relief (19%) and financial support to register (19%). Most incentives were considered important by a reasonable most respondents; only technical assistance to register received a

relatively high number (23%) of scores of 5 (no importance).

Interview Responses – Incentives for EMAS registration

*“people/companies should know that it is not so difficult to register, there is a need for better communication and promotion. Guidance is quite theoretical, but not practical enough...it’s too complex a system; it should be more friendly, more simple, especially for employees with low social background. In the **step-by-step approach** set up at national level, a very complicated guide was simplified and made more specific [to their activity].”*
(Public micro organisation, Romania)

*“we would not have done it [EMAS] without **financial assistance**... It was announced and expected that the registration would improve dealings with the authorities (business inspectorate, fire prevention, etc). But this has not come about.”*
(Private small organisation, Germany).

*“it’s easier in countries like Spain or Italy where companies deal with **local regional authorities** and not central state one like France... as transparency and improved stakeholder recognition of EMAS is greater”* (Private SME organisation, France)

*“participated in **convoy** approach of 10 entities, organised workshops to guide organisations with EMAS implementation, met with green energy providers and public authorities to provide joint effort. We achieved greater publicity with this convoy approach...”* (Public micro organisation, Germany).

*“We did the registration in the **convoy**, otherwise we would not have done it. This allowed us to overcome the barriers. We either had to lower the costs or improve the benefits. Better to improve the benefits. It is important to make EMAS better known, through better marketing, etc.”* (Private small organisation, Germany)

*“What could be a very useful improvement for EMAS, is to focus more on renewable energy. Finally, a **reduction of registration fees** would definitely be important to attract companies to register under EMAS”.* (Private large organisation, UK)

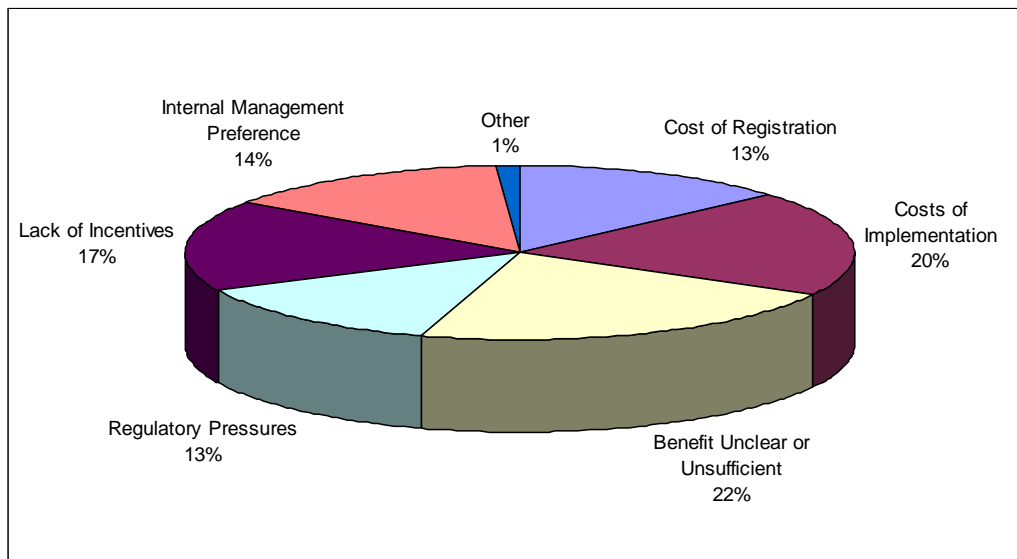
*“**Monetary incentives** came from the Ministry of Industry (now the Ministry of Development) under Action 292 (50% of the €150,000 per site/unit cost) and from the EU (the remaining 50%)... considered a significant amount”.* (Private medium organisation, Greece)

*“**Financial support** in Catalonia is provided by the Autonomous Community of Catalunya. A decree regulates the financial support. The contribution is about 60-70%. [The company] did not make use of this support because it takes quite some time to actually receive the funds. Nevertheless, they did obtain subsidies from the Catalanian authority, which also provided some financial support”* (Private large organisation, Spain).

We next asked respondents to score the importance of a number of potential barriers to uptake of EMAS (shown in Figure 4.16), also on a scale of 1 to 5. Barriers scored 1 or 2 by the highest numbers of respondents included that the benefits were unclear or unjustified (23%) and the costs of implementation (20%). The next most highly-scored barrier was the lack of Member State financial incentives (17%). Comments added by respondents included:

- EMAS is still not sufficiently in the public mind in order to develop pressure or demand for industry, services etc to participate; and
- the benefits of EMAS are not clear until after implementation, (EMAS awards could be developed as a platform to showcase and promote best practice and produce continuous information).

Figure 4.16: Most Important Barriers to EMAS Uptake



Interview Responses – Barriers to EMAS Registration

*“we **don’t have reduced regulatory enforcement**, which is a shame [or] any financial help to register, as these two factors would actually push companies to register for EMAS.” (Private medium organisation, Hungary)*

*“**clients don’t really care** about environmental performance. The only ones who care (and send a questionnaire on environmental performance) are companies from the north of Europe” (Private small organisation, Italy).*

*“we find it **difficult to understand why smaller organisations would register**, particularly given the presence of ISO 14001, as for larger organisations the costs are largely insignificant in moving from ISO 14001 to EMAS and the benefits are clearer” (Private large organisation, Ireland).*

*“The **financial incentives are comparatively low**” (Private large organisation, Germany).*

*“Biggest problem: **many people don’t care**, even at the highest levels. 2 kinds of companies, the ones who need the incentives and the ones who believe in EMAS for real. **Incentives can be perverse** they should be more controlled, carefully inspected and not just on the inspection day. There is inappropriate use of the funds in some places that are EMAS registered” (Public medium organisation, Portugal).*

*“The **additional value** of EMAS to ISO is **too unclear**. It should be clearer what the additional requirements for EMAS is compared to ISO 14001. The language of the instructions should be easier and the guidance should be clearer” (Private medium organisation, Denmark).*

*“We were **unable to quantify any savings**, which is a weakness of EMAS. The company made substantial resource and financial savings from implementing EMS and from adopting a sustainability approach, but we were unable to definitively tell whether the savings were from EMAS or another EMS or just a general approach” (Private large organisation, UK).*

*“the company must declare in advance that we will be in compliance with environmental legislation and we must prove it – this is extremely difficult as there is **no user-friendly register of legal requirements**”. (Public large organisation, Czech Republic)*

*“**too administrative** approach for audits/verifiers, no experience in management, a lot about legislation, they see only part of the picture, not the whole picture. Changes needed: involving people with management experience on the teams of verifiers” (Private medium organisation, Portugal)*

*“Being EMAS registered (in particular after having ISO 14001) means having a very good environmental performance. However, as the main improvements have already been achieved and any new improvement requires big effort as they might probably require **big investment or major changes**”. (Private medium organisation, Spain)*

*“Many **customers**, especially SMEs, **wouldn't know what EMAS was** when the company sent it environmental statement. They still feel that there's still a high level of ignorance from SMEs”(Private large organisation, UK)*

4.2. Results from interviews with Member State Competent Bodies

4.2.1. Introduction

This section presents the results of the interviews with the competent bodies of 25 Member States. It draws on the interview reports and presents the data in a series of three matrices. It revolves around three themes:

- assistance and promotion;
- incentives; and
- barriers.

After each table, a short summary synthesizes the results, with the aim of identifying common patterns across the Member States. From this, we can note that Member States do encounter the same kind of difficulties regarding the promotion of EMAS uptake by organisations. The analysis of these results and the conclusions that can be drawn from is then presented in section 5.2.

4.2.2. Assistance and Promotional activities

Table 4.6 below presents the responses of the Member States' competent bodies to the questions about technical assistance provided to EMAS-registered (or registered-to-be) organisations and about activities undertaken at the national level for the promotion of EMAS and of EMAS-registered organisations. The results from the table are summarised below, in such a way as to draw out overall trends and identify key exceptions.

Regarding the kinds of structures through which assistance is delivered to organisations seeking and maintaining registration, apart from in Greece and in Romania, in general there are not formal technical assistance units dedicated specifically to EMAS at the national level. Correspondence with organisations is organised through emails and phone calls, and is usually quite informal. The number of people working on EMAS in each Member State varies between 1 and 2, with these individuals not always working full-time on EMAS (IE, PT, EL, HU do have full time staff devoted to EMAS). Most of the people working on EMAS work also on Eco-label (EE, MT) or on other environmental management systems (NL, UK), and have other functions besides EMAS. In two countries (RO, FR), regional organisations are in charge of EMAS assistance and promotion and people from different administrations share this task. In Ireland and Germany, the competent body is also the accreditation body and cannot therefore do any promotional activity, which is then left to the Ministry of the Environment.

Technical assistance is provided to organisations through emails, phone calls, newsletters (AT, PT, ES, IT) and using websites to disseminate information and news. Approximately half of the member states have a page dedicated to EMAS answering basic inquiries on the Ministry of Environment or competent body website (PT, NL, ES, RO, FI, IE, BE, IT, SK, PO, CY, CZ, SK). The majority of

Member States have a specific website on EMS including EMAS (AT, FR, UK, BG, EE, DE, HU, LT, EL, SE, MT, and PL).

Assistance specifically targeted towards SMEs or micro organisations is provided in several member States (AT, CY, FI, EL, HU, IE, MT, ES) through tailored assistance (such as close communication) from the competent body on legal or technical requirements.

In terms of benefits to organisations from assistance programmes, results were mixed. Some Member States (CY, FI, HU, IE, and MT) reported on the outcomes of the EMAS-Easy program. It was sometimes successful (HU, CY, SK) and other times less successful, partly because of funding problems and partly because many organisations stopped after the first steps of the program and were contented with a less stringent environmental management system. Other Member States have introduced general schemes to help all organisations implement environmental management systems, such as the French “123Environnement” program, or the Portuguese “PMEmas” program. The NEST project, implemented in the UK, Greece, Hungary and Poland, was reported as a success by Hungary and allowed municipalities to get access to consultants to assist with EMAS registration. Greece identified benefits from a national EMAS funding programme, while Austria flagged technical assistance as being beneficial to newcomers.

Table 4.6: Assistance and promotional activities

Country	Technical assistance	Educational/informational promotion	Benefits to organisations?	Associated Costs
Austria	Newsletter, information on demand, nothing in particular for SMEs but help with environmental declaration to micro organisations. Information letter to organisations > 250 employees on eco management and environmental reporting.	Each new-comer receives certificate and plate with n° and EMAS logo in give-out ceremony 3/year	- Technical assistance beneficial to new-comers - Marketing effort (one company promotes EMAS logo with ad in newspaper)	- Ministry gives money to external organisations for promotion: 30.000€ for workshops on legal compliance and help to new org (but not just for EMAS) - 1500€ for the ceremony - 6 länder used the federal funds for the EMAS consultancy, it amounted up to 100.000€
Belgium	- Half-time technical assistance provided by the Regional competent authority - Assistance from the Brussels Enterprise Agency - Tailored assistance to SMEs when requested	- 2004 governmental project to get all public bodies to dedicate one person to the promotion of EMAS (80000 persons in total) - No particular promotional activity for the recognition of the logo	Technical assistance is said to have helped to the successful uptake of EMAS in Brussels	Responsibility of the Service Public Fédéral Développement Durable (no information available)
Bulgaria	- Website ⁹ provides a lot of information on the regulation, the requirements and the different steps for registration	- Organisation of seminars in 2007 which drew some interest to the scheme, but participants usually implement the first steps and stop before the accreditation - Support to NGOs which work with specific sectors (gas industries) for the implementation of EMS	No registered organisations so far	No evaluation of the costs of the seminars
Cyprus	- Project of technical and financial assistance before registration - EMAS-easy (2007) - Training of consultants for organisations - Training of national verifiers so companies don't have to pay for foreign ones	Educational and informational seminars (with people from the Commission); 1 event/year on EMAS; promotion of EMAS during related events (Envirotech exhibition, training on environmental management tools...); lecture at schools, etc.	- No direct benefit yet (too soon) - Long-term benefits and environmental improvement - EMAS-easy helps come up with an answer when hear about difficulties of implementing EMAS	- Costs for one person working on EMAS at 25% of her time : 12 to 15,000€/year - 115,000€ from Cypriot government for EMAS subsidies in 2009
Czech Republic	Information available over the Internet.	- Presentations and conferences but no large campaign is taking place - Promotion is done by the Ministry and CENIA	Promotional activities aimed at companies, not the general public because level of interest for companies' environmental statement among the general public/local authorities is quite low	Main costs arising from this are personnel costs and a small expenditure of material objects.
Denmark	Technical help provided by the CB (phone/email assistance), who forward to verifiers when there are difficulties	- No promotion currently, but planned after implementation of EMAS III (because obligatory) - The existing network of Danish EMAS-registered organisation could provide a good platform for this promotional activity	- None identified - Promotion of the EMAS logo doesn't seem to be necessary as it doesn't appear on the product	No evaluation of the costs of technical assistance or of promotional activity, since there isn't any

⁹ <http://www.emas-bulgaria.com/>

Country	Technical assistance	Educational/informational promotion	Benefits to organisations?	Associated Costs
Estonia	Only 2 registered organisations so no particular assistance procedure but a website and electronic portal for environmental legislation + organisations can call them directly ¹⁰	- Association dedicated to EMS organizes conferences and events on EMAS and best practices as well as training courses (end of 2008) for Russian-speaking workers on EMS - Brochures, bulletin quarterly ¹¹	Good communication with the 2 organisations so far. They're hoping to improve their technical assistance	- None for technical assistance, apart from one person's salary (also working on Ecolabel, etc.) - Expenses for promotional activities undertaken by association
Finland	- No helpdesk or specific telephone line but companies can call CB which answers their concerns (not many companies call), same for renewal. For legal requirements, companies can ask their regional environmental centre. - Network between organisations that want to implement EMS so that they don't do it alone and find help and support. - On-going project (that will end in September) to help administrations implement EMS	- The Finish Environmental Institute undertakes promotion in partnership with the Ministry. - Guidance document under preparation and planned seminar for next January , after revision of EMAS - Website is comprehensive and accessible ¹² . - Publication of EMAS and best available techniques leaflets every other year	- CB doesn't think seminars will increase registration in the short-term but hopefully in the long-term. -EMAS-easy was to be implemented but they lacked financial support (which according to the website was to be provided by the EU).	No information on the budget of the on-going network project
France	- Organisations needing technical assistance call the ACFCI (Assemblée des Chambres Françaises de Commerce et d'Industrie), which is the responsible public body for EMAS assistance - Step-by-step approach to help organisations register to EMS scheme, called "123 Environnement" ¹³ , partnership between Ministry, ACFCI, ADEME (Agence de l'Environnement et de la Maitrise de l'Energie) but not only for EMAS, also for ISO14001 - Signed convention between government and industrial organisations to implement good practices (1 st step of step-by-step approach)	- Waiting for revision of EMAS directive to launch new campaign and waiting for implementation of measures from the Grenelle de l'Environnement (such as insurance premiums, sustainable production and consumption package, etc.) - So far: EMAS and ecolabel brochures and plaquettes by ACFCI.	- Organisations have good relations with their Chamber of Commerce which have a regional and local foundation. - No real benefits from promotional campaign and they are currently studying the reasons for EMAS failures	Responsibility of the ACFCI
Germany	- Dedicated website for EMAS ¹⁴ with a team of four people at the Umwelt Gutachter Ausschuss. - Guidance on the steps towards adopting EMAS	- Numerous publications - Q&A provided on the website - Promotional activities through the media - Additional promotional activities through charity organisations (Alfred Toepfer Stiftung) - Numerous seminars and conferences	Website provides a list of public tenders that require certification with an EMS	Costs of salaries of EMAS team

¹⁰ <http://www.keskkonnainfo.ee/index.php?lan=EN&sid=136&tid=129&l1=29%27> ; http://www.envir.ee/emas/index_en.php

¹¹ <http://www.ekja.ee/index.php?m=269&l=36&ava=1>

¹² <http://www.ymparisto.fi/default.asp?contentid=106310&lan=en#a1> ; <http://www.ymparisto.fi/default.asp?node=7589&lan=en#a2>

¹³ <http://www.123environnement.fr/presentation.html>

¹⁴ <http://www.emas.de/home/>

Country	Technical assistance	Educational/informational promotion	Benefits to organisations?	Associated Costs
Greece	<ul style="list-style-type: none"> - EMAS Committee (4 people) and EMAS Team (3 people) from Ministry of Environment and Ministry of Development: telephone/emails/face-to-face/website¹⁵/ contact form, etc. - EMAS Team offers help to SMEs on legal compliance issues, and other questions are forwarded to the relevant Ministry of Environment department. Local Prefectures can help too. 	<ul style="list-style-type: none"> - Conferences, workshops and other events co-organised by Ministry of Environment and Ministry of Development, or national accreditation body, local authorities, the National Centre of Sustainable Development, universities ,hospitals implementing EMAS etc. - Publications (including EMAS Guidebook) available to organisations through an event; - Co-organisation of the EMAS Awards ceremony 2006 in Athens (EC. and Austrian agency); - Organisation of the EMAS Article 14 Regulatory Committee in Athens - Offering stationery (pencils and notebooks) with EMAS logo 	<p>[Events not specifically for EMAS only but to raise awareness on environmental issues and environmental management]</p> <p>Benefits have been perceived but it's difficult to quantify them. The greatest benefits perceived came from the funding programmes (see incentives)</p>	<ul style="list-style-type: none"> - No other cost for technical assistance than the salaries of Team members. - €30,000 allocated by Ministry of Environment for the organisation of the meeting of EMAS Article 14 Regulatory Committee in Athens, financial contribution (extra guests, official invitations) to EMAS Awards ceremony and publication of EMAS guide book and other promotional material. - Some events generally have a wider remit, they cannot be considered to be 'EMAS promotional activities'. The cost of the above cannot be estimated.
Hungary	<ul style="list-style-type: none"> - Support for all organisations, phone calls or email to request information - Provide two types of assistance at the national inspectorate: help desk or drop in 	<ul style="list-style-type: none"> - Successful road shows (visit cities and give EMAS presentation to companies and municipalities), - Twinning with Denmark – brochures and website, - EMAS roundtables where registered orgs and interested parties meet to discuss topics 	<ul style="list-style-type: none"> - Helps the organisations to clarify issues. - EMASEasy was successful - NEST Project – municipalities to join the scheme, access to consultants 	<ul style="list-style-type: none"> - Salary of the individuals (2 persons) - Cost to orgs – 100 florine per page for photocopies - Costs for promo: hire the location, food and drink
Ireland	<ul style="list-style-type: none"> - Just one person working for EMAS and only 7 registered organisations, not a lot of technical needs 	<ul style="list-style-type: none"> - The CB is the accreditation body so it can't have a lot of promotion because it's conflict of interests - An organisation called Enterprise Ireland promotes EMS and helps SMEs financially (but not specific for EMAS) 	<p>Not enough promotion to be really beneficial, organisations were interested in the EMAS-easy workshop last year but none registered, CB suspects they stopped at ISO14001</p>	<p>Salary of one person</p>
Italy	<ul style="list-style-type: none"> - IRPA gives technical support to all the organizations involved, or potential participants. - information available on the national EMAS website¹⁶ 	<p>Promotional activities organized by IRPA, public authorities, National or Territorial public bodies (Brochures, Internet, Magazines).</p>	<p>Promotional activities need to be enhanced: in particular major involvement of the Chamber of Commerce and growing activities to achieve a wider knowledge and popularity among the stakeholders are desirable.</p>	<p>Not feasible to estimate costs</p>
Latvia	<ul style="list-style-type: none"> - Only 9 organisations, come to CB office or call CB to get information, on-going communication process between CB and the organisations ("like a small family") - Continuous help from the consultancies that helped them get started in the first place 	<ul style="list-style-type: none"> - Working on an educational scheme with schools and universities: project with high-schools (in association with eco-label) on green thinking (winners went onto eco-label excursion in May 2009) - A lot of the promotion is through communication, 	<p>Benefits with children and students being more and more interested in EMS in general (writing Master's thesis, etc.)</p>	<p>Costs for the camps were not so high and CB uses internet so nothing is too expensive.</p>

¹⁵ <http://www.minenv.gr/emas>

¹⁶ <http://www.apat.gov.it/certificazioni/site/it-IT/EMAS/>

¹⁷ http://www.emas4newstates.lv/?object_id=361

Country	Technical assistance	Educational/informational promotion	Benefits to organisations?	Associated Costs
		not much else, articles in magazines, use of the Internet ¹⁷ , etc.		
Lithuania	No registered EMAS organization so no mechanism for providing on-going information support	Environmental Protection Agency organizes seminars about EMAS for enterprises and organizations every year	It's hard to perceive the benefits of these, as no organisation is registered yet	
Luxem-bourg	- Direct contact with the CB if needed, case by case approach - Website ¹⁸ (but no particular page on EMAS)	- Yearly publication of the Luxemburgish Guide of Quality ¹⁹ which mentions EMAS. - No other particular promotion.	Only one registered organisation: the European Parliament. Not very representative of EMAS-registered organisations	No real costs because no promotion
Malta	- No real technical support as there is only one large company, which has its own EMAS unit - Assistance on legal requirements is provided when needed - EMAS-easy: 3 step approach where the 1st step is the Maltese standards (second=ISO140001 and third=EMAS). A lot of companies stop after the 1st step.	Seminar on EMAS organized every year by CB and Italian organisation (1/2 day)	Organisations are interested in the seminar but question the use of implementing more than ISO14001	- Salary for one person working on EMAS and Eco-label - 1,200€ allocated each year for promotion of EMAS and Ecolabel
Nether-lands	- Organisations can contact CB via emails, website - No technical assistance on a regular basis.	- No promotional activities because the CB is the accreditation body. Sometimes CB holds a conference and leaks information about EMAS but nothing more. - Same for ISO14001, but it's growing without any promotion anyway, contrary to EMAS.		No costs, because no promotion, nobody works on it full-time
Poland	- Support from Ministry of Environment and General Directorate of the Environmental Protection employees - Official EMAS website ²⁰ with package e-learning - Ministry work in association with Association of Polish Forum ISO14000 ²¹ - Guide "EMAS Easy for SMEs" published by European Commission provided to SMEs	- 2008 Conference of Ministry of Environment "EMAS – the current status, prospects of development" - Conferences held twice a year - Cooperation with magazine Polish Market which has published 3 articles on EMAS - Stand on EMAS at the 2008 POLEKO International Trade Fair for Environmental Protection in Poznan	- 120% increase since 2007 (17 registered-organisations and 24 registered-sites in total) shows that promotion is working	No estimation of the costs, promotion undertaken by public administrations
Portugal	- Support via emails /telephones /letters /website - Project PMEmas (Phased Implementation of Environmental Management Systems in Small-Medium Firms), helps meeting EMAS requirements	- Annual workshop for verifiers to harmonize interpretation of EMAS legislation and specify competences of the verifiers - Publish posters, brochures and EMAS flags	- PMEmas means a long-term commitment industries find it hard to follow, they don't see direct benefits, only direct costs so, very limited success of the	- 5500€ for the PMEmas project - 2006 workshop = 4500€ including taxes. 2008 = 590€ with no location and food expenses. Big flags = 250€ and

¹⁸ <http://www.ilnas.public.lu/fr/promotion-qualite/guide-luxembourgeois-qualite/index.html>

¹⁹ <http://www.ilnas.public.lu/fr/publications/promotion-qualite/revues-nationales/guide-luxbg-qualite2009.pdf>

²⁰ www.emas.mos.gov.pl

²¹ www.pfiso14000.org.pl

Country	Technical assistance	Educational/informational promotion	Benefits to organisations?	Associated Costs
	step-by-step → 2 parts : 1. in printing sectors and hotels (finished) 2. in culture branch : museum and culture foundation (on-going)	(EMAS registration flag with registration number, CB logo and EMAS logo + many small desk flags), articles in magazines and communications from CB representatives. - CB representatives invited to events organised by EMAS-registered org: good way to promote EMAS in cheaper way.	step-by-step approach (14 organisations at beginning, only 6 at the end and 1 got EMAS-registered) - Increase in number of registration through promotional events and better image of EMAS-registered organisations among the public, better visibility	1000 desk flag = 7.900€, brochures = 900€.
Romania	- Information on the website of the Ministry of the Environment, national, regional (18) and local EPA (42) - National Environmental Protection Agency has a bureau for EMAS with 3 salaries	- Participation in international conference, with presentation about EMAS - articles and publications in ECO-publications - From 2006, applied for TAIEX workshop and will hold it in September.: disseminates experiences - Presentation of the logo on the website and at conferences	TAIEX workshop is successful because it shows Romanian organisations that EMAS works in other member states.	- One person/EPA dedicated to EMAS question (usually a part of his/her work) - 2007 = 13500€ for TAIEX, brochure and two workshops
Spain	- Help provided by contact with the Ministry (phone/emails), forwarded to the EMAS programme director + ministry's website - Some pilot projects but none tailored for SMEs, however interactive Handbook for SMEs available on website - The Balearic Islands: electronic letters are sent every 5/6 months to registered organisations. Information provided relates to EMAS and in general to good environmental practices. Good practice Handbooks on specific sectors are also available (ex: on gardens)	- The Ministry has organised some events, but they are mainly the responsibility of the Autonomous Communities. - In the Balearic Islands, a yearly event on EMAS is organized where organisations receive a diploma or a plate - Presence in the media, at the International Tourist Fair, leaflets, articles, recognition of the logo among professionals (but not among the general public).	- The interactive Handbook is considered to be a user friendly tool that contributes to facilitate the uptake of EMAS provided that the organisations have at least a member of staff in charge of it. - Promotion allows organisation to get public recognition - The government of the BI adds that despite technical assistance provided, SMEs usually need the help of an external consultant to implement the requirements	- No quantification of the costs of assistance or of promotion - Yearly event of the Balearic Islands cost around 3,000€
Slovakia	- Information documents on EMAS (brochures, leaflets) - Contacts/communication with organizations EMAS - The technical assistance includes: - Manuals, Directives, Handbooks - Interactive CD - Educational activities organized by national experts - Trainings, Courses, Activities (aimed at carrying out initial environmental review, identification of environmental aspects...) - on-going project EMAS Easy in Slovakia	- Articles, newspapers (e.g. EMAS modern instrument of European environmental policy realization) - Technical/scientific magazines: Kvalita, XXI Storocie, Enviromagazin, etc. - Conferences, workshops, seminar meetings - Ceremony for awarding the EMAS logo to organizations registered in EMAS - Exhibitions (Ekotechnika – Incheba Bratislava, Ekotopfilm – Bratislava, Envirofilm, etc.) - TV program on EMAS benefits prepared but not diffused because of crisis	- long-term support help organisations understand EMAS and meet the difficult requirements - technical assistance and consultant service by the state defined by Act no 491/2005, Art.6, section 2a) - Awareness that ensuring minimal number of organizations meeting the requirements of the regulation is necessary for the development of EMAS culture in national conditions of the Slovak republic	Slovak republic Act No 491/2005 Article 2, section 4 c: the organization is obliged to pay the fee at the first registration (it is income of the state budget – act No 145/1995): Small organization: 66, 39 EUR Medium organization: 663, 88 EUR Other organizations: 1659, 69 EUR
UK	- Sort of helpdesk (2 people working at IEMA (CB) answer all enquiries by phone or emails) - Website (same for ISO14001 and Acorn Scheme)	- Promotional activities are devolved to them by DEFRA: conference, exhibitions where they speak about EMS in general	- No real benefits, no recognition of EMAS logo because it does not go on products. - They get a certain number of enquiries,	- 4/5 days/month per person working on it (approx. 20% of their time) - Promotional activities are funded by

Country	Technical assistance	Educational/informational promotion	Benefits to organisations?	Associated Costs
	- Notification of EMAS-related events	<ul style="list-style-type: none"> - EMAS forum planning regional activities - Brochure on EMAS published in 2004 (needs updating) - Promotion of EMS through the graduated career fairs (ie at the University of East Anglia) 	half from the public sector, but they don't always recommend EMAS for SMEs (too many costs, too little benefits)	DEFRA

Among promotional and educational activities at the national level, conferences and seminars on EMS are the most common tools to promote EMAS. Fifteen Member States organise, or have organised through an external organisation, events around EMAS or EMS in general in their country. Promotion of EMAS is usually targeted towards organisations, but in some Member States, it is also targeted at the general public. Latvia, the UK and Greece for instance promote EMAS in schools or universities. Several member States (PL, LV, ES, SK) have also decided to publish articles in specialised magazines and establish a contact with the media in general, so as to reach out to a large number of organisations. In contrast, several countries (DK, CZ, UK) found public outreach unnecessary, since the EMAS logo cannot be used on products and therefore suffers from a low recognition and limited public interest. Member States where promotional activities are absent or very limited include Luxembourg, the Netherlands and Denmark.

In terms of the benefits to organisations that competent bodies perceived as emerging from their promotional activities, the responses varied. Some competent bodies from more recent Member States found it difficult to identify concrete examples because of the early stage of development of EMAS registrations (CY, BG, EE, LV, LT). Benefits from promotional activities were expected to accrue over the long term as an increased interest amongst organisations in EMS in general and EMAS in particular (CY, FI). Poland experienced a good result from promotional activities, with an additional 17 organisations registering over a one-year period, more than doubling total numbers. Competent bodies in France, Denmark and were unable to identify any benefits from promotional activities.

Competent bodies were not always able to report accurately on the costs of technical assistance and of promotion. However, from the information available it is evident that the amount spent on EMAS promotion and assistance varies significantly between Member States. Whereas some member States spend tens or even hundreds of thousands Euros on EMAS (AT, CY, EL) for project funding or consultancy fees, others spend more modest amounts on seminars and brochure publications. A last category of competent bodies declared spending nothing on EMAS promotion, apart from salaries, either because they are not the body responsible for promotion (UK, DE, FR) or because EMAS promotion is not seen as necessary or useful in those member States (LU, NL, IE).

4.2.3. Incentives

Table 4.7 presents the responses of the Member States competent bodies to the questions about incentives. Incentives are divided into three categories: financial incentives, regulatory relief and public procurement advantages.

The results from the table can be synthesized as follows.

Financial incentives

The most common financial incentive is the absence of registration fees but other financial advantages, such as subsidies and funding programs, are also offered to encourage companies to register. 16 Member States offer financial advantages to organisations that are registered with EMAS.

Nine member States (CY, DK, EE, EL, HU, LV, LU, NL, ES) have no or very low registration fees and/or renewal fees. Four member States (AT, CY, HU, IE) offer financial support on consultancy and/or accreditation fees. Three member States (BU, RO, ES) provide lower registration fees for SMEs, with Italy providing targeting financial incentives to SMEs. Two member States (HU, PL) provide subsidies for registration and/or implementation to all organisations. Two member States (EL, LV) offer funding programmes on the basis of a project set up by the organisation. In Italy, a variety of financial incentives are offered at the regional level. Finally, three member States (FR, DE, BE) give the possibility for reduced taxes or governmental refund to EMAS-registered organisations.

Public procurement

The majority of Member States favour organisations with an EMS in their public procurement decisions, but awarding additional points to registered organisations in the process of assessing tenders along specific criteria. As stressed by several Member States, it cannot be a requirement for a supplier to have EMAS, but rather it can be a plus.

One Member State (AT) gives more favourable scores to EMAS registered organisations than to organisations with other EMS, by awarding one additional point. In eleven Member States (CZ, DK, EE, FR, HU, LV, RO, ES, BG, LU, BE), public procurement legislation specifies that EMAS can be a criterion for the allocation of points or that organisations must have environmental certification on the same level as other environmental management systems. EMAS is mentioned in policy documents on public procurement in six other member States (EL, LT, NL, PT, CY, SK), whether they are action plans, national strategies or programmes. In five member States (FI, EL, IE, MT, UK), EMAS is either mentioned in guidance documents, or the inclusion of EMAS in public procurement policy is still at the discussion level. In Italy, public authorities at the regional level in Tuscany have integrated green procurement into their implementation of EMAS as an individual initiative.

Finally, Germany does not take EMAS into account in its public procurement policy because it argues that green procurement should be based on the performance of the products, not the management performance of the supplier.

Table 4.7: Incentives matrix

Country	Financial incentives	Public Procurement	Regulatory relief
Austria	No financial incentives, except funds for consultancy fees at the beginning of registration process, but not directly to org (goes to consultants)	- EMAS as a federal criteria for public procurement; for certain tenders (ex: cleaning for federal institutions), EMAS-registered gets more point than ISO-registered - It works in certain sector (ex: services, cleaning sector) but not in product sector (not a product label)	Under the 96 Environmental Management Act: small legal benefits such as simplifications of administrative procedures for organisations participating in the EMAS system
Belgium	Financial support for economic expansion consisting in an increase in percentage of investment support.	- Recent ministry bill of 5 February 2009 for the Brussels Region favours sustainable public tenders so EMAS registration can definitely be an asset but it cannot constitute a discrimination with regards to companies which have other EMS	None
Bulgaria	Registration fees are 500€ for large companies and 250€ for SMEs and for companies from developing countries	EMAS is mentioned in the Environmental act	None
Cyprus	- Subsidies for verification and consultancy fees (70% up to 4,000€ - 1,000€ for ISO-registered) - No registration fees	<i>Action Plan for Public Procurement for 2007-2010</i> did not include EMAS but the revision for 2010 should (esp. regarding construction sector)	- Relief under IPPC regulation: inspections will be facilitated for EMAS organisations (this will be applied for the coming registering pig farm) - So far nothing for non-industrial organisation
Czech Republic	Financial savings accrued from reduced operating costs (reduced energy use, reduced waste)	Public Procurement Law: EMAS or ISO 14001 can be used as a criterion in evaluating tenders (only one case where EMAS was used a criterion though); - Ministry of Environment planning measures to increase environmental aspect in public tenders but not specifically aimed at increasing the significance of EMAS/ISO14001	Law on Prevention and Remedy of Environmental Damage of 2008: it requires some companies with a high risk profile to buy insurance but those companies that have EMAS or ISO 14001 are exempt from this requirement
Denmark	- Inspection cost relief - Low registration fees	According to EU-regulation one is not allowed to require EMAS in public procurement, however EMS is taken into account in public procurement policy	- EMAS statement includes and is a substitute to the reporting obligation of Danish firms "Green Account" - EMAS is taken into account when Danish authorities decide how many inspections companies are subjected to
Estonia	Registration is free of charge and so is the renewal fee	EMAS is mentioned in the Estonian Public procurement legislation (which dates back to 2007) along with ISO14001 and not strongly emphasized	There isn't although it has been under discussion at the Ministry level at the beginning and might come back on the table
Finland	No financial incentive	Nothing special. EMAS and ISO are mentioned in the guidance on public procurement but it cannot be a requirement for a public procurement, it can only be a plus.	No regulatory relief provided. There are questions of it, but if they do it for EMAS they have to do it for ISO too and ISO is not publicly controlled so they don't want to offer regulatory relief.
France	Reduced tax rate on the TGAP (General Tax on Polluting Activities) for companies that adopt an environmentally-virtuous behaviour ²² – Set up after the Grenelle de l'Environnement but also for ISO14001	Art 45 of the new Code of Public Procurement (2006) stipulates that public authorities can set a criterion of environmental management certification of such as EMAS for their public procurement (when justified).	No regulatory relief (suspicion towards the system)

²² Circulaire n°09-013 du 20 février 2009, BOD n°6802du 24 février 2009

Country	Financial incentives	Public Procurement	Regulatory relief
Germany	Recent changes in legislation: in general companies can get refund from government if they can give a proof of good energy management, EMAS-registered companies don't need the proof, they automatically get the refund ²³ .	No advantage for EMAS on public procurement because what matters is green products and not green management	If relief were offered, it would have to be to both EMAS and ISO14001. However, as the government thinks that EMAS does not guarantee delivery of environmental performance, no relief is given.
Greece	<ul style="list-style-type: none"> - No registration fees - Funding programmes for EMAS from Ministry of Development: Programme Support for Environmental Plans, 3 cycles (A, B and C) for a total of 16,270,000€ (63% EU support, 37% national contribution) - 2 other programmes, where EMAS is seen as an advantage to get the funding: <ul style="list-style-type: none"> * "Green Enterprises 2009" (budget of €30 million) * "Green Infrastructure 2009" (budget of €30 million) 	<ul style="list-style-type: none"> - Draft action plan for the promotion of Green Public Procurement, including consultation with local authorities (1,031 questionnaires disseminated by the Ministry of Environment)²⁴ - Development of state-of-the-art guidance for green procurement of Greek hospitals: program eHospitalEMAS focused on the implementation of EMAS in the participating hospitals with actions on sustainable waste management, energy saving and promotion of green procurement. A Green Purchasing Guide for hospitals was also published and a website was set up²⁵. 	None
Hungary	<ul style="list-style-type: none"> - No registration or maintenance fee - Some funds from the ministry companies can apply for - Most importantly, companies can use consultants from the government 	National plan: <i>Public Procurement Act</i> has a paragraph on EMAS. Companies can get a certificate of EMAS or environmental audit and management scheme, which will give them an advantage on the market.	<ul style="list-style-type: none"> - Not yet, but amendment will focus on EMAS after revision of IPPC directive - Under IPPC legislation: permit for 8 years rather than 5 years
Ireland	- 85% of registration and consultancy fees is funded by government, which constitutes the strongest incentive for Irish organisations	Ministry can't privilege EMAS companies straightforwardly but can give incentives to EMS organisations. No formal strategy however.	No proper one but working on lessening the burden of licensing permits
Italy	In Italy, authorities at the regional level offer a range of incentives for EMAS registration. At the national level, financial incentives are offered to SMEs. Additional benefits include tax credits offered to EMAS registered organisations, regional tax reduction by 0.75%	The Regional Agency for the Protection of the Environment in Tuscany has integrated green procurement into their EMAS implementation, by incorporating green criteria into their intranet based procurement procedures and making the criteria available to all purchasing staff.	<ul style="list-style-type: none"> - Renewal of the IPPC permits every 8 years instead of 5 (L. n. 59/2005) and simplified procedure for permit renewal (emissions, IPPC) (L. 93/01 art.18) - Reduction up to 50 %of financial guarantees in the waste sector (L.n. 156/06) and simplified permit renewal for companies in the waste sector - Renewal of landfill permit every 5 years (L.n. 36/03)
Latvia	<ul style="list-style-type: none"> - Free registration - Funds available for technical assistance to register for organisations that come up with a solid project, funding from LIFE funds as well 	<ul style="list-style-type: none"> - CB is now looking into it. - EMAS was mentioned in a law on public procurement (before, nothing on EMS in public procurement) - Criteria are being established in a manual at the ministry level, on a sectoral basis (eg. for cleaners, etc.) 	<ul style="list-style-type: none"> - Incentives for IPPC regulation: licenses go from 5 years to 8 years - As permits are already free of charge, there is not much more than can be done to reduce costs.
Lithuania	<ul style="list-style-type: none"> - Lithuanian companies don't have any financial benefits from registering with EMAS - EMAS seminars organised are free for companies 	In 2007; the government established a Green public procurement policy, where one of green indicator to Public Green Procurement is EMAS	
Luxembourg	No registration fees	The environmental factor is more and more included into	None

²³ EEG Erneuerbare-Energien-Gesetz (Renewable Energy Act), §4

²⁴ Information available on the Internet site www.greenmed.net

²⁵ www.ecohospitals.gr

Country	Financial incentives	Public Procurement	Regulatory relief
		national policies for public procurement, but no specific approach for EMAS	
Malta	No particular financial incentives	A new committee was set up to think about EMAS in public procurement. So far, only Eco-label was included.	No specific law but an agreement with enforcing authorities on a reduction of the number of environmental inspections for when there will be more companies registered
Netherlands	No registration fee but no other financial incentive	- <i>Programme for public procurement</i> : all governmental authorities must reach 100% sustainable procurements in 2010, and local authorities 50%. - Criteria for 80 product groups for sustainability: more than 50 of these criteria have link with the management system like EMAS or ISO	- None and neither for ISO. - No fees for permit or verification already, so difficult to find other incentives for companies to take on EMAS or ISO. - Tried to offer lower frequency of verifications for registered organisations but difficult process to implement because a lot of legal problems.
Poland	Organisations have a possibility to obtain more favourable terms for insurance policies and bank loans	Working on the development of rules for public procurement policy	None
Portugal	- Subsidies for organisations that want to register (75% from Ministry of Economy, 25% from Ministry of Environment) - EMAS-registered org get 5% more subsidy than ISO-registered under specific incentive programme which has now ended and will be replaced	<i>National Strategy for Green Public Procurement</i> , adopted 7/05/2007: public institutions take into account EMAS-registered org but cannot exclude other applicants not EMAS-registered if these org comply with criteria of the public procurement.	Gentlemen's Agreement (unwritten) between CB and General Inspectorate for the Environment: EMAS-registered organisations have fewer environmental inspections
Romania	- Application available at the Ministry of Economy for SMEs to get financial help to implement EMS but none asked for EMAS yet - 25% reduction of registration fees for SMEs (fees = 100€ for large org)	Ordinance in 2006 to use EMS registration (incl. EMAS) as an incentive/award for public procurement but companies stop at ISO14001	Some regulatory relief considered regarding fewer environmental inspections for EMAS-registered sites.
Spain	- No registration fees - Financial support essential for SMEs + financial benefits from winning contracts through public procurement - 2007 Law on Environmental Responsibility ²⁶ , Art. 28 provides for exemptions on compulsory financial guarantee for EMAS and ISO14001 registered organisations - 2007 Law on Air Quality and Atmospheric Protection, Art. 21 requests the State and regional public administrations to promote environmental management	- Art. 70 of 2007 Law on public contracts ²⁷ stipulates that contracting bodies can request the presentation of certificates from independent organisations to guarantee the fulfilment of environmental management standards, such as EMAS. - Presidential Order on Green Public Procurement ²⁸ , approved in 2008 in the framework of Directive 2004/18/CE and following the study «Green Public Procurement in Europe 2005 Status overview», includes the consideration of environmental management practices of the organisations to be contracted. Little evidence that public procurement policy has provided	- 2007 Royal Decree on IPPC ²⁹ , Art. 8 provides for the simplification of verification and administrative requirements for organisations with ISO14001 and EMAS.

²⁶ LEY 26/2007, de 23 de octubre, de Responsabilidad Medioambiental

²⁷ LEY 30/2007, de 30 de octubre, de Contratos del Sector Público

²⁸ ORDEN PRE/116/2008, de 21 de enero, por la que se publica el Acuerdo de Consejo de Ministros por el que se aprueba el Plan de Contratación Pública Verde de la Administración General del Estado y sus Organismos Públicos, y las Entidades Gestoras de la Seguridad Social.

²⁹ REAL DECRETO 509/2007, de 20 de abril, por el que se aprueba el Reglamento para el desarrollo y ejecución de la Ley 16/2002, de 1 de julio, de prevención y control integrados de la contaminación

Country	Financial incentives	Public Procurement	Regulatory relief
	system in all public and private sectors of air emissions	incentive for organisations to register - Public procurement policies and regulatory relief in general are more relevant for big companies than for SMEs given the difficult tendering procedures and technical constraints faced by smaller companies - Example: the organisation that won the tender for running the Environmental Information Point of the Department of the Environment of the Balearic Islands sought EMAS registration in order to get this contract	
Slovakia	No financial incentive	- GPP National Action Plan for 2007 - 2010 which requirements are obligatory for ministers of state administration and recommended for chairmen of the municipalities - National Council of the Slovak republic Act No 25/2006 on public procurement states: Article 28– Technical or specialized skills Article 30 – Environmental management	- Act No 491/2005, on EMAS offers regulatory relief to organizations registered in EMAS, - Act No 223/2001 on Waste, Article 7-16 - Act No 364/2004 on Water, Article 21-28 - Act No 478/2002 on Air protection, Article 22 - Act No 543/2002 on Nature and Landscape Protection, Article 11-31, 46-47 - Act No 245/2003 on IPPC - Act No 272/1994 on Protection of Human Health, - Act No 587/2004 (277/2005) on Envirofund
UK	Various governmental benefits schemes	- Move to make EMS informally required in public procurement (but indistinctly ISO, ACORN or EMAS), they can't make formally compulsory though. Probably local - Many enquiries from SMEs who are panicking in global economic crisis and want to know whether EMAS will help them for public contracts	The OPRA (Operational Risk Assessment) rewards environmental certification, especially EMAS, by rating industrial sites that are EMAS-registered more favourably ³⁰ in its risk rating scheme, which means less charges and fees to the regulator

³⁰ <http://www.environment-agency.gov.uk/business/regulation/31827.aspx>

Regulatory Relief

The most common form of regulatory relief offered to organisations is found under the IPPC Regulation. Nine Member States have included provisions regarding environmental management systems in their IPPC legislation. EMAS-registered companies (along with companies which have implemented any type of EMS) are usually subject to fewer environmental inspections than other companies. In most Member States (CY, DK, HU, LV, ES, IT), this is laid down in the national legislation but in two Member States (MT, PT) it has taken the form of a ‘gentleman’s agreement’ with the enforcing authorities. In the UK, EMAS is given a higher level of recognition than ISO14001 in the OPRA risk rating scheme for industrial sites, which determines inspection frequencies.

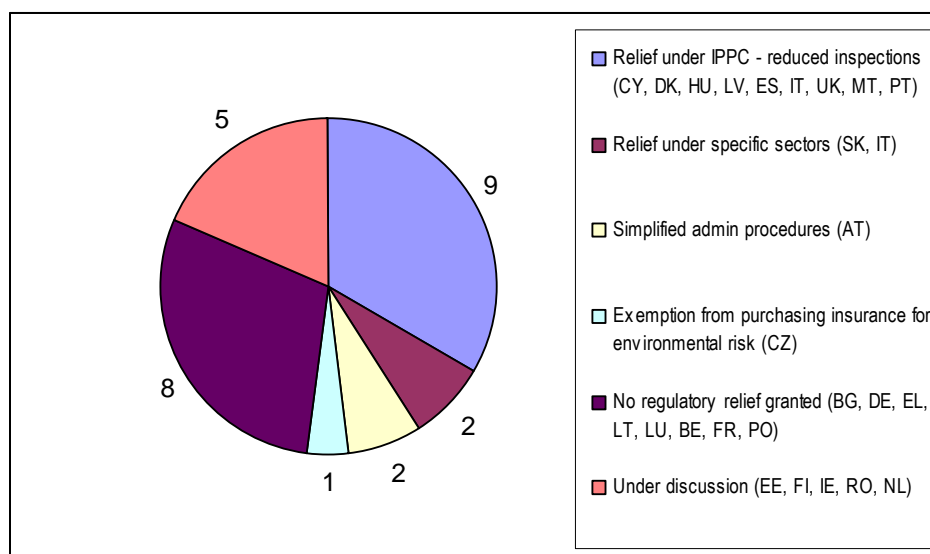
As well as offering regulatory relief to IPPC installations in the form of reduced inspections and a simplified procedure, Italy also offers organisations in the waste sector a 50% reduction in financial guarantees and simplified permit renewal. Additional relief includes an increased timeframe for permit review for the landfill sector.

Other forms of relief offered include exemptions from financial guarantee (ES, IT), or insurance requirements (CZ), simplification of administrative procedures (AT), exemption from reporting obligations (DK), regulatory relief under several sectoral acts, such as Water, Air, Waste, etc. (SK).

In five Member States (EE, FI, IE, RO, NL), no regulatory relief is offered yet, but it is under discussion. Finally, in eight member States (BG, DE, EL, FR, LT, LU, BE, PL), EMAS-registered organisations are not offered any kind of regulatory relief.

The chart below shows the numbers of Member States offering different kinds of regulatory relief to EMAS registered organisations.

Figure 4.17: Numbers of Member States to EMAS registered organisations



4.2.4. Barriers

Table 4.8 below includes the responses of the Member States competent bodies to the questions about the different kinds of barriers encountered by registered organisations or organisations which seek

registration. The results from the table are synthesized below.

Competent bodies were asked what they believed to be the most challenging requirements of EMAS for organisations. Although answers are very diverse, some patterns emerged. Several Member States noted that the weight of some requirements was greater for SMEs than for large organisations.

Competent bodies were asked to identify which of the EMAS requirements was the most burdensome for organisations, with the results briefly summarised below.

- Environmental Review: none
- Environmental Statement: AT, BG, CY, CZ, EE, FI, FR, DE, EL, IE, IT, NL, SK, BE (14 MS)
- Environmental Audit: AT, DK, EE, FR, LV (5 MS)
- Establishing an Environmental Management System: BG, CZ, DK, EE, FR, HU, LV, PO (8 MS)
- Being in legal compliance: PO, RO, ES, UK, AT, CZ, EL, HU, SK, BE (10 MS)
- Improving Environmental Performance: PO, ES, UK, AT, EE, EL, HU, BE (8 MS)

The greatest barrier according to all interviewed competent bodies is the costs of EMAS registration, implementation and accreditation. Another widely accepted criticism is that the system is seen as too complex and demanding, explaining why most organisations are put off by it. The environmental statement is also perceived as a significant burden by Member State authorities, with some doubting its value due to a lack of public interest (DE, NL).

Both the Environmental Statement and the Environmental Audit are seen as very challenging requirements by many Member States. Competent bodies think therefore that the biggest challenge faced by companies which want to implement EMAS is to go one step further than ISO14001. Most competent bodies agree that drafting the environmental statement is more demanding in terms of time- and personnel and costs than it benefits the organisation. Its purpose, of transparency and public disclosure, is undermined by the fact that there is very little public recognition of it.

However, many competent bodies agree that continuing to improve environmental performance is much harder for organisations that have been registered for a while. Indeed, after several years of being EMAS-registered, demonstrating continuous environmental improvement becomes harder than when an organisation has just entered the scheme and has a lot of scope for improvement.

The absence of national verifiers is a very serious concern for small Member States. It leads to a 'vicious circle' because the high cost of bringing an external verifier from another Member State (usually Germany as there are many verifiers there) acts as a deterrent for a lot of organisations, and very few organisations become accredited. This in turn works as a deterrent for the government, which believes that there is little interest in the EMAS scheme from organisations and does not want to spend money to train verifiers. This particular problem could be resolved if a part of the European funds available for EMAS promotion were to be devoted to the training of national verifiers.

Member States that have only recently joined the EU have noted that EMAS was one step ahead of the priorities of their organisations. These are already trying to cope with the large environmental *acquis* and cannot afford to spend more resources on the implementation of an environmental scheme. This, however, is not due to lack of effort from the competent bodies. In Romania, conferences and workshops have been and will be organised, with the help of TAIEX funds, while in Bulgaria, support to NGOs, which in turn assist organisations in the implementation of the scheme, allow the competent body not to bear all the costs of promotion. But so far, Romania has only one registered organisation and Bulgaria none.

Virtually all Member States were quick to identify the costs of implementing EMAS as a significant barrier, both the internal costs of allocating personnel and the external costs of verifiers and auditors.

In this, they agree with the results from the organisations as reported in the section above.

Table 4.8: Barriers matrix

Country	Most challenging requirements	EMAS-related difficulties	Country/company-related difficulties	Affected organisations	
				Scale	1. Sector 2. Private vs Public
Austria	<ul style="list-style-type: none"> - For new-comers: environmental statement and being in legal compliance. - For experienced organisations: improving environmental performance after more than 10 years registration. - External audit is hard for everybody. 	Internal costs (such as personal staff) and external costs (such as verifiers) are very high, it can be up to 1000€/day	Austria has many consultants to help SMEs get started and the model of environmental management is already in place there so it is less difficult for the environmental review	Harder for micro and SMEs (1/year at least)	1. Harder for trade and service sector because industrial sector is more used to verifications (combine audits for different certification)
Belgium	<ul style="list-style-type: none"> - Reaching and staying in legal compliance - Environmental statement - Improving environmental performance – it is said that most organisations do not understand what this notion entails 	Absence of strategic priorities for EMAS at the highest level	Inappropriate or inexistent staff training on environmental issues	Harder for small organisations which don't have the necessary resources for a sustainable management	1. the organisations that are the most environmentally-damaging are usually the ones that produce the best results in environmental management whereas organisations in the service sector or public sector yield very indirect results
Bulgaria	<ul style="list-style-type: none"> - Environmental statement (because little help from external consultants) - Establishing an environmental system 	Costs of accreditation by verifiers is a deterrent for a lot of organisations	<ul style="list-style-type: none"> - Vicious circle: national experts are not interested in becoming verifiers because there are no registered organisations and organisations do not register because the cost of external verifiers is too high (since there are no national ones, they ask German verifiers, who are more expensive) - Bulgaria is still implementing the EU environmental norms since entry in 2007, organisations have a lot to deal with. Bulgaria had its own national scheme before joining the EU that no company implemented, so not specific to EMAS. 		1. It is easier for the industrial sector (metal/chemicals, etc.), but a lot of them started to implement the first part of the EMAS scheme and stopped before the accreditation, because it was too expensive and they couldn't see the real benefits
Cyprus	Environmental Statement	<ul style="list-style-type: none"> - EMAS is a strict system, hard to comply with, implementing it seems like an extra effort for nothing - More complicated than Eco-label 	Cypriot companies have had to implement all EU environmental legislation since 2004 and have felt overwhelmed	Mostly SMEs affected	<ul style="list-style-type: none"> 1. In tourism sector: economic recession brought tourism down so there's no will to implement EMAS, other priorities (financial, conflict...) 2. Subsidies not yet extended to public sector (but in prevision)
Czech Republic	<ul style="list-style-type: none"> - Establishing an environmental management system - Being in legal compliance (SMEs) - Environmental statement 	Benefits from EMAS (with the exception of the company being able to claim that information was independently verified) are the same as for ISO 14001 but EMAS is more costly and more difficult to implement	<ul style="list-style-type: none"> - Some companies do not want to disclose information and the obligation to do this in EMAS scheme is a deterrent - In Czech law, EMAS is treated on the par with ISO 14001 (i.e. no additional advantage from having EMAS over ISO 14001) 	EMAS is too much of a burden for smaller companies	
Denmark	<ul style="list-style-type: none"> - Establishing an environmental management system - Environmental audit 	Costs of implementation	Funding for implementation was provided before and is not anymore (except for "aquaculture" organisations)		1. There are more registered companies in waste management than in other sectors
Estonia	- Establishing an environmental	- Cost of registration and	- lack of awareness from public, local authorities and	Mostly SMEs affected	2. Not much enthusiasm from the

Country	Most challenging requirements	EMAS-related difficulties	Country/company-related difficulties	Affected organisations	
				Scale	1. Sector 2. Private vs Public
	management system – the hardest one, means organisation need to make a decision to start dedicating to EMS - Environmental audit - Environmental statement - Improving environmental performance	implementation - Human resource efforts in implementing EMAS	organisations - better recognition of ISO14001 (300 registered-organisations with ISO) - organisations expect support from the government	by the costs	public sector yet
Finland	The environmental statement is probably the most challenging requirement for SMEs because documentation and implementation are a heavy load.	- costs are too high and benefits insufficient for companies ³¹ - human resources effort too high for SMEs, lack of knowledge and time	- no financial incentives means that companies have to bear all the costs themselves. Lack of country incentive in all fields (legislation, procurement, etc.) - they believed at the beginning that the market would create incentives for organisations to register with EMS, but it didn't work for EMAS - companies don't understand that EMS is for management and not product	SMEs find it harder to comply with requirements but the costs of registration are tailored with the size of the organisation.	n/a
France	- Establishing an environmental management system - Environmental audit - Environmental statement	- Heavy and complex system for companies - costs = 3000€ for registration then 1000€ for renewal	- lack of confidence in the system (major industrial accident during EMAS renewal) - lack of communication in France on EMAS	Mostly SMEs, and associations	
Germany	- environmental statement: more for the effort it represents than its costs + lack of public recognition of this statement	- lack of public recognition/no clear benefits in comparison with ISO14001 - failure from EU institutions to point out the real advantages of EMAS in terms of regulatory relief from EU environmental legislation	Downward trend in registration (from 3000 in 95 to 1400 today): industries disappointed because industries believed that government would change environmental policies to accommodate EMAS-registered and it didn't	Costs are not too high either for SMEs or large companies (tailored costs)	1. Industries that don't face the public directly don't see advantage of EMAS. The automotive sector is very important because faces public but more and more disappointed, will probably withdraw
Greece	- environmental statement - being in legal compliance - improving environmental performance	- the costs of implementation are the biggest challenge for companies (services of verifiers and consultants) - more demanding than ISO14001		Heavier burden for SMEs, no organised departments for EMAS registration	No info on this
Hungary	- Improving environmental performance – can get to a point where cannot go further - Establishing an environmental management system - Being in legal compliance	- Lots of complaints regarding costs, verifications are also expensive - Time consuming	- Not big weight on the market as not many registered-org - Low commitment in top management – don't see benefits - Prefer ISO 14001	Especially for SMEs	
Ireland	- Environmental statement – does take a little bit of extra work, allocation of resources to one extra person	- additional resources to implement EMAS and no clear benefits - don't see paybacks from internal resources management savings	The CB has the feeling that the Environmental Protection Agency doesn't trust the external verifiers (no indigenous ones) and so it doesn't put much money in the system, which constitutes a vicious circle	Harder for SMEs to be in legal compliance, otherwise costs depend on size so doesn't	1. Pharmaceutical sector finds it easier to be in legal compliance

³¹ <http://www.ymparisto.fi/default.asp?contentid=106310&lan=en#a1>

Country	Most challenging requirements	EMAS-related difficulties	Country/company-related difficulties	Affected organisations	
				Scale	1. Sector 2. Private vs Public
				matter	
Italy	<p>Updating the Environmental Statement seems a medium/high level hindrance for about half the organizations registered.</p> <p>Verification activities are a medium/high obstacle for the 74% of the organizations all sectors</p> <p>Legislative conformity fulfilment does not represent a heavy burden for registered organizations.</p>	Costs issues: implementing EMAS is not counter-balanced by significant benefits in particular for SME.	-Lack of human resources is a problem for 80% of all organizations Bureaucracy and management complexity represent an obstacle for the 2/3 of all the organizations	-High costs for SME in terms of money management and technical resources. -No relevant market benefits (lack of costumers).	-The implementation of EMAS seems successful as regards as the public authorities and the manufacturing sector, although most of the public authorities have been in EMAS for a short amount of time (it will take sometime to establish the existence peculiar problems in this sector) -No particular problems have been registered for large companies which seem to be interested particularly in regulatory relief.
Latvia	- the CB person thought that establishing an environmental management system was the most challenging requirement - but she believes that organisations would say that the environmental audit is the most challenging	The costs of implementing EMAS are not counter-balanced by many benefits	- lack of interest from Latvian consumers for green products - weigh of economic crisis - budget cut at the beginning of 2009, less money for these projects	It seems harder for SMEs which don't see that compared to their annual budget, costs are not so high.	1. Tradition in industrial sector where environment not seen as fostering economic benefits and ask for too many requirements, they believe they already do a lot and don't want to be asked to do more. 2. More actions towards public sector than private sector at the moment.
Lithuania	No practical experience about challenging requirements for EMAS registration	High costs of environmental audit		For all types of organization	1. All types of sector
Luxembourg			- lack of promotion and awareness among the public and companies - very little enthusiasm for EMAS in general		
Malta		Will the verifiers accept the simplified approach adopted under EMAS-easy scheme?	- no local verifiers, companies have to pay for foreign verifiers (usually German) and it costs a lot more - Companies are put off by the fact that there are no governmental incentives	Harder for SMEs	
The Netherlands	Environmental Statement - very time-consuming and doesn't bring any real extra value to the company	- With new EMAS regulation with stricter requirements, registered organisation might defect - Dutch position = stop EMAS regulation in European negotiations. ISO works very well, they use harmonised guidelines	- EMAS-registered companies use their reporting on sustainability policies for governmental authorities as basis for their environmental statement, make use of information they already have, no real commitment. - When EMAS started, Dutch industries and employers' organisations were not interested in it, had no motivation or stimulation for it. So if the industry has a negative view of	- mostly large firms are EMAS-registered because obliged by their headquarters	1. Most companies registered for ISO come from the industrial sector., so they would not go for EMAS because competitors are with ISO. 2. Public sector and the service sector are not very highly represented, even in ISO

Country	Most challenging requirements	EMAS-related difficulties	Country/company-related difficulties	Affected organisations	
				Scale	1. Sector 2. Private vs Public
		throughout the country, and can control the quality of certificates without any problem, they don't need something else	EMAS government doesn't want to put money on it, not going to be used		
Poland	<ul style="list-style-type: none"> - Environmental Review - Environmental Audit - Environmental Statement – high degree of complexity 	The complexity of the registration procedure and the frequency of evolution of the declaration are deterrent to organisations		The system is too complicated for SMEs	
Portugal	<ul style="list-style-type: none"> - Establishing an environmental management system - Being in legal compliance - Improving environmental performance 	Associated costs to EMAS-registration, especially the cost of the audits - very expensive	<ul style="list-style-type: none"> - Employee's involvement in EMAS registration process, more difficult for older workers to integrate the environment management system (linked to their education, etc.) - lack of human resources dedicated to EMAS-registration and of recognition by public institution 	Higher barriers for SMEs (costs of educational programme and training, etc.)	1. More complex for org from industrial sector because more complex legal requirements and better compliance required + hard to follow more and more challenging market targets and EMAS.
Romania	<ul style="list-style-type: none"> - Being in legal compliance → very dynamic process especially for young MS 		There is a lack of top-management commitment because costs vs benefits shows it doesn't really work	Harder for SMEs in the more polluting sectors	
Spain	<ul style="list-style-type: none"> - Being in legal compliance, especially for SMEs as a result of a lack of knowledge - improving environmental performance can be hard, especially when the organisation has witnessed an uneven year 	<ul style="list-style-type: none"> - costs of implementation and of certification are very high, in particular the costs of external consultants, auditors and certifications - some companies complain of the delays from external auditors 	The government of the Balearic Islands specifies that companies may implement EMS internally but will not seek external certification because there are no market benefits from it	The costs are particularly high for SMEs	1. The government of the BI explains that some companies that manage toxic waste and are EMAS-registered have had extra costs to deal with non-EMAS registered organisations. The service sector can suffer from administrative difficulties
Slovakia	<ul style="list-style-type: none"> - Environmental statement - Being in legal compliance 			Greater difficulties for SMEs and local companies	1. the construction sector has been the keenest on implementing EMS
UK	<ul style="list-style-type: none"> - Being in legal compliance - Improving environmental performance → demonstrating (continuous environmental) improvement is probably more difficult for organisations under EMAS and than under ISO 14001 	Costs of registration and verification, no clear benefits for these costs.	Only 67 registered org, half of which are local public bodies, number of registration is going down because of credit crunch + restructuring of public local authority management, they stop at ISO14001 (6000 ISO-registered organisations)	Difficulties are related to the size of the company	<ol style="list-style-type: none"> 1. It is hard to quantify the costs of EMAS implementation for private comp/NGOs/charities, the CB is trying to do it. 2. It seems that public authorities get help from government, where private companies don't.

Several Member States said it was difficult to persuade organisations of the value of EMAS, given the general lack of awareness and demand amongst customers and the public and the unclear benefits (FI, CY, IE, LV, UK, NL, RO, LU). This also echoed the organisations, where 'unclear benefits' was the barrier identified by the highest number of organisations. Officials from Germany regretted the lack of clear EU level direction regarding awarding regulatory relief to EMAS registered organisations, indicating that the failure to deliver regulatory relief has led to a downward trend in registrations in Germany.

All competent bodies agree that barriers are especially significant for SMEs. The costs of implementation and of verification are evidently harder to support for SMEs than for large organisations, which often have a specific budget for environmental management. The administrative burden of registration does not fall equally on different sized organisations because, while many large companies have their own EMS unit, SMEs generally do not have sufficient staff to dedicate one position entirely to environmental management. This may make SMEs more likely to require higher levels of external assistance from costly consultants than larger firms that may have expertise in house. However, several competent bodies note that, in their country, the costs of registration are tailored to the size of the organisation, with the specific aim of reducing the burden.

Member States were also asked which sectors have more difficulties implementing EMAS. On the one hand, it was reported by several competent bodies (AT, BG, DK, DE, BE, IT) that the implementation of EMAS is easier for the industrial sectors than for the service and trade sectors. Their argument is that industries companies already have many years of environmental requirements behind them as they have had to face increasingly more stringent legislation, such as the IPPC regulation. Their experience of, and resources for, environmental compliance is stronger, which makes it easier for them to implement an environmental management system. On the other hand, competent bodies explained that since these sectors already have to follow a lot of stringent environmental rules they will only do more on the environmental front if it will secure added value, in the form of clear benefits.

Germany particularly identified those industrial sectors that directly supply the public as having incentives to register with EMAS, drawing on the example of the automotive sector. This echoes the results of the survey and interviews with organisations, where suppliers to the German automotive sector found clear benefits from EMAS registration as a result of client demand.

Regarding the service sectors, several competent bodies noted that these sectors lack specific experience in meeting environmental requirements and therefore found the development of an EMS more challenging. Several Member States identified the global economic recession as a causal factor in a decline in the number of registrations (UK, ES, and CY). In general, interest in EMAS from the public section remains low.

The comparison between ISO14001 and EMAS was made by most competent bodies, which underlined that, in general, organisations cannot see the point of going beyond the requirements of ISO14001, since in most cases there is no clear advantage of being EMAS-registered rather than ISO14001-registered. In some Member States (NL, UK) ISO 14001 is clearly favoured over EMAS meaning there is greater recognition in the supply chain, both nationally and beyond EU borders. Many Member States are reluctant to favour EMAS over ISO14001, because they have a lot of ISO-registered organisations and do not want to discourage them. It was also reported that there is a significant lack of awareness and interest from public bodies and local authorities regarding EMAS, which could otherwise be strong assets for the scheme. Furthermore, competition rules mean that Member States cannot favour EMAS organisations over ISO14001 organisations in certain types of legislation, such as public procurement legislation.

Some small Member States that have recently acceded to the EU reported that one of the major problems they are facing regarding EMAS is that they do not have their own national verifiers, meaning that organisations have to pay for foreign verifiers to verify and accredit their sites, entailing high prices as acting as a barrier to registration. Low numbers of EMAS registrations mean that it is

not attractive for national experts to train as verifiers, and at the same time national organisations do not register because the cost of foreign verifiers is too high. This particular problem was reported by Bulgaria, Ireland and Malta but probably also occurs in other Member States.

4.2.5. Benefits

During the interviews, Member State Competent Bodies were also asked to summarise their perception of benefits that can accrue to organisations participating in EMAS. Competent Bodies from several of the new Member States where the number of registered organisations remain low or at zero found it difficult to identify direct benefits at this early stage due to limited experience. Officials from Finland and France reported very few benefits to organisations from EMAS registration. However, a range of benefits were highlighted by Member States and the results of this line of investigation are briefly summarised below.

Increased efficiency and better management of emergencies

Competent bodies identified benefits related to increases in the efficiency of their operations and/or production (IT, AT, DK). In addition, an increased capacity to respond to emergency situations was identified as a benefit.

Legal compliance

Assurance of legal compliance was identified as a benefit by from several Member States (HU, IT, AT).

Improved image

Competent bodies asserted that EMAS registration gives organisations the right to claim that their environmental credentials have been verified by an external body. This can lead to an improved image and an increase in their competitiveness on the market (UK, HU, CZ), in particular when companies are close to consumers (DE). In addition, the Slovakian Competent Body indicated that such improvements in image can lead to better relations with banks, insurance companies and other financial institutions.

For public authorities, improved image through demonstrating a commitment to transparency was identified as a key benefit (UK).

Access to markets

Improved access to markets was identified as a benefit (NL, IT, HU). This was particularly highlighted by the Netherlands, with relation to companies seeking access to the German market.

In addition, Competent Bodies identified access to public procurement opportunities requiring an EMS as an application criterion as a benefit of being EMAS registered.

Improved relations with regulatory authorities

Competent bodies in Poland, the Czech Republic and Italy noted that EMAS registration can lead to improved relationships with environmental inspectors and other local authorities involved in permitting organisations.

5. Analysis of the costs and benefits of EMAS to registered organisations

The objective of this chapter is to quantify as far as possible the costs and benefits of EMAS for the organisations surveyed and interviewed in earlier tasks. The methodology used to derive estimates of these impacts is first introduced, followed by the results and conclusions.

5.1. Analytical Approach

The study aimed to assess the costs and benefits arising from the adoption of EMAS by different organisations, including small and larger organisations from both the public and private sectors, from different industry sectors across all EU Member States. Information on the costs and benefits of EMAS was gathered through the questionnaire survey and follow-up interviews described in Chapter 3. Quantitative information from these sources was recorded in linked spreadsheets to enable a comparison of responses and the identification of key trends in the data.

From the outset of the study, it was clear that the methodology adopted must evaluate and compare a mixture of both qualitative and quantitative information. The majority of the cost data collected in the survey consisted of monetary estimates of the registration and external consultancy costs incurred by each organisation, but benefits were generally reported in qualitative terms, for example improved public and customer relationships through increased transparency on environmental activities. Consequently, it is possible to estimate the monetary costs of EMAS by individual organisation and by groups of organisation sharing the same geographical or business characteristics. However, it has only been possible to provide quantitative estimates of the benefits in individual cases where the data allows, representative of the types of benefits which may be applicable to organisations with similar characteristics. A limited comparison of costs and benefits is therefore possible.

5.1.1. Benefits Assessment

Respondents to the survey were asked to identify the significance or importance of various benefits to their organisation resulting from EMAS adoption. Respondents were then given the opportunity to quantify the estimated annual size of the benefits they had previously identified, in terms of percentage savings or as monetary values in Euros.

Similarly, respondents who indicated that EMAS registration had assisted their organisation to compete more effectively, or win more contracts in the public sector, were asked to provide an indication of the number of contracts and/or the value of contracts affected. As discussed earlier, the amount of quantitative data provided was low, preventing the use of the approach adopted for the cost estimates. Instead, representative examples from survey responses and telephone interviews are presented and compared to the average costs for organisations with similar characteristics.

5.1.2. Cost Assessment

Information gathered from the online survey on costs included the following:

- the person-days required by each organisation to first implement EMAS and then maintain it in subsequent years, for each EMAS administrative task (external consultancy support, environmental review, EMS development, internal audit and preparation of statement, staff training, EMAS logo attachment to products and documentation, modifications to IT systems and final publication of EMAS statement);

- the fees and costs charged to organisations to register, validate and verify registration, including capital costs for IT (i.e. new software), stationary , publicity material and other capital expenditure costs;
- typical daily or annual full-time equivalent (FTE) costs of staff by grade (including external consultant, internal manager and internal administration), and
- other costs or information not identified above, but which has been provided by some consultees.

Much of the above information was collected through organisations indicating which range of person days and costs were most applicable regarding EMAS adoption. For the purposes of analysis, the median value within each range has been used for calculating the relevant costs.

Where respondents to the questionnaire were able to enter open ended information, many provided estimates of the total costs of the EMAS registration process, not broken down by validation, registration and verification charges. In order to prevent the misrepresentation of this information in the final analysis, three categories of costs have been calculated. The cost components and calculation method of each cost are summarised in Table 5.1.

Table 5.1: Summary of Calculated Costs and Assumptions

Cost	Components	Staff Grade Responsible*	Calculation
Fixed – fixed costs faced by the organisation to register with EMAS, assumed to be unrelated to staff numbers	Registration Fee	N/A	Total of the identified cost components in the first year of EMAS implementation and annually thereafter
	Validation and verification fees		
	Capital IT system costs		
	Fixed costs of adding EMAS logo to stationary and producing publicity material		
	Capital expenditure		
	Other fixed costs		
External – costs incurred by employing external expertise to support EMAS implementation and reporting	External consultancy	External consultant	Person-days multiplied by daily rate. First year and subsequent annual costs of EMAS registration calculated.
Internal – costs incurred internally by organisation staff to implement, administer and report on EMAS	Environmental review	Internal manager	Person-days multiplied by daily rate. First year and subsequent annual costs of EMAS calculated
	EMS development		
	Internal audit		
	Preparation of EMAS statement	Internal administrator	
	Internal staff training	Internal manager	
	Attaching EMAS logo	Internal administrator	
	Modifications to IT systems		
	Publication of Statement		
Other admin related costs			
* Assumed unless otherwise stated by survey respondent			

It is possible to identify how each of the three cost categories varies between the first year of registration and subsequent years. Similarly, it is possible to assess trends in the costs due to changes in fees, charges and fixed investments, compared to the staff costs borne internally and externally to implement EMAS.

It has also been possible to calculate average costs across the entire sample of respondents for each cost category by groups of organisation with the same characteristics. For example, average costs have been calculated by organisation size (micro, small, medium and large enterprise) and region of Europe in which the organisation is EMAS registered (Southern, Northern, and New Member States of Europe).

The results of this assessment are presented below by average organisation and disaggregated by key organisation characteristics (size, public or private ownership, geographical location and sector - manufacturing or service). This enables comparison of costs against benefits in a consistent manner and ensures that clear conclusions can be reached regarding the expected costs and benefits each type of organisation is likely to expect should they adopt EMAS.

5.2. Benefits to Individual Organisations

5.2.1. Micro Organisations

When asked about the benefits of EMAS, 21% of micro organisations identified energy and resource savings as the most important. This was confirmed by the interviews with micro organisations.

One interviewee (a small public local authority in Germany) indicated energy cost savings of 5% and resources savings of 10% following adoption of EMAS. Another interviewee (a local area representative organisation in a new Member State, Romania) reported a 2% saving in energy. Assuming average consumption of gas and electric for micro enterprise is around 25% that of the average for medium sized users³² and applying average prices for industrial end-users³³, excluding VAT in the relevant Member State, a 2-5% cost saving equates to approximately €4,000-€10,000 for the German organisation and €3,000-€6,000 for the Romanian organisation.

Several micro enterprises highlighted that a key benefit of EMAS was gaining access to public contracts. Estimates of the increase in contracts won by the organisations in question ranged from two contracts to a 30% increase. Although detailed information on the size of contracts was not provided, it certainly appears possible that these might exceed the expected cost of €22,500 for first-year registration and the €10,000 cost in subsequent years. However, interviewees noted that financial benefits from new contracts are not applicable to many public organisations, such as churches and local authorities. Instead, these organisations are motivated by their responsibility to protect the environment and set an example for others within the community.

5.2.2. Small Organisations

Small organisations identified the same benefits as micro organisations as the most important, in similar proportions. A selection of responses from small organisations concerning the scale of benefits is presented in Table 5.2.

³² According to Eurostat (2008): *Panorama of Energy* this would equate to annual consumption of 500 MWh of electricity and 10,000 GJ of gas.

³³ Eurostat (2008): *Panorama of Energy – Energy Prices and Taxes by Member State in 2007*, pg. 117- 119

Table 5.2: Summary of EMAS Benefits Reported by Consultees

Small Organisation	MS	Sector	Estimated Benefit
A	Cyprus	Private	Costs saving of 11% from reduced energy use Costs saving of 2% from a more efficient use of resources
B	Spain	Private	Costs saving of 2% from reduced energy use
C	Italy	Public	Cost saving of €100,000 from reduced energy use Cost saving of €20,000 from a more efficient use of resources
D	Spain	Private	Cost saving of 10% from a more efficient use of resources

The four examples in Table 5.2 indicate that the energy and resources savings attributed to EMAS by the organisations are substantial. Based on the estimated energy savings calculated for micro organisations, and assuming energy consumption is generally higher for small compared to micro organisations, it is plausible to suggest that energy savings could exceed €20,000 per year. Assuming that savings from improved resource efficiency are of a similar order, total annual savings may exceed annual costs by a factor of two. However, all four consultees also stated that they received financial support or funding to register, with one respondent stating that, without the initial funding support, it would not have adopted EMAS.

5.2.3. Medium Organisations

More survey responses from medium sized organisations, compared to other sized organisations, identified reductions in negative incidences and energy/resource savings as the most significant benefits of EMAS. Increased market opportunities and improved stakeholder relationships were also highlighted as important benefits. One private organisation from Germany estimated energy savings of around 13.5%. Applying the approach used in the previous examples to the average electricity and gas consumption of medium sized enterprises³⁴, this equates to just over €100,000 in energy savings resulting from EMAS. (Incidentally this estimate is approximately equal to the estimated total savings given by the organisation when interviewed for 2007/08). Another medium organisation in the private sector from Sweden estimated savings of €80,000, €100,000 from more efficient use of resources (particularly regarding reduce waste) and €2,000 in legal savings due to reduced costs of new permits.

5.2.4. Large Organisations

30% of large organisation respondents identified reduced energy use as the main source of financial saving from EMAS, with more efficient use of resources second (29%) and legal cost savings third (12%). A summary of these benefits quantified by consultees in interviews is presented in Table 5.3.

³⁴Eurostat (2009) estimates that 42,000 GJ of gas and 2,000 MWh of electricity are consumed on average by medium size industries. Tables downloadable at: <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsier040> and <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsier050>

Table 5.3: Summary of EMAS Benefits Reported by Consultees

Large Organisation	MS	Sector	Estimated Impact
A	Germany	Private	5% cost saving from reduced energy use 5% cost saving from more efficient use of resources, including recovery of waste products
B	Greece	Private	2% cost saving through more efficient production techniques 3% cost saving from reduced energy use 2% cost saving from more efficient use of resources, including recovery of waste products 2% cost saving on legal procedures 100% increase in access to government grants/funding
C	Germany	Private	Cost saving on legal procedures from reduced permit fees (estimated to be expensive)
D	Italy	Public	Access to grants and funding /new contracts won to the value of €2,000,000
E	Italy	Public	10% cost saving through more efficient production techniques 60% cost saving from reduced energy use 30% cost saving from more efficient use of resources, including recovery of waste products
F	Spain	Private	10% cost saving on legal procedures
G	Spain	Private	5% cost saving from reduced energy use 5% cost saving from more efficient use of resources, including recovery of waste products

As an illustrative example, using the methodology described earlier to calculate energy cost savings³⁵, applying German energy prices to an indicative saving of 5%, large organisations might be expected to achieve benefits of around €400,000.

5.2.5. Public and Private Organisations

Although it is difficult to quantify the different benefits associated with public and private organisations, the interviews highlighted some interesting factors. Firstly, many public organisations stated that they received grants or financial support from European initiatives such as Life projects and from national governments. This was suggested as a reason why so many public organisations have adopted EMAS in countries such as Spain and Italy. In another example, a private organisation in the Basque region of Spain indicated that it can recover 75% of the total cost to hire consultants to carry out an energy audit and other implementation costs when implementing energy efficiency measures.

5.2.6. Manufacturing and Service Organisations

In terms of the benefits that can be expected by service and manufacturing sectors, the survey response and interviews (See Chapter 4) indicate that reduction of negative incidents and energy savings are far more important to the manufacturing sector; whereas service sector organisations place greater emphasis on setting an example to others (e.g. public organisations) or achieving market recognition from customers and the general public. Interestingly, improving stakeholder relations was particularly

³⁵ Eurostat (2009) estimates that 420,000 GJ of gas and 24 GWh of electricity are consumed on average by large industrial users. Tables downloadable at:

<http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsier040> and <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsier050>

important to the chemicals and utilities companies, potentially because these organisations may otherwise find public perceptions of their environmental performance to be negative, making permit applications and gaining planning approval for new facilities difficult. Although a quantitative comparison between manufacturing and service sectors is difficult, it is clear from the sample of responses that the tangible benefits appear greater for manufacturers compared to service organisations.

5.3. Costs to Individual Organisations

5.3.1. Overall Results

Based on the complete sample of responses, the average fixed, internal and external costs of a typical EMAS organisation are presented in Table 5.4. These costs have been calculated for the first year of implementation and annually thereafter.

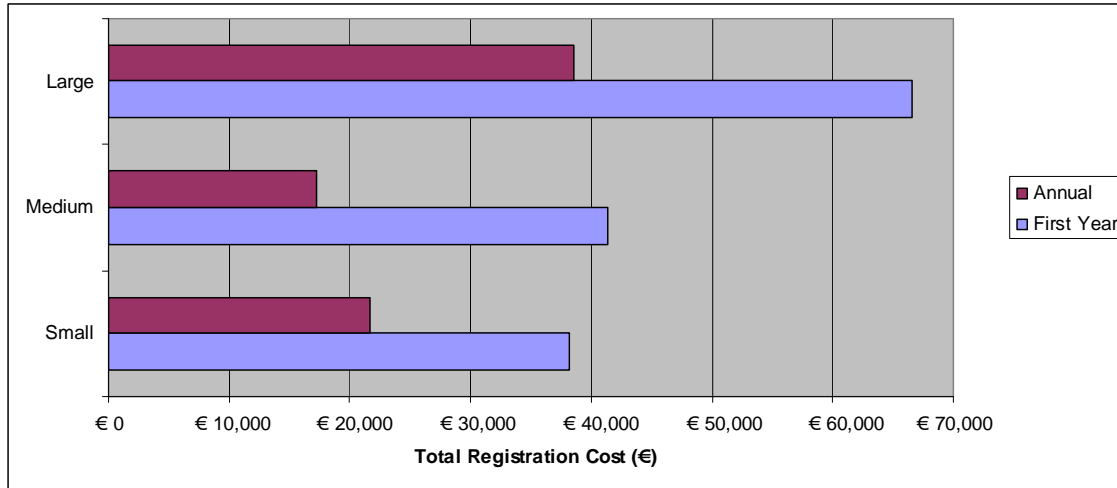
Table 5.4: Estimated Average Costs – Complete Sample

Cost	First Year (€)	Annual (€)
External	6,688	2,536
Internal	22,814	14,410
Fixed	18,629	8,997
Total	€48,131	€25,943

The results indicate that substantial costs are likely to be incurred in the first year of registration, in understanding EMAS requirements, establishing the necessary management and administrative systems, often requiring expert advice from outside the organisation. The results of our analysis indicate that total costs in subsequent years are around half of those in the first year, on average. External consultancy costs show the largest reduction, with subsequent year costs approximately one third of those incurred in the first year.

The results vary by organisation size; Figure 5.1 illustrates the differences in total average costs by size of organisation.

Figure 5.1: Total Average Registration Costs by Organisation Size



The first year costs appear higher than the estimates derived from the “EMAS Toolkit”, which ranged from €10,000 for a micro organisation to €50,000 for a large organisation, but are lower than the costs identified by Clausen for Austria, Denmark and Germany (see Section 2.5, Table 2.5). The annual costs in subsequent years are closer to the range identified by the “EMAS Toolkit”. However, as previous studies did not differentiate between implementation and annual maintenance costs of EMAS, there are limits to the potential for comparison.

Figure 5.2 shows the external costs of registration. As might be expected, these are significantly higher in the first year, when achieving registration, than in subsequent years.

Figure 5.2: External Registration Costs by Organisation Size

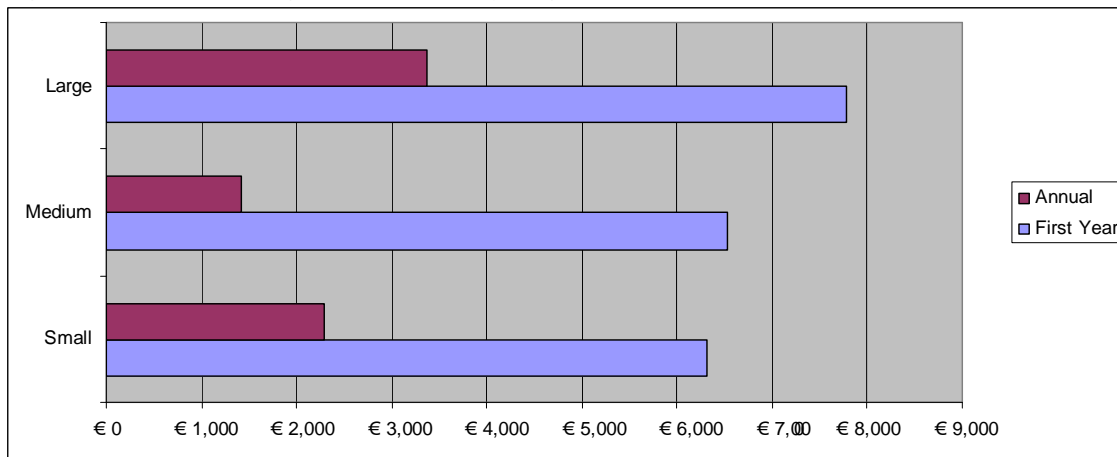


Figure 5.3 breaks down the internal registration costs by organisation size. These costs are also significantly higher in the first year, indicating that considerably more staff effort is required to achieve registration than to maintain it.

Figure 5.3: Internal Registration Costs by Organisation Size

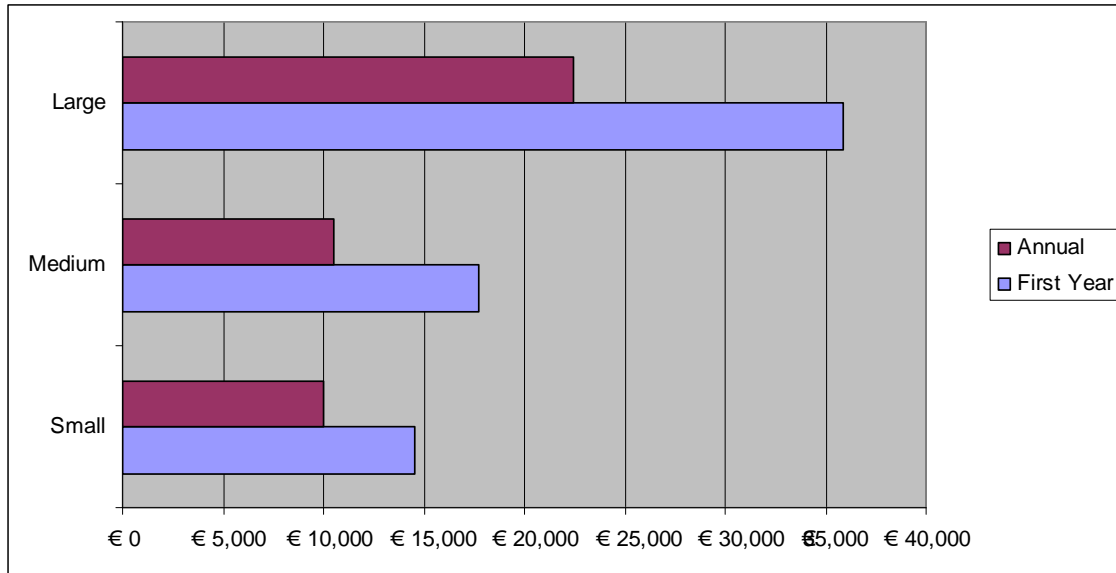
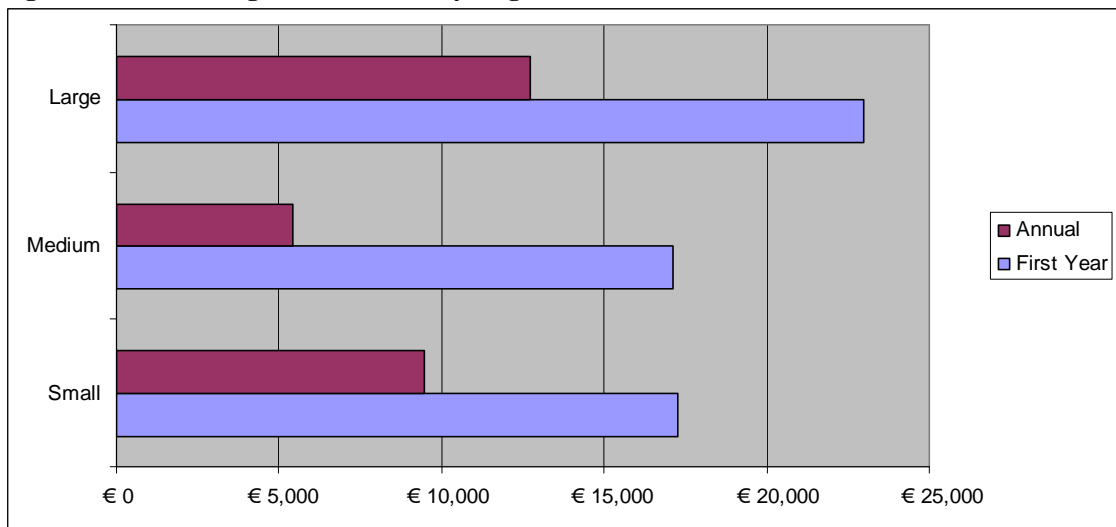


Figure 5.4 provides a breakdown of the fixed costs of registration by organisation size. These follow a similar pattern to the internal and external costs

Figure 5.4: Fixed Registration Costs by Organisation Size



5.3.2. Micro Organisations

The total costs of EMAS registration for organisations describing themselves as micro organisations (those with a turnover equal to or below €2m, or 10 employees), are estimated at €22,500 in the first year and nearly €10,000 annually in subsequent years. This suggests the costs incurred by the smallest organisations are likely to be less than half those faced by an average sized organisation.

Table 5.5 examines the costs in more detail. The internal costs to micro organisations are around a third of those for the entire sample, but the fixed and external costs in the first year are over half the average estimate. This suggests that costs in the first year may be a greater barrier to adoption for the smallest organisations than for the average.

Table 5.5: Estimated Average Costs – Micro Organisations

Cost	First Year (€)	Annual (€)
External	3,712	1,005
Internal	7,109	5,021
Fixed	11,655	3,842
Total	€22,476	€9,867

The annual costs appear consistent with the estimates of the “EMAS Toolkit” for very small companies. In addition, the order of magnitude change in costs between organisations of different sizes would also appear to be consistent, at approximately double the micro organisation costs for small organisations and nearly three times the small organisation costs for large organisations. The exception to this rule appears to be medium organisations, which are estimated to incur costs similar those of smaller organisations in our analysis.

5.3.3. Small Organisations

The average costs of EMAS registration for small organisations, with an annual turnover between €2 million and €10 million, employing 10-50 people, are presented in Table 5.6. Although annual costs are lower than those incurred in the first year of EMAS registration, fixed annual costs for small organisations appear to be larger than the average across all organisations in the sample. External consultancy and fixed costs in the first year were also similar to the average, suggesting that, proportional to organisation size, the cost burden may be greater than expected for small organisations. First year and annual internal costs were, however, approximately two thirds of the sample average.

Table 5.6: Estimated Average Costs – Small Organisations

Cost	First Year (€)	Annual (€)
External	6,316	2,283
Internal	14,567	9,958
Fixed	17,281	9,453
Total	€38,164	€21,695

5.3.4. Medium Organisations

Data for medium organisations (with a turnover between €10 million and €50 million and 50-250 employees) suggest that internal costs constitute the greatest burden on organisations when implementing EMAS. This is illustrated in Table 5.7. Fixed and external consultancy costs incurred in the first year by medium organisations are of a similar magnitude to the average for the entire sample and close to the costs faced by small organisations. However, fixed and external costs in subsequent years were estimated to be much lower for medium organisations than for small organisations, suggesting the potential for economies of scale.

Table 5.7: Estimated Average Costs – Medium Organisations

Cost	First Year (€)	Annual (€)
External	5,957	1,422
Internal	17,145	9,989
Fixed	16,996	5,279
Total	€40,098	€16,690

5.3.5. Large Organisations

The costs to large organisations (with an annual turnover over €50 million and employing more than 250 people) are summarised in Table 5.8. As expected, the costs are much higher than the total sample average, owing to the larger number of sites, activities and staff potentially involved in EMAS related activities. Total first year costs to large organisations were almost 40% above the average and total subsequent year costs were almost 50% higher than the average. In both the first and subsequent years, internal costs appear to be the highest contributor to total costs, supporting the hypothesis that larger organisations require greater staff involvement in training, auditing, and environmental reporting. As external consultancy costs are only just above the average, it may also be the case that larger organisations undertake more of the work of initial registration themselves, rather than relying on external consultants, as they have greater resources and expertise available.

Table 5.8: Estimated Average Costs – Large Organisations

Cost	First Year (€)	Annual (€)
External Consultancy	7,773	3,377
Internal Staff	35,841	22,471
Fixed	22,982	12,698
Total	€66,596	€38,546

5.3.6. Public and Private Organisations

Calculating the average costs of EMAS adoption by ownership structure allows differences between the costs faced by public and private sector organisations to be highlighted. Table 5.9 presents the estimated costs.

Table 5.9: Estimated Average Costs – Public and Private Organisations

Cost	First Year (€)	Annual (€)
Public Organisations		
External Consultancy	8,992	2,461
Internal Staff	20,304	14,241
Fixed	17,538	6,199
Total	€46,835	€22,901
Private Organisations		
External Consultancy	5,975	2,569
Internal Staff	23,085	14,458
Fixed	19,283	10,004
Total	€48,343	€27,031

The data indicate that:

- both first and subsequent years, the costs of EMAS registration are slightly higher for private organisations than public organisations (5% higher in the first year and 18% higher in subsequent years);
- public organisations appear to incur significantly higher external consultancy costs than private organisations in the first year (See Figure 5.5 below);
- internal costs appear to be broadly similar in magnitude for public and private organisations,

and

- fixed costs appear to be higher for private organisation, compared to public organisations (See Figure 5.6).

Figure 5.5: External Costs for Public and Private Organisations

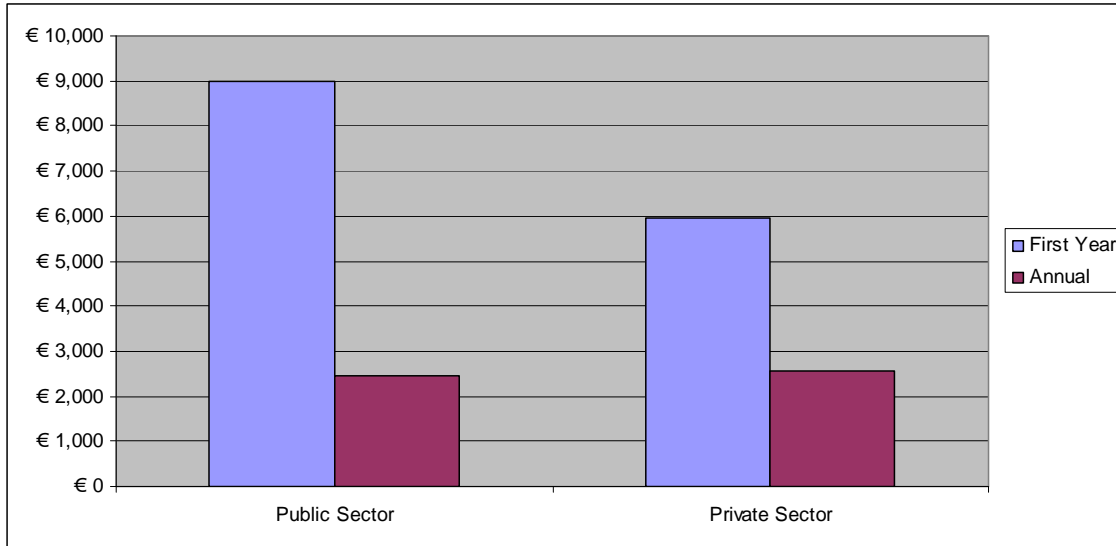
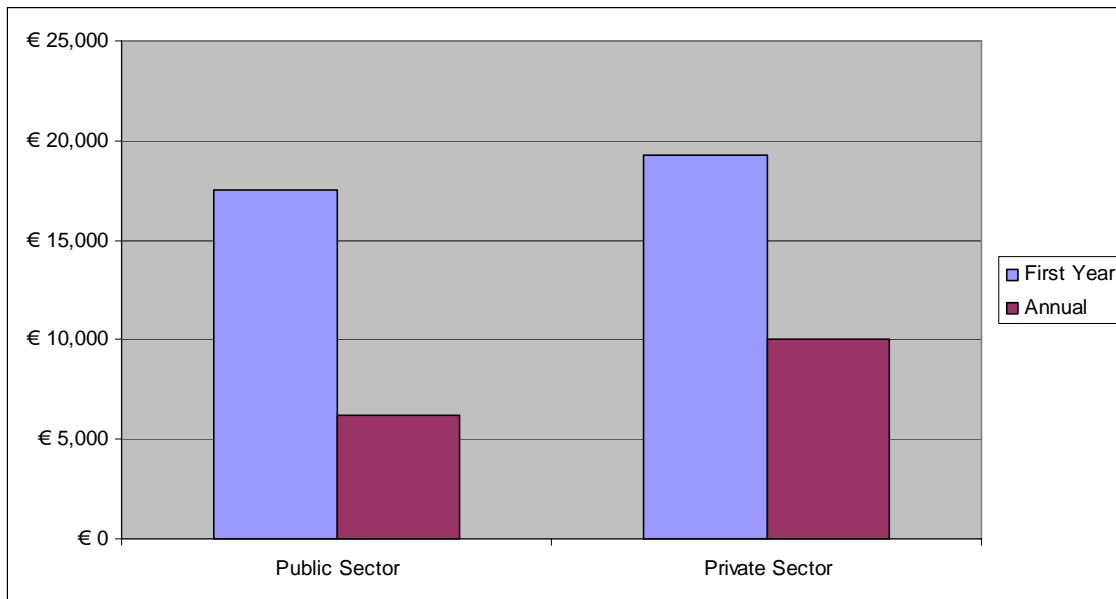


Figure 5.6: Fixed Costs for Public and Private Organisations



5.3.7. Geographical Differences

The extent of EMAS adoption varies considerably between Member States. In order to determine the role of cost in influencing EMAS uptake, the costs of EMAS registration have been calculated by region as follows:

- **Northern Europe** – Austria, Belgium, Denmark, Finland, Germany, Ireland, Luxembourg, Netherlands, Sweden and the UK;
- **Southern/Mediterranean Europe** – Cyprus, France, Greece, Italy, Malta, Portugal and Spain;
- **New Member States** – Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia.

It was necessary to group Member States in this way in order to gather a large enough sample to make the results meaningful, as in some Member States only a single survey response was received.

The costs estimated for these groups of countries are presented in Table 5.10 below. The results indicate that, on average, EMAS registration costs are higher than in the Northern European countries than those in any other region. This may however be due to differences in the cost of living in different regions, reflected in wages, etc. In order to test this hypothesis, Table 5.11 presents the average comparative price levels³⁶ for Northern, European and New Member States. By indexing the total costs for the different regions identified (total EU-27 = 100), differences can be highlighted. The results indicate that there is a strong correlation between the estimated costs of EMAS and the comparative costs of living in each region, suggesting that our results are at least partially driven by price differences in each Member State. External and internal costs also appear to be above the average for the entire sample in Northern Europe. However, fixed costs are estimated to be below the average. Our results are also consistent with those reported in the literature review (See Section 2.5) which shows that the costs incurred in Hungary are significantly lower than those experienced in Austria, Denmark and Germany.

Table 5.10: Estimated Average Costs by European Region

Cost	First Year (€)	Annual (€)
<i>Northern European Member States</i>		
External Consultancy	9,643	2,923
Internal Staff	34,423	18,902
Fixed	13,137	8,077
Total	€57,203	€29,902
<i>Southern European Member States</i>		
External Consultancy	4,403	2,371
Internal Staff	15,286	10,731
Fixed	22,180	9,894
Total	€41,868	€22,996
<i>New Member States</i>		
External Consultancy	6,147	1,563
Internal Staff	19,982	22,292
Fixed	4,821	3,033
Total	€30,951	€26,888

³⁶ Comparative price levels are the ratio between Purchasing power parities (PPPs) and the market exchange rate for each country. This ratio is shown in relation to the EU average (EU27=100). The average was calculated for each group of countries highlighted above based on data available for 2008. Ratios for each Member State available at:

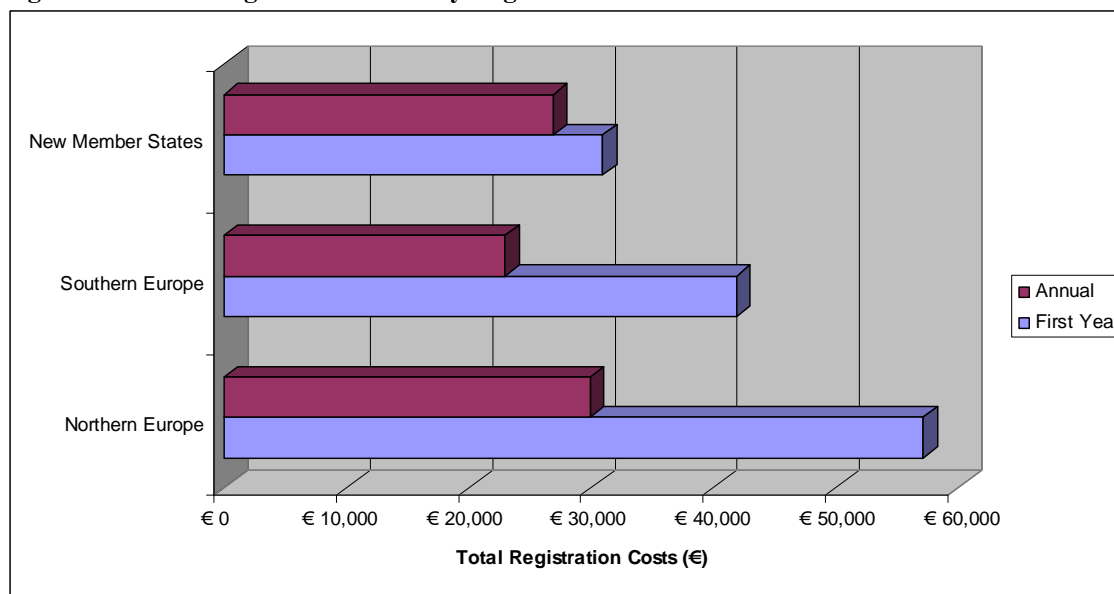
<http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsier010>

Table 5.11: Estimated Difference in Internal Costs and Comparative Price Levels by Region

Region	Estimated Total Cost		Estimated Comparative Price Level*
	First Year	Annual	
<i>EU-27</i>	<i>100</i>	<i>100</i>	<i>100</i>
Northern European Member States	119	115	114.5
Southern European Member States	87	89	94.4
New Member States	64	103	69.5
*If the index is higher than 100, the region concerned is relatively expensive as compared to the EU average. If the index is lower than 100, it is relatively cheaper.			

First year internal and external costs of EMAS implementation for the southern European region are less than two thirds of the average for the entire sample and less than half those for northern European countries. Nevertheless, fixed costs are estimated to be above the average in both the first and subsequent years. Overall, costs incurred annually in southern Europe are estimated to be lowest out of all regions, largely driven by the lowest internal staff costs of implementing EMAS. The total costs estimated in each region are presented in Figure 5.7.

Figure 5.7: Total Registration Costs by Region



For new Member States, the first year costs of adopting EMAS are estimated to be the lowest in the sample; however, costs are predicted to be higher than for southern European countries in subsequent years, equating to just above the average for the sample. This result is driven by internal staff costs, which are estimated to be around 50% higher than the average. Looking at the sample from New Member States more closely, one particular outlier organisation appears to account for a significant proportion of this high value. Annual costs for other respondents are around a third of those estimated in other regions; however, first year costs for consultancy and internal staffs are close to the average.

5.3.8. Manufacturing and Service Organisations

In order to identify any differences in the costs incurred by manufacturing and service sector organisations, costs have been derived for these two groups; these are summarised in Table 5.12.

Table 5.12: Estimated Average Costs by Sector

Cost	First Year (€)	Annual (€)
Manufacturing		
External Consultancy	6,079	2,272
Internal Staff	22,205	13,773
Fixed	21,756	8,388
Total	€50,041	€24,433
Services		
External Consultancy	6,701	2,640
Internal Staff	19,250	11,887
Fixed	14,927	5,539
Total	€40,877	€20,066

Organisations in the service sector appear to incur lower costs than those in the manufacturing sector. However, external consultancy costs are slightly higher for service organisations. This could be explained by the fact that systems and staff in the manufacturing sector may be better prepared for EMAS, due to experience with other management systems, such as quality control, or because of the

need to comply with regulations such as IPPC. This may also explain why internal staff costs are higher in manufacturing than for service sector organisations. Fixed costs also appear to be higher in the manufacturing sector, where they are above the average in the first year compared to the entire sample.

5.4. Comparison of Costs and Benefits to Individual Organisations

Because of the limited quantitative information available on the benefits of EMAS, only a limited comparison of the financial costs and benefits can be presented. However, even this limited comparison indicates that EMAS can have significant net benefits for organisations. If the non-quantified benefits are taken into account, the net benefits will be even higher. Table 5.13 compares the quantified savings from improved energy and resource efficiency with the first year and subsequent annual costs of registration.

Table 5.13: Comparison of Quantified Benefits of Energy and Resource Efficiency with Costs of EMAS

Organisation size	Potential annual efficiency savings (€)	First year cost of EMAS (€) ²	Annual cost of EMAS (€) ²
Micro	3,000 – 10,000 ¹	22,500	10,000
Small	20,000 – 40,000	38,000	22,000
Medium	Up to 100,000	40,000	17,000
Large	Up to 400,000	67,000	39,000
<i>Notes</i>			
1. energy savings only; no data available on resource efficiency savings			
2. figures rounded			

For **micro** organisations, where the costs of EMAS average around €22,000 in the first year and €10,000 in subsequent years, the results suggest that energy savings estimated at up to €10,000 annually alone could be sufficient to offset the ongoing costs of EMAS. However, energy savings alone would not offset the first year costs of EMAS for a considerable time. Other un-quantified benefits, such as access to public contracts, may help to offset the first year costs more rapidly.

The evidence suggests that EMAS may have a net benefit for **small** organisations, as the benefits of energy and resource savings together may be of a similar order to the first year costs and almost double the ongoing costs. However, the relatively high initial costs of implementation and a lack of knowledge of the potential benefits from energy and resource savings may make organisations reluctant to adopt EMAS. Another factor to consider is that organisations may experience reduced savings over time, as a 5% or 10% efficiency gain is unlikely to be repeatable year on year. Therefore, the greatest benefits may be generated in the first year, reducing the incentive to maintain EMAS in the longer term. There may be a similar pattern in the benefits of better stakeholder relations, with the greatest benefit in the first year, with limited potential for further improvement in subsequent years. This is especially the case as some organisations indicated that many customers have no knowledge of EMAS and it does not therefore bring marketing benefits. Another issue raised by interviewees is that EMAS is often adopted to improve relations with the regulatory authorities, in the belief that this will reduce inspections, documentation requirements and fees. Unless these benefits are realised, some organisations do not perceive EMAS to be a success, and may therefore choose not to maintain EMAS registration.

Data provided by **medium** companies suggest that the financial benefits of EMAS increase in

magnitude with the size of organisation, to the point where they clearly exceed the costs in the first year and annually for at least some organisations. In other cases, it appears that, while the financial benefits may be unclear or more limited, other non-quantifiable benefits, such as better relations with stakeholder groups and market factors, are sufficient to justify adoption of EMAS. This suggests the costs of implementing EMAS should be easily recovered by **larger** organisations. However, other responses indicated that lack of awareness of EMAS amongst customers and stakeholders meant that EMAS had few additional benefits to ISO 14001, which has lower costs. For this reason, some respondents indicated that they were reviewing the need for EMAS registration.

5.5. Costs and Benefits Linked to Combinations of Characteristics

It is potentially insightful to evaluate the impact on costs of a range of organisation characteristics, where the data and sample size permit this analysis.

5.5.1. Organisation Size and Region

It has been possible to estimate the costs of EMAS adoption for different size organisations located in different regions of Europe, combining two characteristics from the previous analysis. Table 5.14 presents the results of this exercise.

Table 5.14: Estimated EMAS Costs by Organisation Size and Region

Organisation Size	Region	Cost	First Year (€)	Annual (€)
SME	Northern Europe	External	10,409	2,317
		Internal	19,866	9,570
		Fixed	9,592	5,020
		Total	€ 39,867	€ 16,907
	Southern Europe	External	3,507	1,857
		Internal	11,483	8,110
		Fixed	19,439	7,708
		Total	€ 34,428	€ 17,676
	New Member States	External	5,502	1,575
		Internal	20,725	23,950
		Fixed	2,475	1,300
		Total	€ 28,702	€ 26,825
Large	Northern Europe	External	8,819	3,630
		Internal	48,625	28,023
		Fixed	17,637	10,949
		Total	€ 75,081	€ 42,602
	Southern Europe	External	6,297	3,272
		Internal	23,673	16,442
		Fixed	27,879	14,568
		Total	€ 57,849	€ 34,283
	New Member States	External	9,375	1,500
		Internal	18,125	14,000
		Fixed	7,950	6,500
		Total	€ 35,450	€ 22,000

Consistent with the results of the cost analysis for individual organisations, large organisations in

Northern Europe appear to incur the highest costs in EMAS registration, with SMEs in new Member States having the lowest first year costs and SMEs in southern European the lowest costs in subsequent years. The most significant difference in the costs is difference in external consultancy costs, with Northern European SMEs facing some of the highest costs in the first year.

5.5.2. Organisation Size and Public/Private

Table 5.15 indicates that, for public SMEs, the first year costs of implementing EMAS are significantly higher than those faced by private sector SMEs (around an additional €10,000). The opposite appears to be the case for large organisations, with large private organisations incurring the highest costs in the first year and annually. This suggests the complexity of large private organisations may have a significant impact on the costs, specifically on the internal administrative burden. However, in most cases the private sector organisations appear to face lower external consultancy costs than public organisations, possible due to greater in-house expertise and familiarity with regulatory systems, at least partially explaining the higher internal costs.

Table 5.14: Estimated EMAS Costs by Organisation Size and Ownership

Organisation Size	Public/Private	Cost	First Year (€)	Annual (€)
SME	Public	External	€ 9,132	€ 2,785
		Internal	€ 15,328	€ 11,833
		Fixed	€ 18,103	€ 6,039
		Total	€ 42,563	€ 20,657
	Private	External	€ 5,023	€ 1,735
		Internal	€ 13,141	€ 8,295
		Fixed	€ 16,045	€ 7,046
		Total	€ 34,209	€ 17,076
Large	Public	External	€ 8,804	€ 2,045
		Internal	€ 28,267	€ 17,451
		Fixed	€ 16,490	€ 6,434
		Total	€ 53,560	€ 25,930
	Private	External	€ 6,931	€ 3,813
		Internal	€ 37,498	€ 23,706
		Fixed	€ 24,347	€ 14,547
		Total	€ 68,775	€ 42,067

5.5.3. Organisation Size and Sector

Table 5.15 presents the estimated costs incurred by SME and large organisations in the manufacturing and service sector. The results broadly indicate that manufacturing and service organisations face similar costs in total, the exception being large manufacturing organisations, which appear to incur significantly higher costs than equivalent sized service sector organisations. This appears to be linked to higher internal administrative and fixed costs in the first year and annually. Interestingly, manufacturing organisations appear to incur lower external consultancy costs than equivalent organisation operating in the service sector.

Table 5.15: Estimated EMAS Costs by Organisation Size and Ownership

Organisation Size	Sector	Cost	First Year (€)	Annual (€)
SME	Manufacturing	External	€ 4,879	€ 1,364
		Internal	€ 11,211	€ 7,252
		Fixed	€ 19,687	€ 8,240
		Total	€ 35,776	€ 16,856
	Services	External	€ 5,860	€ 1,865
		Internal	€ 15,972	€ 10,297
		Fixed	€ 13,769	€ 5,439
		Total	€ 35,601	€ 17,601
Large	Manufacturing	External	€ 6,942	€ 3,571
		Internal	€ 35,484	€ 22,113
		Fixed	€ 24,335	€ 8,494
		Total	€ 66,762	€ 34,177
	Services	External	€ 8,563	€ 4,025
		Internal	€ 29,289	€ 16,656
		Fixed	€ 18,398	€ 5,783
		Total	€ 56,250	€ 26,464

Overall, the magnitude of these differences in costs between SME manufacturing and service oriented organisations is small (less than €1,000); however, the difference in total costs for large organisations is much more significant (around €10,000).

6. Conclusions on the costs and benefits of EMAS

Based upon the evidence presented in section 4 and 5, a number of overall conclusions can be drawn. Below, we present each of our key conclusions thematically and compare them to the evidence that we found in the literature review.

6.1. Drivers to register

We specifically investigated organisations' motivation for registering with EMAS. Those drivers that were found to be important are discussed in turn below.

Improving resource and production efficiency

This was identified as a key driver by the highest number of responding organisations in the online survey (19%), with the majority of those being large manufacturing organisations. Importantly, increased resource efficiency and energy savings were identified as a key benefit emerging from EMAS, providing evidence that this expectation is often met with concrete benefits. This conclusion agrees with those of the literature review and so substantiates previous research.

Internal management approach and culture

Both the survey responses and subsequent interviews highlighted internal firm culture as an important issue in driving the uptake of EMAS. Internal firm culture was in many cases linked by respondents to the national cultural context, with it being the expectation in some Member States (Germany, Austria, Sweden) that an organisation (in particular manufacturing) should have a rigorous EMS in place. Indeed, in an example from an interview, one respondent linked de-registration from EMAS with a shift in ownership from Swedish to British and subsequent lowered expectations regarding environmental performance.

However, this was not always the case, with some organisations simply adopting a more ambitious approach to environmental performance and choosing EMAS as an appropriate framework for implementation. Such examples tended to be from sectors closer to the consumer (i.e. tourism) and also aimed to reap benefits through improved relations with stakeholders, highlighting the importance of the environmental statement.

Improved legislative compliance

The desire to improve their legislative compliance was identified by 12% of organisations as an important driver. The requirement to achieve regulatory compliance is a key distinguishing feature of EMAS, as opposed to ISO 14001. While few organisations then went on to identify legal compliance as a benefit, organisations in the manufacturing sector did identify a reduction in negative incidents and better relations with regulatory authorities as key benefits emerging from EMAS registration and these benefits are clearly linked to improved compliance. This suggests that expectations surrounding the benefits of improved legislative compliance are met to some degree.

One organisation particularly mentioned compliance with the IPPC Directive as a key driver, with the opportunity to meet reporting requirements under IPPC legislation through the EMAS annual report.

At the same time, several competent bodies from new Member States identified the demand for legislative compliance under EMAS as a barrier to registration in new Member States, where organisations are overwhelmed with environmental obligations.

Transparency with local stakeholders

The goal of increased transparency with local stakeholders was identified as a driver by 12% of organisations in the survey, with the interviews yielding additional evidence of transparency as a driver. Organisations highlighting this driver tended to be closer to the consumer, although in interviews some manufacturing

organisations also flagged improving relations with local stakeholders as an important driver. In particular, one manufacturing organisation that had been targeted by NGO campaigns used EMAS to regain credibility through transparency regarding its activities.

Customer demand

Our results suggest that supply chain and customer requirements are significant drivers, particularly in the UK, Austria, Denmark and Germany. Interviews further explored the mechanism behind client demand as a driver and revealed that in certain sectors suppliers are required to have EMAS certification in order to gain market access. In particular, suppliers to the German automobile industry noted that their clients had specifically requested EMAS registration and that all competitors were registered. The catalyst seems to come from the nature of the automobile industry, which is particularly subject to consumer scrutiny regarding its environmental performance and which also has a strong tradition of demanding that its suppliers meet particular performance standards. Customer pressure was indicated to be a key reason for moving from ISO 14001 to EMAS, and organisations that had withdrawn from EMAS indicated that customer pressure would be a major incentive to re-register.

While EMAS was the expected management system in some Member States (i.e. Germany), in others ISO 14001 was the norm and there was no additional expectation for EMAS (i.e. Netherlands, UK, France). Organisations were sensitive to the EMS adopted by their competitors, implying that national preferences for a certain system create a “lock in” of that system in that Member State. As noted by the competent body of the Netherlands, Dutch organisations would only seek EMAS registration if they were looking to break into the German market. In addition, organisations serving principally the non-EU market tend to favour ISO 14001, since it is internationally recognised.

We can therefore conclude that the importance of client demand as a driver for EMAS varies according to the sector (proximity to and interest of the customer) and by Member State. This agrees with the conclusions of the literature review and provides greater depth on the causal factors.

Improved reputation

General improvement to an organisation’s reputation was identified as a key driver by 16% of organisation in the online survey. Improving an organisation’s reputation generally appears more significant in Italy and Spain than elsewhere as an EMAS motivator.

When reporting on benefits, many organisations regretted the lack of public interest in their environmental performance as presented in their environmental statement, as well as the general lack of awareness of EMAS. This suggests that the expectations of improvements in reputation were not always delivered, due to low awareness and low prioritisation of environmental performance against other criteria such as product cost and quality.

In particular, public sector organisations identified the desire to improve their image and present a positive example to other organisations as a key driver. This supports the conclusions of the literature review.

Regulatory relief

The questionnaire survey did not specifically identify the expectation of regulatory relief as a driver for registration. However, during subsequent discussions with manufacturing organisations, several noted that they had registered with the expectation that regulators would provide regulatory relief, for example through reduced site inspections. In general, we did not find much evidence of this expectation being delivered. Rather, several manufacturing organisations expressed disappointment that they had not reaped the expected benefits. This issue is considered further under the discussion of benefits below.

6.2. Barriers to registration

Unclear benefits

Our research clearly shows that both organisations and competent bodies see a lack of clarity surrounding the concrete benefits of EMAS to be the key barrier to registration. 23% of questionnaire respondents said that benefits were unclear or did not justify the costs. Interview discussions revealed that, even where environmental managers could clearly identify benefits, the management was not willing to recognise them if they could not be quantified into monetary terms and included in a cost benefit analysis. Interviewees noted that, within a complex system with multiple external and internal factors acting on that system, it is very difficult to single out EMAS as a single causal factor in any change. In contrast, the costs associated with additional days of labour devoted to EMAS are clearly quantifiable.

Legislative compliance

Both organisations and competent bodies from several new Member States (Cyprus, Hungary, Czech Republic, Bulgaria) singled out the need to achieve legislative compliance as a barrier to EMAS uptake, in a context where organisations are facing many new requirements.

Costs of implementation

The questionnaire survey identified the costs of implementation as a key barrier to registration (20% of respondents). Follow up interviews affirmed that organisations tend to critically assess the costs of EMAS against the benefits and take the decision whether to register and whether to remain registered on the basis of this analysis. While the costs of registration and of remaining registered are relatively easy to quantify, monetary benefits are harder to assess as discussed above. This biases the assessment towards the costs of EMAS in many cases.

Lack of awareness

Both organisations and competent bodies identified a lack of awareness amongst both the public and amongst clients as a barrier to EMAS registration. A key element in EMAS is the environmental statement, and in interviews several organisations noted with disappointment that there had been very limited interest in their environmental statements. A lack of awareness is important as it serves to limit the benefits that organisations can reap in terms of improved image through transparency and the publication of the environmental statement.

Lack of incentives

Organisations identified a lack of financial incentives for EMAS registration as a barrier. This result should be taken together with results from interviews, where several large organisations noted that financial incentives were irrelevant in the decision to adopt EMAS. The importance of financial incentives relates to the size of the organisations, being more important for micro and small organisations than for medium and large ones.

In interview discussions, organisations pointed to a lack of regulatory relief as generating a disincentive for registration.

No perceived advantage over ISO 14001

It was reported that many industrial organisations are already ISO14001-registered because it is almost a requirement in order to stay competitive within their sector (especially waste-management and automotive industries). But most of these organisations do not make the final commitments to EMAS (i.e. the environmental statement and audit) because they do not see the benefit from it. It was widely reported that there is insufficient real advantage of EMAS over ISO14001. Transparency, which is the main asset of the EMAS scheme, does not seem to be enough to justify the costs of the necessary consultancies and external

accreditations. A cost/benefit analysis rarely favours EMAS over other environmental management systems.

EMAS' other asset is that it is a public system. This is not the case for ISO14001, which is a private scheme. This could make a major difference, as it guarantees strictness, transparency and independence from private influences. However it seems that Member States do not emphasise this aspect very much. One Competent Body (Netherlands) reported that EMAS was unnecessary because it was only implementing what ISO14001 already offers. The argument was that when the ISO certification is controlled by a public entity, the main advantage of EMAS, the fact that it is a public process, is lost. It appears that EMAS is beneficial in the long-term. But in these times of economic difficulties, organisations have had trouble, understandably, prioritizing long-term investments over short-term recovery.

One competent body (Finland) explained that the reason why it did not want to offer too many incentives for EMAS-registered organisation was that it expected the market to create incentives for organisations. However, contrary to ISO14001, EMAS has not yet been taken up by the market and organisations do not yet find it necessary to register to remain competitive.

6.3. The costs of EMAS

The costs of EMAS are discussed extensively in the previous section. As such this section provides a brief summary of the overall conclusions regarding costs.

The results indicate that for all sizes of organisation the costs in the first year are between 1.5 and 2 times higher than annual costs over subsequent years. The costs faced by organisations increase relative to the size of the organisation, but, micro and small organisations faced higher fixed and external costs than medium and large organisations. This suggests that, the costs faced by micro and small organisations in the first year act as a significant barrier to registration.

In contrast, medium and large organisations seem to benefit from economies of scale, with a higher proportion of costs borne internally by environmental departments and lower external costs associated with the use of consultants.

The data indicate that both first and subsequent years, the costs of EMAS registration are slightly higher for private organisations than public organisations, public organisations appear to incur significantly higher external consultancy costs than private organisations in the first year but fixed costs appear to be higher for private organisation.

The costs of registration are highest in Northern Europe and lowest in the new Member States; but this largely reflects general cost differences between the countries. Ongoing annual costs are again highest in Northern Europe and lowest in Southern Europe, due to the lower average cost of internal staff.

6.4. The benefits of EMAS

Similarly, the benefits emerging from EMAS are discussed in detail in section 5. Below we summarise the main conclusions thematically.

Increased efficiency savings

The most commonly identified benefit was energy and resource savings, with the majority of respondents indicating that EMAS had led to increased efficiency.

In calculating benefits in monetary terms, we drew on the energy savings identified by organisations to develop monetary estimates. The results show clear evidence of substantial financial savings from reduced energy costs following EMAS adoption. For all sizes of organisations, evidence was found that annual energy savings alone exceeded the annual costs of maintaining EMAS. Examples suggest that the magnitude

of the financial benefits increases with the size of the organisation to the point where they exceed the costs associated with both the first year and subsequent annual costs, in particular for large manufacturing organisations. This suggests that the costs of implementing EMAS should easily be recovered by larger organisations.

This comes with the caveat that the efficiency gains are unlikely to be repeatable over time, meaning that the additional cost saving achievable may tail off over the long term once all possible measures have been implemented. In addition, the extent of benefits reaped will depend on the point of departure: where an organisation is already operating an EMS and upgrades to EMAS, savings may be less significant.

Our conclusions here agree with the results of the literature review, and go beyond them in assigning monetary values to savings through increased energy efficiency in organisations of different sizes.

Reduced negative incidents

The second most widely acknowledged benefit of EMAS in the questionnaire survey was a reduction in negative incidents. This result was reinforced in follow up interviews, where several manufacturing organisations confirmed that the implementation of a robust EMS had given them a better overview of their processes and facilitated greater control, leading to a reduction in incidents and a reduced effort for internal monitoring. This has obvious linkages with benefits relating to improved relations with regulatory authorities. This evidence relating to reduced incidents is important, as similar evidence was not found in the literature review.

Market access

In assessing the impacts of EMAS registration on competitiveness, we sought to determine how EMAS registration might affect market access by increasing opportunities. However, few respondents indicated that improved market opportunities were a benefit of EMAS, relationships with customers had improved less than with other stakeholder groups and EMAS had only assisted a few respondents in qualifying for new opportunities or competing for new contracts. It appears that EMAS registration may be more important for retaining existing customers than for winning new business.

This reveals a weakness in the effectiveness of public procurement policies, since no organisation identified additional public contracts won as a result of being EMAS registered. The effects of the integration of EMAS into public procurement policies is difficult to judge, since EMS only represents one of the criteria against which an organisation is judged for public tenders.

Improved relations with competent authorities

Survey respondents indicated that EMAS has improved relationships with regulators more than with any other stakeholder group. Interviews confirmed this result, with organisations stating that EMAS registration contributed to increased trust between the organisation and the competent authorities. Reduced time spent on monitoring legislative compliance was seen as another key benefit of EMAS.

This conclusion agrees with the literature review and provides additional evidence for EMAS benefiting organisations in terms of their relationships with authorities. However, this benefit is difficult to quantify in monetary terms and is therefore often omitted from cost/benefit assessments.

Improved relations with other stakeholders

Improved relations with stakeholders were identified as a key benefit by organisations in the survey. In interviews, organisations gave more details of how this worked, allowing us to gather clear evidence of benefits. Two large manufacturing firms had positive experiences of EMAS serving to reassure local NGOs of their commitment to environmental performance and transparency. Several organisations used EMAS to deliver targeted messages to their neighbours regarding their activities to control local emissions. One organisation noted though that, while EMAS registration may have generated some positive press, the interest was not sustained.

In relation to staff, messages were more mixed. Most organisations indicated that relationships with staff had improved due to EMAS, but most thought that it had little or no impact on staff recruitment and retention and staff participation was not a major motivation for registration.

Regulatory relief

While many organisations also had expectations of regulatory relief from EMAS registration, the evidence of organisations actually benefiting from regulatory relief was limited. Those benefits that were identified tended to apply to the manufacturing sector and relate to advantages under IPPC legislation. For example, an Italian organisation indicated that inspections under IPPC were extended to every eight years instead of every five years for EMAS registered organisations. German and Irish organisations noted that their reporting requirements for EMAS and IPPC could be combined, so reducing their administrative burden. A German organisation noted that self monitoring systems set up under EMAS had allowed it to conduct more inspections in house with the trust of the local authorities. They did note, though, that the level of inspections that were mandatory by law remained constant.

The competent authority in Cyprus noted that inspections will be made easier for IPPC installations in the coming year, while in both Hungary and Latvia the competent bodies identified their intention to extend the permit renewal period from five to eight years following the recast of IPPC as the Directive on Industrial Emissions, currently in the co-decision process.

The issue of delivery regulatory relief is considered further in the section on conclusions and recommendations.

6.5. Incentives

Best practice in providing support for EMAS registered organisations is discussed in greater detail in section 7 below.

The results of this study and the views of stakeholders consulted suggest that, although guidance documents and technical support are helpful for organisations wishing to register with EMAS, they do not make a decisive difference to an organisation's decision to register. Instead, the evidence indicates that financial support provides the greatest stimulus for organisations to register. Results from both surveys and interviews indicated that financial support to register was seen as an important incentive, though technical assistance was not. For organisations that had withdrawn from EMAS, though, ongoing financial or technical support would not be a major encouragement to re-register.

The promotion of EMAS registered organisations was identified by organisations as an important incentive. In addition, the offer of regulatory relief was important in encouraging organisations to register, although as discussed above, several German organisations noted that this expectation had been disappointed. The literature review highlighted regulatory relief as a key incentive, as well as flagging public procurement as an incentive favoured by organisations. These issues are discussed further in the section on recommendations.

Clearly identifiable benefits, both financial and non-financial (i.e. to organisation image, recognition by stakeholder, etc.), were deemed necessary incentives to maximise EMAS uptake in the future.

7. Conclusions on best practice with EMAS

Section 7.1 presents approaches by and conditions of organisations that have made the adoption of EMAS less onerous, more beneficial and effective at improving environment and financial impacts, based on the findings of this study. Section 7.2 presents those schemes and incentives that the competent authorities and registered organisations identified as being most useful in promoting EMAS. Section 7.3 presents recommendations for possible operations options and actions that could be undertaken to promote the uptake of EMAS.

7.1. Best practice in organisations

7.1.1. Encouragement and Motivation for Uptake

A number of practices and strategies of organisations have been identified that encourage the uptake of EMAS. In relation to the general management practices and systems of organisations, the results of this study indicate that, where integrated systems are adopted to manage health and safety, quality and environmental issues by the individual organisations or their customers, EMAS is better suited to their needs compared to ISO 14001 and is perceived as an effective tool to demonstrate general good management practice to customers and other stakeholders.

Secondly, where the organisation wishes to demonstrate leadership, EMAS appears to have greater benefits than ISO 14001. Results indicate that this is likely to occur:

1. in highly competitive sectors, EMAS helps differentiate organisations, generating competitive advantage in some cases;
2. in public procurement, where leadership on environmental issues creates more contract opportunities and enhances competitiveness in bidding processes;
3. where organisations wish to encourage others to change behaviour and set a good example. This is particularly prevalent amongst public organisations, and
4. where stakeholder perceptions of an organisation and/or its activities are generally negative, EMAS provides the opportunity to dispel misunderstandings and engage with regulators, local planning authorities, local residents and NGOs.

7.1.2. Maximising the benefits of EMAS Registration

The following best practices have been identified in this study as maximising the potential benefits of EMAS:

- where organisations are subject to IPPC, the EMAS auditing and review processes and the statement can offer significant synergies for organisations in the compliance process. Additionally, reporting and permit renewal processes have been relaxed due to EMAS in some Member States;
- registering as part of a cluster or ‘convoy’ allows organisations (particularly SMEs) to receive guidance from other organisations and can help to generate collective benefits (e.g. joint promotion of EMAS to stakeholders);
- integrating EMAS into the general management systems can lead to other benefits, such as

accident reduction, due to greater monitoring of risks and the periodic review of systems and process to optimise organisation performance, and

- a systematic review of energy and resource use through EMAS appears to yield significant benefits, with many organisations identifying substantial cost savings through increased efficiency.

7.1.3. Minimising the costs of EMAS Registration

The practices identified as minimising the costs of EMAS registration and implementation are summarised as follows:

- for large organisations with multiple sites, the development of European wide guidance and verification methods would reduce unnecessary cost burdens, as it could help to remove the current differences in the way that EMAS is implemented;
- some organisations have indicated that the cost is reduced, and registration is made easier, when the responsible authorities operate at regional rather than national level. Interviewees made explicit reference to the regional approaches adopted in Spain and Italy in comparison to the national approaches adopted in other Member States.
- participating in a cluster or ‘convoy’ improves understanding of EMAS and reduces implementation costs, and
- financial support from regional, national and European government helps to reduce costs, particularly in the first year, and may be especially important for small organisations. Organisations consulted highlighted the EC Life scheme and Chambers of Commerce as sources of funding for EMAS registration. In Germany, registration in a cluster or ‘convoy’ was popular amongst SME organisations, who also appeared to receive funding from national sources to support these convoys.

7.2. Best practice in Competent Bodies

There is considerable variation in the number of organisations registered with EMAS in the different Member States. Our results suggest that this variation is due to differences in customer demand and the level of integration of EMAS into the supplier chain (in particular versus ISO 14001), and differences in the cultural attitudes and priorities of organisations. Part of the success of EMAS seems to arise from the scheme achieving a level of momentum through reaching a threshold level of registered organisations that then serves to increase awareness of the scheme along the value chain.

Little evidence was found for the influence of Member State incentives acting as key drivers for registration by organisations, with the exception of financial support for registration (in particular for micro, small and medium organisations).

Nevertheless, in interviews organisations did flag certain initiatives as being helpful and in this section we explore some of the promotional activities undertaken by Member States and identify those that have met with success and can be considered best practice. The results from the interviews have shown us that competent bodies demonstrate creativity and imagination for promotional activities. A factor that can explain the delay in initiatives for EMAS promotion is that some Member States (France, Finland, Denmark and probably others) are waiting for the revision of the EMAS Regulation (EMAS III), which will take place at the end of 2009, to launch new campaigns and guidance documents. After the revision, promotion of EMAS through a targeted plan will become a requirement under Article 34. Member States are therefore currently saving resources for the

establishment of this plan.

7.2.1. Promotional activities

On the marketing side, EMAS suffers from a lack of public recognition. While the Eco-label is becoming more and more popular among the public, the EMAS scheme and the EMAS logo are still largely unknown. This is largely due to the fact that it cannot appear on products.

Promotion should concentrate not only on the benefits of EMAS as a whole but also on the benefits of EMAS in comparison to ISO14001, as results suggest that this is not well recognised. The main problem here is that, understandably, Member States rarely hold events solely for the benefit of EMAS. Events usually target all environmental management systems because, in most countries, environmental management is only starting and needs to be promoted as a whole.

Besides conferences and brochures, many of them have set up projects to encourage organisations to consider registration under EMAS. Examples of best practice with the promotion of EMAS include the following:

- Organising an EMAS Ceremony (Greece, Austria, Slovakia);
- EMAS road shows to visit organisations (Hungary);
- Conferences and events (Estonia, Cyprus, Bulgaria, Germany, Greece, Lithuania, Malta, Netherlands, Poland, Portugal, Slovakia, UK)
- Publications in magazines (Poland, Latvia, Romania)
- Presence at industry fairs (Spain, UK, Slovakia);
- Targeting schools with lectures and or high-school Eco-excursions (Latvia, Cyprus); and
- TV show (Slovakia).

7.2.2. Financial assistance

Organisations specifically flagged the importance of financial incentives in encouraging them to adopt EMAS, with these being significantly more relevant for SMEs than for large organisations. The most common form of financial assistance is through an absence of registration fees or reduced fees for SMEs. Identified best practices include the following:

- Reduced registration fees for SMEs (Bulgaria, Romania)
- No registration fees (Cyprus, Estonia, Luxembourg, Netherlands, Spain)
- Subsidies for verification and consultancy fees (Cyprus, Portugal, Romania, UK)
- Targeted assistance for SMEs (Spain)
- Fiscal advantages (France)
- Re-imbusement for investment in renewable energies (Germany)
- More favourable terms for insurance policies and bank loans (Poland)

7.2.3. Technical assistance

Several competent bodies (Ireland, Austria, Estonia) have decided to cooperate with an external independent association that is dedicated to the promotion of EMS in general. Most competent bodies hire the services of independent consultants to organise training sessions for organisations interested in the scheme. The use of external expertise shows that Member States are usually aware of the difficulties and the complexities of the scheme and are willing to invest in providing technical assistance to organisations.

Practices identified to provide technical assistance include the following:

- Provision of guidance in the language of the Member State
- Dedicated website with comprehensive information
- Training of consultants and of national verifiers (Cyprus)
- Assistance specifically targeted at public organisations (Finland,
- Telephone help desk (Germany, Denmark, Hungary, Portugal, Spain, UK)
- EMAS-easy (Malta, Slovakia)
- E-learning package (Poland)
- PMEmas project for SMEs (Portugal)
- Interactive handbook for SMEs (Spain)
- Good practice handbooks (Spain, Germany, Slovakia)

When seminars and workshops are organised to help companies implement the different steps of EMAS, some Member States (Poland, France, Bulgaria, Malta and Ireland) have noticed that many companies stop after the first steps and do not implement the full scheme. The first steps bring companies to the level of either national environmental management systems or ISO14001. Competent bodies noted that organisations do not see the added value in spending more money on accreditation to implement a system that they perceive as not providing greater benefits than ISO14001.

The results of consultation with organisations imply that technical assistance is the least valuable incentive. This should be coupled with the caveat that in new Member States, where the numbers of registrants are very low or non-existent, technical assistance may be welcome by organisations that did not have a chance to participate in our survey and interviews by virtue of not yet being registered. A more cautious conclusion would therefore be that while technical assistance may not be important in the old Member States, it may have an important role to play in encouraging uptake in the new Member States.

7.2.4. Public procurement

Our investigations have shown that being EMAS-registered can prove to be a necessary asset for an organisation to maintain its reputation and its position on the market. However, our questions regarding access to public tenders did not deliver very robust evidence of a positive role for public procurement. Although in the survey a relative large number of organisations indicated that they had won additional contracts from being EMAS registered, only one organisation indicated that it had gained access to public procurement. This may be because it is too early for the effects to be felt on the ground, but suggests that additional promotional activities are required to inform public bodies about EMAS. In addition, there may be a discrepancy between the types of organisations that are EMAS registered and the types of services employed by the public sector.

The effect of provisions on EMAS in public procurement policies in Member States is not yet visible on a large scale. The Commission's new policy on the greening of public procurement has had effects on the recognition of EMAS at the national level, with the majority of Member States having included EMS as a criterion in their procedures for evaluating tenders, with it being obligatory in some Member States under certain conditions. However, the greening of public procurement policy is not restricted to EMAS and does not yet constitute sufficient grounds for organisations to choose EMAS over another environmental management system.

Identified best practices include the following:

- EMS as an entry criterion for specific types of tender (France);
- Green purchasing website set up for hospitals to facilitate green public procurement (Greece);
- Targeted programme for public procurement, whereby all government authorities must reach 100% sustainable procurement by 2010, and local authorities 50%. Criteria established for

- product groups, with many criteria linked to EMS (Netherlands);
- EMAS receives an additional point over other EMS in the evaluation of proposals (Austria); and
- Contracting bodies can by law request EMS certification from applicants (Spain).

7.2.5. Delivering regulatory relief

With regards to regulatory relief, the majority of Member States offer some advantages to EMAS-registered organisations.

Identified best practices include the following:

- Simplified administrative procedures for EMAS organisations (Austria, Spain under IPPC);
- Simplified reporting obligations (Denmark);
- Inspections under IPPC facilitated or frequency reduced (Bulgaria, Denmark, UK, Malta, Portugal);
- Reduced charges and fees under Operator and Pollution Risk Assessment (UK);
- Timeframe for IPPC permit renewal extended (Hungary, Latvia); and
- Exemptions from financial guarantees (Spain, Czech Republic).

Several Member States specifically target organisations that fall under the IPPC Directive for regulatory relief. However, while organisations had flagged regulatory relief as an incentive to register with EMAS and we did gather evidence of improved trust between organisations and competent bodies responsible for permitting manufacturing sites under IPPC legislation, we found little evidence of benefits from regulatory relief. Indeed, several German organisations expressed disappointment that regulatory relief had not been realised. Discussions with the competent body in Germany suggest that they were looking for more concrete guidance on how to deliver regulatory relief from EU level. Finally, on IPPC, several Member States were awaiting the outcome of the IPPC recast process before acting to deliver regulatory relief.

An additional issue mentioned by Member State competent bodies (Finland and Germany) regarding regulatory relief was that should relief be offered to organisations with EMAS, it would then also need to be awarded to organisations with ISO 14001. Since ISO 14001 is privately controlled, Finland was reluctant to deliver relief. However, although these systems both represent EMS, given that EMAS requires regulatory compliance whilst ISO 14001 does not, the reasoning behind the need to group the two systems in delivering regulatory relief is not clear. France and Germany went so far as to say they were not sufficiently confident of EMAS as a system as to deliver relief on that basis.

7.3. Recommendations for options and actions

In this section we present our recommendations for possible options and actions that could be undertaken either bilaterally, regionally or at EU level to promote EMAS amongst organisations. In light of the recent review of the EMAS Regulation, we have focussed on possible initiatives that could be set up in parallel to implementation of EMAS III and that are compatible with its aims.

For each recommendation we identify the anticipated benefits and where possible highlight the associated costs.

7.3.1. Raising public awareness about EMAS

Our research revealed a perceived lack of public interest in EMAS and a low demand for the environmental statements as a tool for increasing public access to information. While, this suggests the need to raise public awareness of EMAS in general, it is recommended that promotional activities with the public be limited initially to low cost activities, as the outcomes are very uncertain. Public interest in many Member States suffers from saturation on such issues, making the appetite for further information low. In addition, the restricted use of the EMAS logo means that it will only be viewed by individuals who are exposed to promotional materials, such as letter headings or websites. Recognition of the EMAS logo by the public cannot play a role in purchasing decisions regarding specific products.

Rather, our research did identify role for EMAS in improving relations with stakeholders. Interviews suggest that this tended to operate at the local level with neighbours to medium or large installations, or through more formal stakeholder channels such as NGOs.

We therefore identified a number of relatively low costs initiatives that could serve to increase public awareness of the scheme and promote EMAS as a benchmark of good environmental performance for both public and private organisations. In designing initiatives to raise awareness, it is important to consider who the target audience would be and how increasing their knowledge regarding EMAS serves to benefit participating organisations. One initiative specifically targets NGOs, with the goal of increasing the pressure on organisations to register with EMAS.

EMAS awards ceremony

Organising an annual EMAS awards ceremony for organisations that have recently joined can provide an opportunity to generate some press around the scheme and positive publicity for the organisations. It would be important to alert the media to such an event and encourage them to undertake short interviews with several of the organisations.

Benefits:

- Raise public awareness of the scheme
- Generate positive publicity for new organisations

Costs:

- Estimated annual costs for ceremony €1500 (based on experience in Austria)

Generating demand for EMAS amongst environmental NGOs

Several organisations identified NGOs as important agents in stimulating them to register with EMAS. The Commission could engage with environmental NGOs strategically by providing information in the form of a brochure. Such a brochure could demonstrate through examples how EMAS can act as a guarantee of environmental performance, with particular reference to large manufacturing installations. These kinds of installations are sensitive to NGO campaigns, and targeted pressure from NGOs may serve to encourage them to adopt EMAS in order to improve their public image. The role of the environmental statement in securing increase stakeholder trust would then serve a particular purpose in increasing transparency, so favouring EMAS over ISO 14001.

An NGO umbrella organisation such as the European Environmental Bureau could be used to provide outreach to members in the Member States. It would be particularly relevant to target NGOs in the new Member States that may not be familiar with EMAS.

Benefits:

- Increased awareness of EMAS amongst national NGOs
- Increased pressure from NGOs for EMAS registration as a guarantee of environmental performance

Costs:

- Cost of developing a short A5 brochure summarising benefits with case studies demonstrating improved environmental performance (based on this report), approx. €5,000
- Costs of translation into national language, approx. €2,000
- Printing costs for 1,000 copies, approx. €3,000
- Postal costs, approx. €1,000

Using the media to promote EMAS as a benchmark of good environmental performance

Several Member States undertook promotional activities to increase the public understanding of EMAS and to promote EMAS as a benchmark of environmental performance. Some of the more cost-effective methods for promoting EMAS include engaging with the media to produce features on EMAS in the form of articles in magazines, or items on the radio or television.

Benefits:

- Increased public awareness of EMAS, leading to greater demand for the environmental statements of organisations.

Costs:

- Competent body can contact journalists to feed possible features on particular successes with EMAS at very low cost.

Publishing the environmental statements

Although organisations registering with EMAS are invited to submit their statements for inclusion on the Commission web site, interest from stakeholders is more likely to arise at the local level. The environmental statements of participating organisations could therefore be made available on the national EMAS website of the website of the national competent body.

Benefits:

- This would give a higher profile to the environmental statement and allow interested individuals at local level to search for particular organisations and/or groups of organisations.
- It would also serve to provide examples of statements to organisations seeking to register with EMAS, with organisations able to review the statements of other organisations in a similar sector.

Costs:

- Cost of the design of an additional page to include on the existing EMAS national webpage, estimate €0-500.

7.3.2. Increasing awareness amongst organisations

Raising awareness of EMAS amongst organisations not only serves to target possible registrants, but can also serve to increase awareness of the scheme throughout the value chain. We recommend targeting private and public organisations separately, based on the different access points available and different needs.

Raising awareness amongst organisations

A cost-effective strategy through which to target particular sectors with awareness raising activities is by promotion at international trade fairs and exhibitions. It is recommended that the Commission rent a stand at specific trade fairs and generate targeted brochures that summarise the benefits that can be reaped from EMAS, including examples from the relevant sector. Such brochures could be developed based on the results included in this report.

In addition, such trade fairs and exhibitions can provide an opportunity to promote the sectoral reference documents developed under Article 44 of the revised Regulation on EMAS.

Benefits:

- Targeted promotion of EMAS to specific sectors with clear evidence of benefits

Costs:

- Development of targeted short brochure based on the results of this report, €1,000 per brochure
- Printing costs for 1,000 copies for each sector, approx. €3,000
- Costs of staff work days to attend conference and rental of stand

Raising awareness amongst public bodies

In order to raise awareness amongst the public bodies such as local authorities that could potentially register with EMAS, targeted seminars could be organised to bring together representatives from public bodies and to provide them with a brief introduction to EMAS. Such seminars could be organised on a regional level and delivered by the competent bodies. The aim would be to inform public bodies concerning the key steps in EMAS, to present evidence of benefits harvested by other public bodies in terms of energy savings and improved reputation with stakeholders, and to encourage registration. The Commission could assist competent bodies by developing generic seminar material .

Benefits:

- Increase awareness of EMAS amongst public bodies, with examples of benefits to organisations of a similar size and nature.
- Understanding of the steps involved in EMAS registration.

Costs:

- Costs would depend on the size of the Member State and the number of seminar involved. It is expected that a seminar could be organised for €3,000, with costs reduced by using public buildings as venues

7.3.3. Facilitating registration

Cluster/convoy approach to registration

A number of organisations in both Germany (EMASeasy-convoy approach) and Italy³⁷ indicated that the cluster approach to registration served to support their registration. This was particularly important for small and micro organisations, for which the first year costs of EMAS registration represent a significant barrier. The cluster approach has considerable potential in drawing in additional organisations to the EMAS scheme. However, we did not find evidence of this approach in all Member States.

It would therefore be useful for the Commission to provide additional guidance to Member States on how to provide specific assistance to clusters of organisations. The aim is make shared resources and common tools available to the organisations involved and accredited verifiers must be involved to enable this network approach. Additional guidance on the kinds of procedures the competent bodies could use to facilitate the cluster approach would be useful. This would include such aspects as assisting interested organisations in identifying possible collaborators, establishing procedures for verifiers working with clusters, and providing examples of how to share costs and disseminate tools.

In addition, the cluster approach could benefits from additional promotion, possibly through targeted seminars including the presentation of best practice in managing cluster registrations.

Benefits:

- Additional support and incentives for registration, with the costs of registration lowered as a

³⁷ [Frey, M. and Iraldo, E., 2007 "A cluster-based approach for the application of EMAS," IEF Working Paper No. 3.](#) We understand that a similar scheme also operates in the Walloon region of Belgium.

result of their being shared.

Costs:

- Costs of a seminar on the cluster approach targeted at sharing best practice amongst the competent bodies.
- Costs of developing additional guidance materials for competent bodies on the cluster approach.

7.3.4. Technical assistance

Support in writing the environmental statement for SMEs

Both organisations and competent bodies identified writing the environmental statement as a particularly challenging step in EMAS registration, particularly for SMEs. Although, as noted above, some Member States provide financial assistance to SMEs to hire consultants to assist with EMAS, including writing the environmental statement, this generally is available only for the initial registration. One option would be to provide further assistance for the drafting of environmental statements in the following years. Such support could take the form of financial support to cover the fees of consultants hired to assist with drafting the environmental statement and could be earmarked at EU level and distributed through Member State competent bodies.

Benefits:

- Financial support would serve to reduce the costs associated with this step and reduce the overall costs of EMAS registration to SMEs
- Such assistance particularly targets the additional step that EMAS requires beyond ISO 14001 and so reduces the additional barriers to EMAS registration.

Costs:

- Costs would be determined by the size of the Member States and an estimate of the target audience. Austria devoted €100,000 to such a scheme.

7.3.5. Generating financial incentives

Assessing risk in the insurance industry

In Poland, EMAS registration serves to reduce the legal requirements for insurance for an organisation's activities. This highlights a mechanism through which EMAS may serve to generate financial benefits for registered organisations. Insurance companies may be able to offer reduced premiums to organisations that operate EMAS. Italy also has experience over a number of years of working with insurers to take EMAS into account and a similar approach is under discussion in Spain.

It would therefore be useful for to engage with the insurance industry to increase its understanding of the benefits of EMAS as a tool in contributing to risk management. It would be informative to conduct a survey of the insurance industry to determine how EMAS is factored into decisions on premiums today and to test the appetite for offering reduced premiums on the basis of EMAS registration. Should some insurance companies prove to be leaders in accepting EMAS as evidence of good environmental practice, it may then be relevant to draw on their approach as best practice and develop guidelines for the wider industry.

Benefits:

- Increased awareness of EMAS in the insurance industry and possible long term benefits to EMAS registered organisations in terms of reduced premiums.

Costs:

- Possible costs of a survey investigation the acceptance of EMAS in the insurance industry in the EU, €150,000

- Generating guidelines for the insurance industry, €150,000

7.3.6. Maximising efficiency benefits

Our research generated robust evidence of efficiency savings as a key benefit of EMAS. We were able to estimate monetary savings from reduced energy consumption, emerging from greater energy rationalisation under the implementation of EMAS. It will be important to capitalise on this result by communicating it to organisations interested in registering with EMAS and by exploiting any possible links with national efforts to reduce energy consumption by coordinating promotional activities.

In summer 2009, CEN and CENELEC issued a new European standard on Energy Management Systems, EN 16001:2009. This European standard provides organizations and companies with a single European recognized framework and a cost-effective tool to support them establish the systems and processes necessary to improve energy efficiency and to ensure that energy management becomes integrated into organizational business structures. The adoption of EN 16001:2009 is intended to contribute to the setting up of a continuous improvement process that will lead to reductions in costs, thereby strengthening competitiveness, and continual improvement of energy use and business performance. The standard is intended to apply to all types and sizes of organizations and can those organisations that have achieved energy savings under EMAS would be well positioned to qualify for the standard.

Promote increased efficiency savings as key benefit

As a first step, the results of the current report with regards to efficiency savings as outweighing the costs associated with EMAS should be publicised on the EMAS pages of the Europa website.

Benefits:

- Publicise positive results of the current study.

Cost:

- None

Guidance on achieving efficiency savings

In order to counter the common perception that the benefits of EMAS are unclear, it is important to clearly communication to organisation not only what benefits they can expect, but also **how** they can go about accessing those benefits.

To this end and under Article 46 of the revised Regulation, it is recommended that the Commission develop targeted guidance on step by step methodologies for reviewing, mapping and reducing energy and resource consumption under EMAS. Such guidance could provide an overall strategic approach to reducing consumption, and go on to provide guidance targeted at opportunities for reducing consumption in specific sectors. Guidance for specific sectors should be tailored to deliver the level of sophistication required for the nature of the operations of the organisations. For example, guidance for public authorities should take a step-by-step approach to the describing methodologies for assessing energy and resource consumption and planning actions, while for large manufacturing organisations guidance will need to be more detailed and comprehensive to be useful. With regards to the manufacturing sector, it is expected that such guidance could draw extensively on the BAT Reference Documents generated under the Sevilla Process by the European IPPC Bureau, in particular the horizontal BREF on energy efficiency and the relevant sectoral BREF³⁸.

The publication of such guidance could be marked by holding a conference, aimed at highlighting the benefits of EMAS is yielding efficiency savings and providing concrete examples. It would then by

³⁸ A list of BREFs can be seen at: <http://eippcb.jrc.es/reference/>

useful to invite individuals from organisations that had identified benefits to provide presentations.

Benefits:

- Organisations from specific sectors have access to clear guidance on how to achieve efficiency savings under EMAS

Costs:

- Generating guidance documents is already foreseen under Article 46 of the revised EMAS Regulation. We therefore assume that a budget has been assigned.
- Conference costs

Subsidies for investment in energy saving under EMAS

This recommendation draws upon an example of best practice in Germany³⁹, whereby EMAS registered companies received financial incentives in the form of subsidies for good energy practice. While the subsidies are offered to all companies, EMAS registered companies do not need to provide proof.

The provisions of subsidies to support energy savings under EMAS through EU level funds could serve to complement the recommendation above, the provision of targeted guidance on achieving energy savings, and aims at maximising the benefits from energy savings under EMAS. Such a scheme would also fit with the climate change agenda but contributing to CO2 reduction through reduced energy consumption.

Funds could be provided to support the implementation of energy saving strategies under the umbrella of EMAS implementation. It may also be relevant to make specific earmarked funds available for to support the uptake of renewable energies by EMAS registered organisations, in parallel with the objectives of the recently adopted Renewable Energy Directive⁴⁰.

Benefits:

- Financial incentives for EMAS registration that serve also to maximise benefits from energy savings.
- Promotion of renewable energies.

Costs:

- Subsidies provided from EU funds.

7.3.7. Increasing national capacities

Our results showed that limited national capacity to support EMAS registration, namely a lack of national consultants and verifiers, acted as a barrier to EMAS uptake by raising the costs associated with registration. It is particularly important in the new Member States that national consultants and verifiers are trained on EMAS.

Training national verifiers and consultants

The presence of national verifiers and consultants with an understanding of EMAS requirements means that organisations pay local fees and do not have to pay the higher costs involved in hiring foreign verifiers.

A possible initiative could involve a twinning programme, whereby verifiers from a Member State where EMAS is entrenched provide targeted training seminars and shared best practice with interested consultants in the new Member States. It would be important to consider language and ensure that

³⁹ EEG Erneuerbare-Energien-Gesetz (Renewable Energy Act), §41

⁴⁰ [Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources](#)

communication was fluid or that interpretation was provided.

An alternative would be to have the training seminars provided by the competent bodies. While this may reduce the costs since it would not be necessary to bring in external experts, it would not have the same added value in sharing expertise, particularly in new Member States where the numbers of registered organisations remain low.

Benefits:

- Increased capacities to provide support for registration by national verifiers and consultants.

Costs:

- Twinning programmes may be able to access EU funding.
- Training programmes could be covered by government subsidies. A scheme in Cyprus to train national verifiers and consultants involved costs of €115,000.

7.3.8. Public procurement

While we did not find robust evidence of public procurement policies generating significant benefits from EMAS organisations. This may be because policies were only recently put in place and it may be too early to judge their effects. Directive 2004/18/EC on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts⁴¹ may provide additional opportunities to generate benefits under EMAS. The Directive provides for the use of EMS, including EMAS, as a criterion in public tenders. Below we provide some recommendations of actions to promote public procurement.

List of public tenders with EMAS as a criterion on the EMAS website

The website of the German competent body provides a list of open public tenders that specifically require EMAS as a criterion. This could easily be extrapolated to the EMAS website, which could list open tender by country and by sector, for easy searching.

The process would require some coordination, since public authorities would then be required to inform the EMAS unit of all new tenders with EMAS as a criterion. However, it would be possible to develop a simple email procedure through which to deliver the information and have it automatically uploaded onto the website, or to provide links to the national web site.

Benefits:

- Simply one stop information site for all public tenders with EMAS as a criterion.

Costs:

- Minimal costs involved in developing the email delivery procedure (a simple template) and of setting up an additional website.

Establish green purchasing websites for public bodies

In order to help public bodies in making green purchasing decisions, websites could be established at the national level to include lists of organisations that may be in a position to supply public authorities. These could include organisations ranging from paper suppliers to food and beverage suppliers to car hire companies. Public authorities seeking to inform their purchasing decisions and employ organisations that are EMAS registered could then access one website to identify appropriate organisations.

⁴¹Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public works

Benefits:

- Public authorities have a readily accessible source for the identification of EMAS registered organisations to use as suppliers.

Costs:

- Minimal costs, generating the lists of organisations in an accessible format for public bodies making purchasing decisions (i.e. by product) and uploading a webpage.

7.3.9. Promoting synergies between EMAS and other environmental actions

There are considerable cross-linkages between EMAS and other initiatives relating to ensuring a high level of environmental performance, as well as to health and safety issues. These linkages can relate to such elements as the contribution of process monitoring to safety, or process innovations that can lead to improvements in the environmental performance of products (such as reduced levels of chemicals) and provide opportunities for the development of synergies across systems and ultimately savings for the organisation involved.

In addition, there are obvious synergies to be reaped in the case where an organisation registers with more than one environmental management system, be it ISO 14001 or with a local environmental management system.

It may be useful for the Commission to flag the existence of such synergies and provide guidance on how best to exploit them within the context of an organisation.

Short pamphlet on the links between EMAS and other environmental management systems

The Commission could develop guidance in the form of a short pamphlet that specifically highlights the links between EMAS and a number of other environmental management systems, including ISO 14001 and EN 16001:2009. Such guidance could build on the outcomes of a study undertaken by Bio Intelligence aimed at analysing differences between regional, national or sector specific non-formal EMS and ISO 14001 and developing guidelines for organisations on how to move from these EMS to EMAS. In addition, the guidance could address specific linkages between EMAS and health and safety issues.

Benefits:

- Accessible information on possible synergies across different management systems in a digestible format for organisations

Costs:

- Costs of developing a short pamphlet
- Translation costs

Guidance on how EMAS could support product-oriented systems

There is some evidence to suggest that EMAS can contribute to environmental product innovation⁴². EMAS may therefore have a synergistic role to play with the implementation of such policy tools as the Regulation on the Ecolable⁴³ and the Directive on the Ecodesign of Energy Using Products⁴⁴. It

⁴² Hoffmann, E., Ankele, K., Nill, J. And Rennings, K. 2003, "Product innovation impact of EMAS: Results of case studies and a survey of German firms validated according to the EU Environmental Management and Audit Scheme," *The Journal of Sustainable Product Design*, Vol. 3, No. 3-4, 2003

⁴³ Regulation (EC) No 1980/2000 of the European Parliament and of the Council of 17 July 2000 on a revised Community eco-label award scheme

⁴⁴ Directive 2005/32/EC of the European Parliament and of the Council of 6 July 2005 establishing a framework

would therefore be relevant for the Commission to further investigate this link and, where relevant, generate specific recommendation on the kinds of management practice that can promote synergistic effects.

Benefits:

- Accessible information on possible synergies between EMAS and product innovation oriented towards the environmental performance of the product.

Costs:

- Costs of developing a short pamphlet
- Translation costs

7.3.10. Regulatory relief

Our research revealed that expectations of regulatory relief figure highly as motivators for joining EMAS. At the same time, our evidence of concrete regulatory relief as generating benefits was low. While we did find evidence of improved relations with regulatory authorities, this did not often manifest in reduced inspections. This may perhaps demonstrate a lack of understanding by the regulatory authorities of the unique requirement of EMAS for regulatory compliance as a condition of registration

It seems that some of the hesitation on the part of regulatory authorities in delivering regulatory relief comes from a lack of clear direction at EU level. This suggests that it would be very useful to see clearer text on EMAS in some related legislation. It would be possible to consider introducing EMAS as a criterion for some degree of regulatory relief into a whole range of legislation under which permits are granted to allow activities to be undertaken, and a thorough review of relevant legislation would be required to identify all possible opportunities. The section below focuses specifically on IPPC, since this piece of legislation has been targeted by several Member States.

The IPPC Directive is currently being recast on the basis of the 2007 Commission proposal for a Directive on Industrial Emissions⁴⁵. The proposal included text that would oblige competent authorities to develop inspections programmes that specify the number of on-site inspections for installations. The programmes can be based on the systematic appraisal of environmental risks associated with particular installations. Competent bodies would be in a position to include EMAS as a criterion in assessing environmental risk, as (unlike ISO 14001) EMAS requires regulatory compliance as a condition of registration. However, the current proposed text does not specifically mention EMAS. Specific mention of EMAS as a criterion against which to make decisions regarding the number of inspections would serve to generate an EU prerogative for delivering regulatory relief. It may also be possible to link EMAS to other EU Directives with inspection requirements; we understand that this is currently being investigated by the Commission.

An additional relevant piece of legislation is Recommendation 2001/331/EC providing for minimum criteria for environmental inspections in the Member States⁴⁶, which does identify EMAS as a criterion to be considered when planning environmental inspections. In 2007, the Commission completed a review of the implementation of this recommendation in the 27 Member States as part of a review of the recommendations⁴⁷. In addition, in 2008, the European Parliament adopted a Resolution calling for a review on the Recommendations⁴⁸, as well as requesting that the Commission

for the setting of ecodesign requirements for energy-using products and amending Council Directive 92/42/EEC and Directives 96/57/EC and 2000/55/EC of the European Parliament and of the Council

⁴⁵ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0844:FIN:EN:PDF>

⁴⁶ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2001:118:0041:0046:EN:PDF>

⁴⁷ [Communication from the Commission to the Council, the European Parliament and the Economic and Social Council on the review of Recommendation 2001/331/EC providing for minimum criteria for environmental inspections in the Member States](#)

⁴⁸ [European Parliament resolution on the review of Recommendation 2001/331/EC providing for minimum criteria for environmental inspections in the Member States.](#)

come forward with a Directive on inspections. It would be relevant to feed into this review and ensure that EMAS is afforded a higher profile in guidance on planning environmental inspections.

Benefits:

- Clear legislative signals to Member States regarding how to deliver regulatory relief

Costs:

- Ongoing policy process.

With regards to non-legislative activities to promote environmental relief, the Commission could consider developing best practice guidance on delivering regulatory relief to organisations registered with EMAS. This could consider relief not only under IPPC, but additional possibilities such as reduced requirements under other EU Directives and national legislation, such as reporting or other administrative burdens.

Benefits:

- Clear examples of best practice in delivering regulatory relief provided to Member States, to be coordinated through the Forum of Competent Bodies.

Costs:

- Costs associate with developing guidance.

8. List of Indicators on the evolution of costs and benefits

A key aim of the study is to produce indicators to clearly illustrate the differing experiences of organisations adopting EMAS. These indicators are intended to allow the Commission to benchmark current costs and benefits, in addition to predicting the magnitude of costs and benefits that would be expected for organisations with particular characteristics.

These indicators present the costs and benefits measured through a comparative unit to enable the policy maker or individual organisation to identify and quantify the typical costs and benefits they may likely encounter based on basic organisation characteristics.

8.1. Analytical Approach

8.1.1. Development of Indicators

The objectives of this study require that indicators are developed to demonstrate the relative costs and benefits of EMAS adoption to individual organisations. Indicators that are easily comparable between organisations with different characteristics allows the policy maker to identify key trends and predict the magnitude of costs and benefits for an organisation wishing to adopt EMAS; this can help authorities' to better target incentives to different groups.

For this analysis, the average costs derived in the cost assessment have been indexed and normalised (i.e. equal to 1) based on the entire sample of data. Estimates of the costs by different groups of organisation and benefit examples are then presented proportionate to the normalised cost. For example, a cost or benefit of 1.1 would indicate that it is approximately 10% above the average cost for the total sample, whereas a value of 0.9 indicates that the cost/benefit is likely to be around 10% below the average. Recorded in this way, read across matrices can be developed which indicate the magnitude of costs and benefits expected by an organisation in region X, with characteristic Y.

Such indicators can help policy-makers to better target their interventions. For example, an indicator cost of 1.1 and a benefit of 1 in the first year, with costs and benefits of 1 annually in subsequent years might suggest that an incentive to reduce registration costs or provide more assistance in the first year might encourage EMAS adoption by organisations with similar characteristics. Initiatives, funding and support might therefore be better focused and more effective as a result. The indicators developed are presented following the Cost-Benefit assessment.

8.1.2. EMAS Cost and Benefit Indicators

Overview

Building on the results of the cost benefit assessment outlined in Chapter 5, and adopting the methodology described at the start of this chapter, indexed indicators of the costs of EMAS have been generated. As these indicators are only based on the survey sample, they are only intended as order of magnitude estimates of the potential costs incurred by different types of organisation. In order to provide a range of the potential costs affecting different organisation, each indicator is presented in relation to combinations of characteristics, linked by the common characteristic of organisation size. Taking multiple readings of the indicators should then provide an accurate range of expected costs.

Cost Indicators

Table 8.1 and 8.2 (overleaf) presents the cost indicators by different combinations of organisation

characteristics. Each indicator is a normalised measure of the costs expected to be incurred in relation to the sample average calculated at the start of this chapter. For example, an SME from Northern Europe, in the private sector and manufacturing according to indicators should be expected to face costs of between 0.71 and 0.83 of the average (three readings based on the characteristics are 0.83, 0.71 and 0.74).

Table 8.3 displays the indicators in more detail based on organisation size alone - the sample size does not allow this level of analysis at a two dimensional level. In the example given above, if this SME is a micro enterprise, its total costs in the first year are therefore likely to be towards the lower end of the 0.71-0.83 range and medium enterprises towards the higher end.

In some cases, these indicators provide an approximation of the barriers or incentives that may exist for organisations. For example, a range clearly above 1 in the first year indicates that first year costs are above average for the sample and may therefore represent a barrier to EMAS adoption. Where the range of derived indicators is particularly large (e.g. 0.6-1.2), this may indicate that a particular organisation characteristic has a strong impact on the estimated costs. Incentives targeted at these characteristics (i.e. public or private organisations) might therefore be the most effective at encouraging EMAS participation.

Thirdly, constructing indicators in this way allows any future estimates of the costs of EMAS to be normalised and benchmarked against the results of this study in order to track the progress of initiatives, incentives and cost structures over time.

Organisation Characteristic		First Year Indicators				Annual Indicators			
Size	Region/Sector/Ownership	External Costs	Internal Costs	Fixed Costs	Total Costs	External Costs	Internal Costs	Fixed Costs	Total Costs
SME	Southern Europe	0.52	0.50	1.04	0.72	0.73	0.56	0.86	0.68
	Northern Europe	1.56	0.87	0.51	0.83	0.91	0.66	0.56	0.65
	New Member States	0.82	0.91	0.13	0.60	0.62	1.66	0.14	1.03
Large	Southern Europe	0.94	1.04	1.50	1.20	1.29	1.14	1.62	1.32
	Northern Europe	1.32	2.13	0.95	1.56	1.43	1.94	1.22	1.64
	New Member States	1.40	0.79	0.43	0.74	0.59	0.97	0.72	0.85
SME	Public	1.37	0.67	0.97	0.88	1.10	0.82	0.67	0.80
	Private	0.75	0.58	0.86	0.71	0.68	0.58	0.78	0.66
Large	Public	1.32	1.24	0.89	1.11	0.81	1.21	0.72	1.00
	Private	1.04	1.64	1.31	1.43	1.50	1.65	1.62	1.62
SME	Manufacturing	0.73	0.49	1.06	0.74	0.54	0.50	0.92	0.65
	Services	0.88	0.70	0.74	0.74	0.74	0.71	0.60	0.68
Large	Manufacturing	1.04	1.56	1.31	1.39	1.41	1.53	0.94	1.32
	Services	1.28	1.28	0.99	1.17	1.59	1.16	0.64	1.02

Organisation Characteristic		First Year Costs				Annual Costs			
Size	Region/Sector/Ownership	External Costs	Internal Costs	Fixed Costs	Total Costs	External Costs	Internal Costs	Fixed Costs	Total Costs
SME	Southern Europe	€ 3,507	€ 11,483	€ 19,439	€ 34,428	€ 1,857	€ 8,110	€ 8,110	€ 17,676
	Northern Europe	€ 10,409	€ 19,866	€ 9,592	€ 39,867	€ 2,317	€ 9,570	€ 9,570	€ 16,907
	New Member States	€ 5,502	€ 20,725	€ 2,475	€ 28,702	€ 1,575	€ 23,950	€ 23,950	€ 26,825
Large	Southern Europe	€ 6,297	€ 23,673	€ 27,879	€ 57,849	€ 3,272	€ 16,442	€ 16,442	€ 34,283
	Northern Europe	€ 8,819	€ 48,625	€ 17,637	€ 75,081	€ 3,630	€ 28,023	€ 28,023	€ 42,602
	New Member States	€ 9,375	€ 18,125	€ 7,950	€ 35,450	€ 1,500	€ 14,000	€ 14,000	€ 22,000
SME	Public	€ 9,132	€ 15,328	€ 18,103	€ 42,563	€ 2,785	€ 11,833	€ 11,833	€ 20,657
	Private	€ 5,023	€ 13,141	€ 16,045	€ 34,209	€ 1,735	€ 8,295	€ 8,295	€ 17,076
Large	Public	€ 8,804	€ 28,267	€ 16,490	€ 53,560	€ 2,045	€ 17,451	€ 17,451	€ 25,930
	Private	€ 6,931	€ 37,498	€ 24,347	€ 68,775	€ 3,813	€ 23,706	€ 23,706	€ 42,067
SME	Manufacturing	€ 4,879	€ 11,211	€ 19,687	€ 35,776	€ 1,364	€ 7,252	€ 7,252	€ 16,856
	Services	€ 5,860	€ 15,972	€ 13,769	€ 35,601	€ 1,865	€ 10,297	€ 10,297	€ 17,601
Large	Manufacturing	€ 6,942	€ 35,484	€ 24,335	€ 66,762	€ 3,571	€ 22,113	€ 22,113	€ 34,177

Services	€ 8,563	€ 29,289	€ 18,398	€ 56,250	€ 4,025	€ 16,656	€ 16,656	€ 26,464
----------	----------------	-----------------	-----------------	-----------------	----------------	-----------------	-----------------	-----------------

Table 8.3: EMAS Cost Indicators by Organisation Size								
Organisation Size	First Year Indicators				Annual Indicators			
	External Costs	Internal Costs	Fixed Costs	Total Costs	External Costs	Internal Costs	Fixed Costs	Total Costs
Micro	0.55	0.31	0.63	0.47	0.40	0.35	0.43	0.38
Small	0.94	0.64	0.93	0.79	0.90	0.69	1.05	0.84
Medium	0.98	0.78	0.92	0.86	0.56	0.73	0.60	0.67
Large	1.16	1.57	1.23	1.38	1.33	1.56	1.41	1.49

Benefit Indicators

Due to the limited sample of quantitative responses, it is not possible to provide quantitative indicators of the benefits likely to arise for different groups of organisations. However, using consultation responses, it is possible to score the likelihood of particular benefits occurring in the future based on the number of responses within each group identifying a particular benefit as important. Scoring is based on the percentage of responses from each group as follows:

- 0-10% of responses – benefit unlikely to occur, score (0)
- 11-20% of responses – small chance of benefit occurring, score (+)
- 21-30% of responses – good chance of benefit occurring, score (++)
- 31%+ of responses – benefit highly likely to occur, score (+++)

The ranges above have been selected in order to differentiate between responses based on the total number of responses indicated through the survey. With most organisations indicating more than one benefit, only a few categories accounted for more than 30% of total. A large high-end range is therefore presented.

These indicators are presented by two sets of organisation characteristics, organisation size, industry sector and type, in Tables 8.3 to 8.5 respectively. Due to differences in the sample, when generating the indicators in relation to organisation size, 11-15% of responses was used to indicate benefits with a small chance of occurring, 16-20% for those with a good chance and 21%+ for those benefits with a high chance of occurring. For example, the indicators show that a large local authority is expected to incur some energy and resource savings by adopting EMAS and is more likely to improve stakeholder relationships than a smaller local authority.

Organisation Size	Energy & Resource Saving	Financial Saving	Improved Stakeholder Relationships	Improved Staff Recruitment / Retention	Increased Market Opportunities	Productivity Improvement	Reduction in Negative Incidents
Micro	+++	0	+++	+	+	0	++
Small	+++	0	++	0	+	+	++
Medium	+++	0	++	0	+	+	+++
Large	+++	0	+++	0	+	+	+++

Sector	Energy & Resource Saving	Financial Saving	Improved Stakeholder Relationships	Improved Staff Recruitment / Retention	Increased Market Opportunities	Productivity Improvement	Reduction in Negative Incidents
Agriculture, forestry and fishing	+	0	+	+	0	0	+++
Mining and extraction	-	-	-	-	-	-	-
Food, drink and tobacco	++	0	+	0	0	+	++
Textiles, leather, footwear and clothing	++	0	++	+	0	0	+++
Wood and wood products	-	-	-	-	-	-	-
Pulp, paper, and paper products	+++	+	+	0	++	0	+
Printing and publishing	++	+	+	0	+	+	+
Oil & fuel	+	0	0	0	+	++	0
Chemicals	++	+	+	0	+	+	++
Rubber and plastics	+	0	+	+	+	0	++
Non-metallic mineral products	++	0	+	0	+	0	++
Basic and fabricated metals	+++	0	+	0	+	+	+
Mechanical engineering	++	0	+	0	+	+	+
Electrical and electronic equipment	+	+	+	0	+	++	+
Transport equipment	0	+	+	+	+	0	+
Furniture, recycling and other manufacturing	+++	0	++	0	+	0	+
Utilities (gas, electric, water)	+	0	++	0	+	+	++
Construction	+	+	+	+	++	0	+
Motor vehicle and wholesale trade	+++	0	+	0	+++	0	+++
Retail trade and repair	-	-	-	-	-	-	-
Hotels and catering	++	+	+	+	+	+	+
Transport	0	0	+	0	++	0	++
Communications - broadcast	+	+	+	0	+	0	+++
Finance, insurance and intermediation	+++	+	+++	0	+	+	0
Real estate and renting	0	0	+	++	+	0	0
Other business services	+	0	+	0	+	+	+
Health, education, social and pers.services	+++	+	+	+	+	0	+
Other services	+	+	++	+	+	0	+

Organisation Size	Energy & Resource Saving	Financial Saving	Improved Stakeholder Relationships	Improved Staff Recruitment / Retention	Increased Market Opportunities	Productivity Improvement	Reduction in Negative Incidents
Public	++	+	++	+	0	0	+
Private	++	0	+	0	+	+	+

8.1.3. Evolutionary Indicators

Overview

The objectives of the study also required that indicators are proposed which would enable the future evolution of costs and benefits to be assessed. These indicators are also intended to be used to evaluate the success and/or failure of incentive schemes and initiatives, in addition to the monitoring general EMAS related activities.

Cost Indicators

Indicators generated from survey data, as used in the study, are recommended for monitoring the evolution of costs and assessing the impact of various initiatives introduced to reduce implementation costs or the complexity of the registration process. The advantage of this approach is that, by calculating costs based on person days, few sensitive data on wages or individual company costs are required. Similarly, by asking organisations to indicate ranges of costs, information costs for the organisations involve are low, often producing guesstimates of the identified impact and again minimising the need for sensitive or confidential information.

The cost indicators developed in this study have been normalised in relation to the average costs for the EU-27 Member States, therefore enabling future studies to map the progression of costs from this same base point so that changes can be easily compared.

Benefit Indicators

As shown by the results of this study, assessing the benefits of EMAS can be difficult. For example, when calculating energy savings resulting from EMAS, there are many factors which need to be considered before comparative indicators are developed. They include energy price fluctuations in oil, gas and electric, how each organisation uses the energy consumed (i.e. for central heating, furnaces, computers, plant machinery, etc.), what energy mix is used by different organisations and price differences between suppliers. Therefore, calculating energy benefits purely by price and volume for one organisation may misrepresent the potential savings experienced by other organisations with similar characteristics (i.e. industry sector, size or Member State). Consequently, tracking evolution of these types of benefit is prohibitively difficult, even though quantitative information might be provided through consultation exercises.

An alternative approach might be to conduct a top-down assessment of the various impacts of EMAS. For example, energy efficiency indicators in Europe are available⁴⁹, in addition to energy consumption data by industry sector⁵⁰. Changes in these indicators where a significant proportion of organisations are EMAS registered may therefore be used to quantify energy savings at least partially attributable to EMAS.

In another example, public procurement authorities in Member States may be able to provide information on the number of organisation tendering for contracts with EMAS and those without, plus an indication of their relative success rates. A simple count of how many times EMAS is mentioned in contracts or tender specifications may also be a good indicator of the potential benefits of EMAS.

Environmental and human accident databases held by insurers and national regulatory authorities to monitor health and safety related risks and accident rates, such as CHaSPI and RIDDOR in the UK,

⁴⁹ See: ODYSSEE energy efficiency indicators at : <http://odyssee-indicators.org>

⁵⁰ See: Eurostat (2009): Energy Statistics 2009 and JRC/IES (2006): Electricity Consumption and Efficiency Trends in the Enlarged European Union

could also be used as indicators of EMAS performance.

To take this a step further, those sites regulated under IPPC (large industrial) could be correlated with EMAS registrations in order to identify where supply chains have encouraged EMAS adoption by industry sector. Emissions and discharge data on such sites may also be available, enabling the identifications of environmental and regulatory benefits (i.e. where the EMAS audit and statement help fulfil IPPC regulatory requirements).

EMAS Uptake indicators

In order to assess the ultimate success or failure of revisions to EMAS and any initiatives adopted by European Commission or Member States to encourage uptake, an indicator of EMAS registration and re-registration is necessary. Recording those organisations currently registered by various organisational characteristics should enable a log to be kept of those organisations registered (at Member State or at least EU level). Indicators measuring the proportion of organisations registered for less than one year, more than three year or more than five years could then be developed by size of organisation and industry sector, to identify where incentives have been the most effective and where missed opportunities exist. We understand that such analysis is already carried out by the Commission.

Secondly, the number of listed companies requiring an EMS from their suppliers as part of corporate environmental policy could be used as a proxy for demand for EMAS and ISO 14001 worldwide. Information on such requirements should be available from corporate responsibility reporting and company websites. This may have an impact on other industry sectors, as such large organisations may be viewed as market leaders. Recording this information over time may enable the identification of where EMAS or ISO 14001 is best suited, given different market conditions and corporate strategies. Incentives and initiatives can then be targeted accordingly.

References:

- Aragòn-Correa J., "Strategic proactivity and company approach to the natural environment," *Academy of Management Journal*, 1998, Vol. 41
- Beltramo, R. Pandolfi, E: "Environmental certification of the municipality of Cesana: a cost/benefit analysis," University of Turin, http://web.econ.unito.it/cresta/convegni/file/cesana_maribor.pdf
- Biondi V., Frey M., Iraldo F., "Environmental management systems and SMEs: barriers, opportunities and constraints", *Greener Management International*, 2000, No. 29
- Bracke, R., Verbeke T. and Dejonckheere, V., "What distinguishes EMAS participants? An Exploration of Company Characteristics" in: Fondazione Eni Enrico Mattei, 2007
- Bracke, R. Verbeke, T. and Dejonckheere, V., "What Determines the Decision to Implement EMAS? A European Firm Level Study" in: *Environmental and Resource Economics*, p. 499-518, 2008
- Brouhle, K., "Information Sharing Devises in Environmental Policy: the EU Eco-label and EMAS", Working Paper, 2000
- Bo Chen "ISO 14001, EMAS, or BS 8555: an assessment of the environmental management systems for UK business" School of Environmental Sciences", University of East Anglia University Plain Norwich, 2004
- Clausen, J. et al., "The State of EMAS in the EU – Eco-Management as a Tool for Sustainable Development – Literature Study (for EMAS II Conference, 26 - 27 June 2002, Brussels, Belgium), 2002
- Clausen, Keil and Jungwirth, "The State of EMAS in the EU Eco-Management as a Tool for Sustainable Development," 2002
- Cesqa Sincert, Indagine sulla certificazione ambientale secondo la norma UNI EN ISO 14001; risultati indagine Triveneto, 2002
- Dasgupta, S., Hettige, H. and Wheeler, D., "What improves environmental compliance? Evidence from Mexican industry," *Journal of Environmental Economics and Management*, 2000, Vol. 39, pp. 39-66
- Darnall, N. and Edwards, D, "Predicting the Cost of Environmental Management System Adoption: The Role of Capabilities, Resources and Ownership Structure," *Strategic Management Journal*, 2006, pp. 301-320
- De Leo, Amadei, Gafà, Gaburro, "Opportunities and barriers to the diffusion of EMS: a comparative analysis of the Bavarian and the Italian case," 2003
- Environmental Certification and EMAS Registration of Educational Establishments – Step by Step Guide to EMAS, Hyvinkään-Riihimäen Aikuiskoulutuskeskus, 2004
- EMAS Peer Review for Cities EU LIFE Project, Environmental Management Systems in European Cities and EMAS delivering the EU 6th Environmental Action Program, Full report 2004
- EURO-EMAS Implementing EMAS in Europe's Local Authorities, EURO-EMAS Partner Cities, Final technical report, 2001
- ENDS (2007): EMS Survey Brings Mixed News for Certifiers, article downloaded from ENDS Report 382, November 2006, pp 30-33, available at: <http://www.endsreport.com>

Emilsson, S. and Hjelm, O., "Implementation of standardised environmental management systems in Swedish local authorities: reasons, expectations and some outcomes," *Environmental Science & Policy*, Vol. 5, Issue 6, December 2002, Pages 443-448

Emilsson, S. and Hjelm, O., "Different approaches to standardized environmental management systems in local authorities – two case studies in Gothenburg and Newcastle", *Corporate Social Responsibility and Environmental Management*, Vol. 11, Issue 1, pp 48 – 60, 2004

Focus Lab, *Territori Ecocertificati – Prima indagine sulla certificazione ambientale negli Enti pubblici in Italia*, 2003

Freimann, J. and Schwedes, R., "EMAS experience in German companies: a survey on empirical studies," *Eco-Management and Auditing*, 2000, Vol. 7, Issue 3, pp. 99-105

Friemann, J and Walther, M, "The Impacts of Corporate Environmental Management Systems – A Comparison between EMAS and ISO 14001" – EASY-ECO Evaluation of Sustainability Euro Conference, May 23-25, 2002, Vienna, Austria

Glachant, M., Schucht, S., Bueltmann, A. and Waetzold, F., "Companies' participation in EMAS: The influence of the public regulator," *Business Strategy and the Environment*, 2002, Vol. 11 Issue 4, pp. 254 – 266

Escapa González C., "Motivations and Barriers of Implementing an EMS in Spanish Organisations", School of Environmental Sciences, University of East Anglia University Plain, Norwich, 2004

Hamschmidt J. and Dyllick T., "ISO 14001: profitable? Yes! But is it eco-effective?" *Greener Management International*, No. 34, 2001

Hamschmidt, J., "Economic and Ecologic Impacts of Environmental Management Systems in Companies: Experience from Switzerland," Paper presented at Euro Environment 2000- Visions, Strategies and Actions towards Sustainable Industries, 2000

Heinelt, H. and Smith, R, ed. "Sustainability, Innovation and Participatory Governance – A Cross National Study on the EU Eco Management and Auditing Scheme", Ashgate Publishing, Ltd., 2003

Hoffmann, E., Ankele, K., Nill, J. and Rennings, K., "Product innovation impact of EMAS: Results of case studies and a survey of German firms validated according to the EU Environmental Management and Audit Scheme," *The Journal of Sustainable Product Design*, Vol. 3, No. 3-4, 2003

Hillary, "Small and Medium Sized Enterprises and Environmental Management Systems: Experience from Europe," 1998

Hillary, R. "Environmental management systems and the smaller enterprise," *Journal of Cleaner Production*, Vol. 12, Issue 6, 2004, Pages 561-569

Hillary, R. "Small and medium-sized enterprises and the environment: business imperatives," Greenleaf Publishing, 2000

IEFE – QualitAmbiente, "The Role of Local Public Institutions in Promoting Environmental Certification," Report IEFE-Università Bocconi, 2005

IRIS, "Environmental management systems – paper tiger or powerful tool?" The Swedish Institute of Production Engineering Research. Molndal, 2000

Jirillo, R. et al., "EMAS and its local diffusion in Italy", *Corporate Social Responsibility and Environmental*

Management, Vol. 10, Issue 1, pp 40 – 49, 2003

Kvistgaard, Egelyng, Frederiksen, and Johannesen, “MilijÆstyring og MilijÆrevision i danske virksomheder,” Copenhagen, 2001

Leal, Fa and Pasola, “Using environmental management systems to increase firms’ competitiveness,” *CSR and Environmental Management*, Vol. 10, No. 2, June 2003

Lulofs, K.R.D. and Bultman, M. and Eames, M. and Schucht, S. and Watzold, F. “*EMAS II and regulatory relief in Europe: Lessons from national experience*,” University of Twent, 2000

Marrow, D., V., “An assessment of the motivation for and results of environmental management system implementation and certification in the electricity and gas sector of Germany: Six case studies”, paper presented at Sustainability at the Millennium: Globalization, Competitiveness and the Public Trust, Ninth International Conference of Greening of Industry Network, Bangkok, January 21-25, 2001

Madsen and Ulhoi, “Industry and the environment: a Danish perspective,” *Industry and the Environment*, January-March, 1999

Majerčak, P, “How to implement ECO-management and audit scheme (EMAS) to small enterprise” in: Vadyba/Management, p. 82-88, 2006

Meima, R. and Starkey, R., “EMAS Eastwards – Implications of the Spread of Voluntary, Standardised Environmental Management Systems in Central and Eastern Europe, Project Report & Summary,” European Commission, 2000

Pedersen, E., “Perception of performance: how European organisations experience EMAS registration”, *Corporate Social Responsibility and Environmental Management*, Vol. 14, Issue 2, pp 61 – 73, 2006

Perkins, R. and Neumayer, E., “Europeanisation and the uneven convergence of environmental policy: explaining the geography of EMAS” in: *Environment and Planning C*, Vol. 22, No. 6, p. 881-897, 2004

Rennings, K., Frondel, M., Horbach, J. and Requate, T., “Environmental policy tools and firm-level management practices in Germany,” Zentrum fuer Europaeische Wirtschaftsforschung/RWI/OECD, 2003

Rennings, K., Ziegler, A., Ankele, K., Hoffman, E. and Nill, J., “The influence of the EU EMAS on environmental innovations and competitiveness in Germany: an analysis on the basis of case studies and a large-scale survey,” ZEW, Discussion Paper No. 03-14, 2003

Schylander, E. and Martinuzzi, A., “ISO 14001 - experiences, effects and future challenges: a national study in Austria,” *Business Strategy and the Environment*, 2007, Vol. 16, No. 2, pp. 133-147

Steger, U. et al, “The experience of EMAS in three European countries: a cultural and competitive analysis”, *Business Strategy and the Environment*, 2001, Vol. 11, Issue 1, pp. 32 - 42

SSSUP - Scuola Superiore S. Anna di Pisa, “EMAS Registration Within Local Authorities: The Case of Olympic Municipalities”, by Venturello I., Environmental Management and Control Master Final Thesis, 2005

Sunderland, “Eco-management standards and certification. In ISO14001 and beyond,” Greenleaf, London, 1997

Van Der Veldt, “Case studies of ISO14001: a new business guide for global environmental protection,” *Environmental quality management*, Autumn, 1997

Von Hauff, "The Contribution of Environmental Management Systems to "Sustainable Development" - The Example of the Environmental Management and Audit Scheme as an Instrument of European Environment Policy", 2000

Wagner, M., "National culture, regulation and country interaction effects on the association of environmental management systems with environmentally beneficial innovation," *Business Strategy and the Environment*, 2009, Vol. 18, N. 2, pp. 122-136

Watson, "The business implications of implementing ISO 14001," *Environmental quality management*, Autumn, 1996

Wätzold, F., Bültmann, A., Eames, M., Lulofs, K. and Schucht, S., "EMAS and the regulatory relief in Europe: lessons from national experience", *European Environment*, 2001, Vol. 11 Issue 1, pp. 37 - 48

Wätzold, F. and Bültmann, A., "The implementation of EMAS in Europe: A case of competition between standards for environmental management systems," In *Implementing European Environmental Policy: the impacts of Directives in the Member States*, Edward Elgar, Aldershot, 2001

Wittmann, "Environmental management. Pioneer Experiences with EMAS– the German situation," 1996

Wenk, Michael, S. ed. "The European Union's Eco-Management and Audit Scheme (EMAS)" Springer, 2005

Annex I: Online Questionnaire for Organisations

Questionnaire for EMAS Organisations

The Community Environmental Management and Audit Scheme (EMAS) is a voluntary scheme, designed to recognise and reward organisations that go beyond the requirements of environmental laws. In light of the Commission's proposal for a revision of the EMAS regulation [COM(2008)402/2], Milieu Ltd and Risk and Policy Analysts Ltd (RPA) have been contracted to evaluate the current status of EMAS adoption and its costs and benefits for participating organisations.

The outcome of the study will be used to understand what factors affect the relative costs and benefits of EMAS for different organisations and what measures could encourage more organisations to participate, or ensure that organisations remain registered with EMAS.

How You Can Help

Your organisation has been identified as registered with EMAS, either currently or in the past. We would greatly appreciate it if you could complete the following short questionnaire, which will help the Commission in its plans for improvement of EMAS. The questionnaire is multiple-choice and can be completed online at your convenience (a word version for printing out is available upon request); it should take no more than 30 minutes to complete. **Where questions ask for additional information, you may reply either in English or in your native language, if this is more convenient.**

If you feel that the multiple-choice questions do not fully represent your organisation's views and experiences with EMAS, please contact us at the address below (in your native language by email, if you prefer) and we will be happy to discuss your views. If your organisation was registered with EMAS in the past, but is no longer registered, we are very interested in your views on EMAS and there are specific questions about your reasons for withdrawal.

Please note that your responses will be treated confidentially and care will be taken to ensure that specific responses cannot be linked to individual organisations

We would like to receive your completed questionnaire by **27 March 2009**; however, if you would like to respond to this survey but are unable to do so before 27 March 2009, please let us know. All responses should be submitted online or sent to the address given below by e-mail, fax or post.

Thank you very much for your assistance.

Mark Peacock

Risk & Policy Analysts Ltd.

Farthing Green House

1 Beccles Road

Loddon, Norfolk

NR14 6LT

United Kingdom

Telephone: +44 1508 528465

Fax: +44 1508 520758

E-mail: mark@rpald.co.uk

WWW: <http://www.rpald.co.uk>

Section A: Organisation Details

Organisation name:

Name of contact person:

Position:

Address:

Telephone number:

Fax number:

E-mail address:

Q1. Please provide the following organisational details	
Size of your company	
Micro company (turnover equal to or below €2m, below 10 employees)	
Small company (turnover between €2m and €10m, 10-50 employees)	
Medium company (turnover between €10 m and €50m, 50-250 employees)	
Large company (turnover over €50m, more than 250 employees)	
In which countries is your organisation located?	
European Head Office	
Other Sites in Europe	
Non-EU Sites	

Q2. Please indicate your organisation's principle area(s) of activity	
Public authority	
Private company	
Other private organisation	
Sector	NACE Code
Agriculture, forestry and fishing	A01-02, B05
Mining and extraction	C10-14
Food, drink and tobacco	DA15-16
Textiles, leather, footwear and clothing	DB17-DC19
Wood and products of wood/cork	DD20
Pulp, paper and paper products	DE21
Printing and publishing	DE22
Mineral oil refining, coke and nuclear fuel	DF23
Chemicals	DG24
Rubber & plastics	DH25
Non-metallic mineral products	DI26
Basic metals & fabricated metal products	DJ27-28

Q2. Please indicate your organisation's principle area(s) of activity		
Mechanical engineering	DK29	
Electrical and electronic equipment (incl. instruments & optical equipment)	DL30-33	
Transport equipment	DM34-35	
Furniture, miscellaneous manufacturing and recycling	DN36-37	
Utilities (gas, electric and water supply)	E40-41	
Construction	F45	
Motor vehicle and wholesale trade	G50-51	
Retail trade and repairs	G52	
Hotels and catering	H55	
Transport	I60-63	
Communications (including broadcasting & telecommunications)	I64	
Finance, insurance and finance intermediation	J65-67	
Real Estate and Renting	K70-71	
Other Business services	K72-74	
Health, education, social and personal services	L75, M80 & N85	
Other services (includes arts, entertainment, software publishers, motion picture and sound recording industries)	O90-93	

Section B: Experience with EMAS

Q3. Please indicate whether your organisation is currently EMAS registered, or was registered in the past, the number of registrations you hold and the year when your organisation was first registered.		
	Number of registrations	Year of first registration
Currently		
In the past		

Q4. Please indicate which THREE of the following statements best describe your organisation's reason for becoming EMAS registered.	
	Three most important
Requirement of customer/supply chain	
Requirement of shareholders	
Industry sector initiative	
Prerequisite for public funding / access to public contract tendering	
Wish to improve resource and production efficiency within organisation (energy, waste, water, etc.)	
Improve reputation compared to competitors	
Generate new 'greener' product or service	
Response to competitor actions	
Improve legislative compliance	
Improve risk management	
Internal management approach/culture	
Encourage employee participation	
Transparency with stakeholders / local community pressure	
Reduced implementation/application costs of other legislative & non-legislative actions (i.e. streamline permit applications, reduced	

duplication of effort)	
Financial public support (tax credits, tax reduction, grants, etc.)	
Technical or informational public support (pilot projects, training, etc.)	
Other (Please specify)	

Q6. Was the consistency of EMAS with legislation in your principle Member State an important reason for your decision to adopt it?	
Yes (Please give details)	
No	

Q7. Did your organisation implement an Environment Management System prior to EMAS?	
Yes (Please give details)	
No	

Q8. Is your organisation also certified to ISO 14001? If so, please give your reasons for also seeking EMAS registration.		
	Yes	No
Certified to ISO 14001		
If yes, why did you also seek EMAS registration?		

Q9. Does your organisation consider EMAS to be a requirement of management best practice?	
No	
Yes	
If yes, please give your reasons	

Section C: Reasons for withdrawing from EMAS

Q10. If your organisation was registered with EMAS but has now withdrawn, please score your organisation's reason(s) for doing so (with 1 as the most important and 5 as not important).	
Cost of registration	
Costs of implementation	
Benefit of unclear or insufficient to justify registration	
Regulatory pressures	
Lack of Member State incentives (e.g. financial and technical support)	
Internal management preference or culture/approach within organisation	
Other environmental management standards preferred (please specify)	
Other (please specify)	

Q11. What factors might encourage your organisation to register with EMAS again? Please
--

score the factors (with 1 as providing strong encouragements and 5 as not providing encouragement).	
Reduced fees for registration	
Help with implementation	
Customer requirements	
Reduced regulatory requirements (fewer inspections/reporting requirements)	
Competitor registration	
Other (please specify)	

Section D: Benefits and Costs of EMAS

Q12. What has been the most positive impact on your organisation of adopting EMAS? Please rank the impacts, with 1 being the most significant and 5 the least significant	
Benefit	Rank
Energy/resource savings	
Financial savings	
Improved stakeholder relationships	
Improved staff recruitment and retention	
Increased market opportunities	
Productivity improvement	
Reduction in negative incidents (accidents, prosecutions, inspections etc)	
Other (please specify)	

Q13. How has your organisation's relationship with customers, consumers and stakeholders changed since registering with EMAS?				
Stakeholder	No change	Noticeable Improvement	Significant Improvement	Major Improvement
Local stakeholders (residents and local businesses)				
General public and consumers				
Customers (and supply chain)				
Investors				
Staff				
Public authorities				
Other (Please specify)				

Q14. Has EMAS participation reduced the number of negative incidents (including environmental inspections, monitoring or number of accidents on site)? If so, please indicate the extent of this reduction				
Negative incident	No change	Noticeable reduction	Significant reduction	Major reduction
Environmental breaches				
Accidents (worker and environmental)				
Time spent on monitoring				

legislative compliance				
External inspection				
Internal inspection/monitoring				
Non-conformities (e.g. machine breakdown, repair, etc.)				
Local stakeholder complaints				
Other (Please specify)				

Q15. Has adopting EMAS given your organisation financial benefits? If so, please indicate which benefits and, if possible, provide an estimate of the size.

Benefit	Tick all areas of benefit that apply	Estimated annual size (€ or % change)
Cost saving through more efficient production techniques		
Cost saving from reduced energy use		
Cost saving from more efficient use of resources, including recovery of waste products		
Cost savings through reduced taxes		
Reduced insurance premiums		
Cost savings on legal procedures		
Access to Member State government grants/funding		
Other (Please specify)		

Q16. Has EMAS registration assisted your organisation to qualify for new opportunities in the public sector, or has EMAS assisted your organisation compete more successfully for new contracts? If so, please indicate the number or value of contracts in which EMAS has assisted your organisation.

	Yes/No	Number/ Value (€) of Contracts
Additional contracts won		
Access to additional public procurement contracts		
Contract bid(s) more successful due to EMAS adoption (compared with competitors)		

Q17. Has EMAS registration had benefits for your general management systems?

No	
Yes (please give details)	

Q18. Please indicate how many person-days your organisation needed to first implement EMAS, (either your own staff or an external organisation)

Task	Person - Days						
	≤1	1-2	3-5	6-10	11-15	16-20	21 + (Please specify)
External consultancy							
Internal staff (by EMAS Task)							
- Environmental review							

- EMS development							
- Internal audit							
- Preparation of statement							
Internal staff training							
Attaching EMAS logo							
Modifications to IT systems							
Publication of statement/							
Other (Please specify)							

Q19. Please indicate how many person-days your organisation requires to maintain EMAS (either your own staff or an external organisation).							
Task	Person - Days						
	≤1	1-2	3-5	6-10	11-15	16-20	21+ (Please specify)
External consultancy							
Internal administration (by EMAS Task)							
- Environmental review							
- EMS development							
- Internal audit							
- Preparation of statement							
- Other (please specify)							
Internal staff training							
Attaching EMAS logo							
Modifications to IT systems							
Publication of statement							
Other (Please specify)							

Q20. What costs has your organisation incurred to implement EMAS, in the first year and annually in subsequent years?				
	1 st Year Costs		Annual Costs	
	Tick all incurred	(€)	Tick all incurred	(€)
Registration fee				
Validation fee/charge				
Verification fee/charge				
IT system costs (software, etc.)				
Changes to stationery and publicity material to incorporate EMAS logo				
Capital expenditure (e.g. machinery)				
Other (please specify)				

Q21. Please provide an estimate of the typical daily or annual full-time equivalent (FTE) costs of staff in your organisation involved in EMAS		
Staff Type	Daily Rate (€)	FTE (€'000)

	<250	251-500	501-1000	1000-1500	>1500	<20	20 – 30	30-40	50-70	>71
External Consultant										
Internal Experts (e.g. Managers, advisors, auditors, etc.)										
Internal Administration (IT etc.)										
Other (please specify)										

Section E: Uptake Incentives and Barriers

Q22. What incentives were available from your Member State authorities to encourage EMAS registration? Please tick all that were available, and tick those which you took up		
Incentive/Initiative	Available	Taken up
Reduced regulatory enforcement (i.e. fewer inspections or reporting requirements for EMAS organisations due to risk based enforcement by authorities)		
Guidance documents		
Financial support to register (e.g. reduced taxes or charges)		
Technical assistance to register		
Promotion of EMAS registered organisations		
Reduced time and costs or other legislative & non-legislative actions (e.g. streamlined permit applications, simpler response to customer questions)		
Other (please specify)		
<i>If possible, please provide details</i>		

Q23. Which of the incentives do you consider the most important in encouraging EMAS participation? Please rank them (with 1 as the most important and 5 as the least important)	
Incentive/Initiative	Rank
Reduced regulatory enforcement (i.e. fewer inspections or reporting requirements for EMAS organisations due to risk based enforcement by authorities)	
Guidance documents	
Financial support to register (e.g. reduced taxes or charges)	
Technical assistance to register	
Promotion of EMAS registered organisations	
Reduced time and costs or other legislative & non-legislative actions (e.g. streamlined permit applications, simpler response to customer questions)	
Other (please specify)	

Q24. What do you consider to be the greatest barriers to wider uptake of EMAS? Please rank the barriers (with 1 as the most important and 5 as the least important).	
Cost of registration	
Costs of implementation	
Benefit unclear or insufficient to justify registration	
Regulatory pressures	
Lack of Member State incentives (e.g. financial and technical support)	
Internal management preference or culture/approach within organisation	
Other (Please specify)	

Section F: Other Issues

Q22. Finally, if you feel that we have missed anything important in relation to the reasons for implementing EMAS in your organisation and its impacts, please let us know below (and continue on a separate sheet if necessary).
<i>Other Comments</i>

Annex II: List of Contacts in the Competent Bodies

Country	Competent Body	Contact Name	Tel	Email
Austria		Ms. Monika Brom	+43/1/31304-5535	monika.brom@umweltbundesamt.at
Belgium		Mr Luc BAEKELANDT	Tel: +32 2 289 21 07 Fax: 02 289 21 12	luc.baekelandt@fanc.fgov.be
Bulgaria		Ms. Nadejda Hristova	Phone: +359 2 940 63 58 Fax: +359 2 981 33 98	n.hristova@moew.government.bg
Czech Republic		Pavel Ruzicka	Tel. : +420 267 122 784 Fax : +420 267 126 983	pavel_ruzicka@env.cz
Cyprus		Mrs. Eleni Stylianopoulou	Tel. : +357/22303865 Fax : +357/22774945	estylianopoulou@environment.moa.gov.cy
Denmark		Mr. Kasper Remmen Dirckinck-Holmfeld Msc.	Tel: +45 72 54 40 00 Fax: +45 33 32 22 28 Direct: +45 72 54 43 68	kadir@mst.dk
Estonia		Ms. Katre Liiv	Tel.: +372 6737570 fax +372 6564071	katre.liiv@ic.envir.ee
Finland		Ms Pirke Suoheimo	tel: +358 (0)9 40300460 fax: +358 (0)9 40300491	http://www.miljo.fi/emas http://www.environment.fi/emas s.pirke.suoheimo@ymparisto.fi
France		Anne Maral Bureau des Risques Technologiques	Tel:+33 (0)14219 25 66 Fax: +33 (0)14219 13 93	anne.maral@developpement-durable.gouv.fr
Germany		Hermann Hühwels	Tel.: 0032-2-2861 664 Fax: 0032-2-2861 605	huewels.hermann@bruessel.dih.k.de
Greece		Ms Angeliki Tsachali	Tel.: +30 210 6465762 Fax: +30 210 6434 470	ang.tsachali@tmeok.minenv.gr
Hungary		Ildikó Babcsány	tel: +36-1-2249-140	babcsany@mail.kvvm.hu
Ireland		Andrew Stratford	Tel.: +353 (0)1 607 3119 Fax: +353 (0)1 607 3109	andrew.stratford@inab.ie
Italy		President: Dr. Elio Lannutti	Tel. +39 06 5007 2441 Fax +39 06 5007 2439	lannutti@apat.it
Latvia		Iveta Jegere	Phone: +371 7770818 Fax: +371 7321049	iveta.jegere@ivn.gov.lv
Lithuania		Maryte Kuodyte	T: +370 266 28 25 fax:+370 266 28 00	m.kuodyte@aaa.am.lt
Luxembourg		Mr Pierre Prum	Tel: +352 -478.68.43 Fax: +352 -40.04.10	pierre.prum@mev.etat.lu
Malta		Ing. Francis E. Farrugia EMAS/EUEB Co-ordinator	Tel: +356 21242420 Fax: +356 21242406	francis.e.farrugia@msa.org.mt
Netherlands		Mr Frans Stuyt	Tel: +31 (0)70362.39.81 Fax: +31 (0)70363.50.84	f.w.stuyt@sccm.nl
Norway		Mr Jostein Dyrkorn Legal Adviser	Tel +47 75 00 76 76, Fax +47 75 00 75 35	jostein.dyrkorn@brreg.no

Poland	Anna Kicinska	Tel. +48225792642 Fax +48225792795	anna.kicinska@mos.gov.pl
Portugal	Maria Gorete Sampaio	Tel: +351 214.728.200 Fax: +351 214.719.074	gorete.sampaio@apambiente.pt
Romania	Contact person: Mrs. Felicia Ioana, counselor, MEWM	Tel.: +4021 316 04 21 Fax: +4021 316 04 21	felicia.ioana@mmediu.ro
Slovakia	Jozef Gregor, Director of department	Tel: +421 2 5956 2408 Fax: +421 2 5956 2002	gregor.jozef@enviro.gov.sk
Spain	Soledad Aycart Andrés Guillermo Chacartegui Margarita Vaquer	Tel: +34 91453 53 65	SAycart@mma.es ecotur@caib.es mvaquer@dgqal.caib.es
Sweden	Sven-Olof Ryding	Tel: +46 (0)8 700 66 91 Fax: +46 (0)8 700 66 99	sven-olof@miljostyrning.se
United Kingdom	Martin Baxter Sophie Bennett	Tel: +44 (0)1522540069 Tel: +44 (0)1522 540069 ext. 241	m.baxter@iema.net s.bennett@iema.net

Annex III: Semi-structured questionnaire for interviews with organisations

You very kindly completed an online questionnaire costs and benefits of EMAS for your organisation, as part of a study by Milieu Ltd and Risk and Policy Analysts Ltd (RPA) for the European Commission. We would now like to ask you a few more detailed questions about your experiences with EMAS.

Organisation Details

(Will be completed for each organisation to be interviewed, from online questionnaire responses).

Organisation name:	<input type="text"/>
Name of contact person:	<input type="text"/>
Position:	<input type="text"/>
Address:	<input type="text"/>
	<input type="text"/>
	<input type="text"/>
Telephone number:	<input type="text"/>
Fax number:	<input type="text"/>
E-mail address:	<input type="text"/>
	<input type="text"/>
Organisations size	<input type="text"/>
Organisation location	<input type="text"/>
Principle area of activity	<input type="text"/>

Experience with EMAS

Question 1 – Follow-up to Question 6 in online questionnaire

You indicated in your questionnaire response that the three most important reasons for your organisation seeking EMAS registration were:

-
-
-

(to be completed based on question 6 response).

We would like to explore these reasons a little further with you. Thinking back to the time when your organisation decided to seek EMAS registration:

(The table below sets out follow-up questions for each of the responses: ask those relevant to the responses given)

Reasons for becoming EMAS registered: follow-up to particular responses to Question 6 in online questionnaire	
Response	Follow-up
Requirement of customer/supply chain	Which part of the supply chain has the requirement? (e.g. customer, industry association or other?) How was the requirement expressed? (e.g. condition of contract, condition of association membership)
Requirement of shareholders	Do you have a single shareholder (e.g. you are a subsidiary of another company/organisation) or multiple shareholders? Are the shareholders based in your country, other Member States or outside the EU? How was the requirement expressed?
Industry sector initiative	What form did the initiative take? Is it compulsory or voluntary? What was the reason behind its development?
Prerequisite for public funding / access to public contract tendering	What public sector bodies required EMAS registration? For what purposes? What proportion of your funding/turnover is accounted for by organisations requiring EMAS?
Wish to improve resource and production efficiency within organisation (energy, waste, water, etc.)	What particular aspects of EMAS did you expect to assist with improving efficiency? Which aspects of efficiency did you expect to be most improved?
Improve reputation compared to competitors	What proportion of your competitors are EMAS registered? With whom did you expect your reputation to improve through EMAS ?
Generate new 'greener' product or service	What types of greener product or service did you anticipate would be developed? What aspect of EMAS did you expect to contribute to this?
Response to competitor actions	Was this in response to action by one competitor or several? Competitors in your own country or other Member States? What proportion of your competitors are EMAS registered?
Improve legislative compliance	Were there specific aspects of compliance that were of concern to you? What aspects of REACH did you expect would assist most with legislative compliance?
Improve risk management	Were there specific aspects of risk management that were of concern to you? What aspects of REACH did you expect would assist most with risk management?
Internal management approach/culture	What aspects of your internal management approach/culture led you to seek EMAS registration? How did EMAS fit in with these aspects?
Encourage employee participation	Was there significant employee participation in environmental matters prior to EMAS registration? What particular aspects of EMAS did you expect to encourage employee participation?
Transparency with stakeholders / local community pressure	Did stakeholders/the local community express concern about your environmental performance prior to EMAS? What aspects of EMAS did you expect to contribute most to improved transparency?
Reduced implementation/application costs of other legislative & non-legislative actions (i.e. streamline permit applications, reduced duplication of effort)	Which actions did you expect to reduce due to EMAS? What aspects of EMAS did you expect to contribute most to this reduction?
Financial public support (tax	Which public organisations were offering such support?

credits, tax reduction, grants, etc.)	What was the anticipated value to your company of this support?
Technical or informational public support (pilot projects, training, etc.)	Which public organisations were offering such support? How did you expect this support to assist you with gaining EMAS?
Other (Please specify)	[Follow-up will be reply-specific]

The questionnaire asked you to indicate the three most important reasons. Were there other reasons that were also important to you?

Question 2 – Follow-up to Question 9 in online questionnaire

Reasons for step-up from ISO 14001(for positive responses to Question 9 in online questionnaire.	
If yes, why did you also seek EMAS registration?	Explore in detail the response on reasons; what particular aspects of EMAS are beneficial and why

Benefits and Costs of EMAS

Question 3 – Follow-up to Question 13 in online questionnaire

You indicated in your questionnaire response that the three most important reasons for your organisation seeking EMAS registration were:

-
-
-

(to be completed based on question 13 response).

We would like to explore these reasons a little further with you.

(The table below sets out follow-up questions for each of the responses: ask those relevant to the responses given)

Positive impacts of adopting EMAS: follow-up to particular responses to Question 13 in online questionnaire	
Response	Follow-up
Energy/resource savings	What form did the savings take? What aspect of EMAS identified the savings? Can you quantify the savings?
Financial savings	What form did the savings take? What aspect of EMAS identified the savings? Can you quantify the savings? [see also specific questions on financial costs below]
Improved stakeholder relationships	With which types stakeholders were relationships most improved? How did this improvement become apparent? Have improved relationships had any other benefits for the company? [see also specific questions on relationships below]
Improved staff recruitment and retention	Did the improvement apply to all staff types/grades or to particular ones (e.g. younger recruits). Can you quantify the improvement?
Increased market opportunities	What market opportunities have been increased? In which markets? How do you know that these are linked to EMAS?

	Can you quantify the increase?
Productivity improvement	What aspects of productivity have improved? What aspects of EMAS contributed to these? Can you quantify the improvement?
Reduction in negative incidents (accidents, prosecutions, inspections etc)	What types of negative incidents have reduced? What aspects of EMAS contributed to these? Has the reduction had other benefits for the company? [see also specific question on adverse incidents below]
Other (please specify)	[Follow-up will be reply-specific]

Question 4 – Follow-up to Question 14 in online questionnaire

You indicated in your questionnaire response that EMAS had changes your relationships with customers, consumers and stakeholders in the following ways:

-
-
-

(to be completed based on question 14 response).

We would like to explore these changes a little further with you.

If the response is NO CHANGE: explore why this might be the case (lack of awareness of EMAS? other factors of greater importance?)

If the response is any form of IMPROVEMENT: explore how the improvement has become apparent (e.g. remarks by consumers/stakeholders, reduction in numbers of complaints, increased orders from customers etc.). What benefits has the improvement had for the organisation (e.g. less time spent dealing with complaints/trying to improve relationships, increased sales etc. – try to quantify, where possible).

Question 5 – Follow-up to Question 15 in online questionnaire

You indicated in your questionnaire response that EMAS had reduced the number of negative incidents in the following ways:

-
-
-

(to be completed based on question 15 response).

We would like to explore these changes a little further with you.

If the response is NO CHANGE: explore why this might be the case (low level of adverse incidents before EMAS was adopted? Adverse incidents are due to factors other than environmental management system?)

If the response is any form of IMPROVEMENT: explore how the improvement has become apparent (e.g. reduction in recorded numbers of negative incidents,). What benefits has the improvement had for the organisation (e.g. less time spent dealing with negative incidents, reduced costs for inspection, lower costs associated with accidents, such as health care and insurance costs, lower repair costs – try to quantify, where possible).

Question 6 – Follow-up to Question 16 in online questionnaire

You indicated in your questionnaire response that EMAS had generated the following financial benefits:

-
-
-

(to be completed based on question 16 response).

We would like to explore these changes a little further with you.

For each area where a potential benefit was identified, try to:

- Determine how the benefit was identified (i.e. what evidence there is)
- Quantify the benefit (if not done so in online questionnaire response)
- Discuss what aspects of EMAS contributed to the benefit

If no benefits were identified, explore possible reasons for this. Might there be benefits that are not recognised/recorded?

Question 7 – Follow-up to Question 17 in online questionnaire

You indicated in your questionnaire response that EMAS had given rise to the following opportunities:

-
-
-

(to be completed based on question 17 response).

For each area where an opportunity was identified, try to:

- Determine how the opportunity was identified (i.e. what evidence there is)
- Quantify the opportunity (if not done so in online questionnaire response)
- Discuss what aspects of EMAS contributed to the opportunity

If no opportunities were identified, explore possible reasons for this. Might there be opportunities that are not recognised/recorded?

Question 7 – Follow-up to Question 18 in online questionnaire

Ways in which EMAS benefits for your general management systems – follow up to positive responses to Question 18.	
Yes (please give details)	Explore what evidence the respondent has that general management systems have improved and what aspects of EMAS have contributed to this.

Question 8 – Follow-up to Questions 19 - 22 in online questionnaire

Talk through with the organisation the responses to questions 18-22, with a view to completing any missing data, determining how costs are recorded/identified and obtaining a view of the significance of costs to the organisation.

Uptake Incentives and Barriers

Question 9: Follow up to Question 23 in online questionnaire

You indicated in your questionnaire response that you had taken advantage of the following incentives:

-
-
-

(to be completed based on question 23 response).

For each area incentive taken up, discuss:

- Who provided the incentive (e.g. local government, central government, other)
- What was the scale of the incentive (e.g. % reduction in inspections/reporting, size of financial assistance, number of days technical; assistance etc)
- How did the incentive specifically assist the company in achieving EMAS registration
- How critical was the incentive in the decision to register for EMAS?

Question 10: Follow up to Question 24 in online questionnaire

In your questionnaire response you ranked the following incentives as very or fairly important:

-
-
-

(to be completed based on question 24 response incentives ranked 1 and 2).

For each area incentive ranked as important, discuss why the incentive is considered particularly important

You also ranked the following incentives as not important or only slightly important:

-
-
-

(to be completed based on question 24 response incentives ranked 3 and 4).

For each of these incentives, explore:

- Why it is not considered important
- What changes to the incentive could have made it more important to you organisation

Question 11: Follow up to Question 25 in online questionnaire

In your questionnaire response you identified the following as very or fairly important barriers to uptake of EMAS:

-
-
-

(to be completed based on question 25 response incentives ranked 1 and 2).

For each barrier identified, explore:

- Why it is considered an important barrier

- How the organisation overcame the barrier
- What incentives or other changes could be made to reduce the barrier in future.

Other Issues

Question 12: Follow up to Question 26 in online questionnaire

Discuss any comments added by the organisation in response to question 26

Specific questions for companies that have withdrawn from EMAS

Question 13: Follow up to Question 11 in online questionnaire

In your questionnaire response you ranked the following reasons for withdrawing from EMAS as very or fairly important:

-
-
-

(to be completed based on question 11 response incentives ranked 1 and 2).

For each reason ranked as important, discuss:

- what particularly aspects affected the company
- what changes in that reason occurred between initial registration and withdrawal

Question 14: Follow up to Question 12 in online questionnaire

In your questionnaire response you ranked the following factors that could encourage you to re-register with EMAS as very or fairly important:

-
-
-

(to be completed based on question 12 response incentives ranked 1 and 2).

For each factor ranked as important, ask the relevant follow up question outlined in the table below

Factors that might encourage organisations to register with EMAS again: follow up to question 12 responses	
Reduced fees for registration	What % reduction would be required?
Help with implementation	What form of help? Available free of charge or for payment?
Customer requirements	How many customers would need to make this a requirement?
Reduced regulatory requirements (fewer inspections/reporting requirements)	What % reduction would be required?
Competitor registration	How many competitors would need to register? Any particular competitor/market?
Other (please specify)	[to be based on specific response]

Annex IV: Semi-structured questionnaire for interviews with Member State Officials

Questions for Competent Authorities

Contact Details – to be completed by interviewer

Member State	
Name of person answering questionnaire	
Organisation	
Position	
Daytime telephone number	
Email	

ON-GOING SUPPORT TO REGISTERED ORGANISATIONS

1. Do you have a mechanism for providing on-going information support to registered organisations?
2. Do you provide technical assistance to registered SMEs in meeting the on-going requirements of EMAS registration?
3. What are the associated costs?
4. In your opinion, does this technical assistance contribute to the successful uptake of EMAS?

INCENTIVES

Specific questions on incentives will be posed to each Competent Authority depending on the types of incentives identified in the Commission report

5. Please indicate what you consider to be the most significant incentive for an organisation to register for EMAS.
6. What financial benefits do the incentives bring to organisations?
7. Is there a national policy for taking EMAS into account when making public procurement decisions? If yes, please provide details.
8. If yes, has this generated an additional incentive for organisations to seek EMAS registration?
9. Is regulatory relief offered to organisations that have EMAS registration? Under which pieces of legislation?

BARRIERS

10. In your opinion, what are the main barriers to organisations seeking to implement an environmental management system?
11. Are these barriers particularly high for certain types of economic sectors or for particular sizes of organisation?
12. Which of the requirements for EMAS registration are the most challenging for organisations?

Environmental review
Establishing an environmental management system
Environmental audit
Environmental statement
Being in legal compliance
Improving environmental performance

13. How does this vary with the scale and sector of the organisation?

PROMOTIONAL ACTIVITIES

14. Please describe any activities that have been undertaken or are activities currently on-going to promote EMAS as a system to potential participating organisations?
15. What were the associated costs
16. What benefits were perceived?
17. Have activities been undertaken or are activities currently on-going to raise public recognition of the EMAS logo?
18. What were the costs of these activities?
19. What benefits were perceived?

Annex V: Analysis of Responses to the EMAS Questionnaire

Section A: Organisation Details

Survey Respondents Compared to Total EMAS Population by Member State and Organisation Size

Organisation Size	No. Registered Organisations*	No. Surveyed	Sample %
Micro	764	40	5%
Small	1,355	111	8%
Medium	1,126	114	10%
Large	878	175	20%
Total	4,123	440	11%

**From EMAS register, Note: Not all survey responses or registered organisations provide organisation size data.*

Member State	EMAS Population			Survey Sample as % Population		
	SME	Large	Total	SME	Large	Total
Austria	202	51	253	5%	12%	7%
Belgium	38	10	48	16%	90%	31%
Bulgaria	0	0	0	0%	0%	0%
Cyprus	4	0	4	50%	0%	50%
Czech Republic	15	18	33	27%	22%	24%
Denmark	76	14	90	25%	43%	28%
Estonia	1	1	2	0%	0%	0%
Finland	15	26	41	0%	12%	7%
France	5	7	12	40%	43%	42%
Germany	941	434	1375	4%	8%	5%
Greece	50	10	60	6%	50%	13%
Hungary	20	5	25	5%	20%	8%
Ireland	3	2	5	33%	100%	60%
Italy	826	84	910	10%	44%	13%
Latvia	8	0	8	38%	0%	38%
Lithuania	0	0	0	0%	0%	0%
Luxembourg	1	0	1	0%	0%	100%
Malta	0	1	1	0%	100%	100%
Netherlands	4	5	9	50%	60%	56%
Poland	4	8	12	0%	25%	17%
Portugal	65	12	77	15%	58%	22%
Romania	2	0	2	50%	0%	50%
Slovakia	3	3	6	0%	0%	0%
Slovenia	0	2	2	0%	0%	0%
Spain	880	122	1002	8%	30%	10%
Sweden	46	28	74	9%	25%	15%
United Kingdom	36	35	71	28%	20%	24%
Total EU-27	3245	878	4123	8%	20%	11%

1. *What is the size of your organisation?*

Organisation Size*	Number of Responses	% Responses
Micro	40	9%
Small	114	25%
Medium	119	26%
Large	182	40%
Total	455	100%
*Micro (Annual turnover equal to or below €2m), Small (Annual turnover over €2m and below €10m), Medium (Annual turnover over €10m and below €50m), Large (Annual turnover above €50m)		

2. *In which Member State is your organisation principally located?*

Member State	Number of Responses	% Responses
Austria	17	4%
Belgium	16	3%
Bulgaria	0	0%
Cyprus	2	0%
Czech Republic	8	2%
Denmark	25	5%
Estonia	0	0%
Finland	3	1%
France	5	1%
Germany	72	16%
Greece	9	2%
Hungary	2	0%
Ireland	3	1%
Italy	122	27%
Latvia	3	1%
Lithuania	0	0%
Luxembourg	1	0%
Malta	1	0%
Netherlands	5	1%
Poland	2	0%
Portugal	17	4%
Romania	1	0%
Slovakia	0	0%
Slovenia	0	0%
Spain	105	23%
Sweden	11	2%
United Kingdom	17	4%
Total EU-27	447	97%
Norway	7	2%
Switzerland	5	1%
Grand Total	459	100%

3a. Please indicate whether your organisation is public or privately owned (presented by size of organisation and Member State)

Organisation Size	No. Public Organisations	No. Private Organisations	% Public	% Private
Micro	7	28	2%	7%
Small	24	82	6%	19%
Medium	27	87	6%	20%
Large	44	130	10%	30%
Total	102	327	24%	76%

Member State	No. Public Organisations	No. Private Organisations	% Public	% Private
Austria	3	13	0.7%	3%
Belgium	8	6	1.9%	1%
Bulgaria	0	0	0.0%	0%
Cyprus	0	2	0.0%	0%
Czech Republic	3	5	0.7%	1%
Denmark	10	14	2.4%	3%
Estonia	0	0	0.0%	0%
Finland	0	3	0.0%	1%
France	0	5	0.0%	1%
Germany	16	49	3.8%	12%
Greece	1	8	0.2%	2%
Hungary	0	2	0.0%	0%
Ireland	1	2	0.2%	0%
Italy	34	81	8.1%	19%
Latvia	2	1	0.5%	0%
Lithuania	0	0	0.0%	0%
Luxembourg	1	0	0.2%	0%
Malta	0	1	0.0%	0%
Netherlands	2	3	0.5%	1%
Poland	0	2	0.0%	0%
Portugal	0	16	0.0%	4%
Romania	1	0	0.2%	0%
Slovakia	0	0	0.0%	0%
Slovenia	0	0	0.0%	0%
Spain	11	86	2.6%	21%
Sweden	5	4	1.2%	1%
United Kingdom	3	14	0.7%	3%
Total EU-27	101	317	24%	76%

Additional Comments:

- Incomplete responses regarding the identification of an organisation's Member State, its size or industry sector (by NACE code) may have affected the results.

3b. Please indicate your organisation's principle area(s) of activity, including NACE code

Sector	Number of Responses	% Responses
Agriculture, forestry and fishing	11	3%
Mining and extraction	0	0%
Food, drink and tobacco	20	5%
Textiles, leather, footwear and clothing	10	3%
Wood and wood products	1	0%
Pulp, paper, and paper products	14	4%
Printing and publishing	12	3%
Oil & fuel	8	2%
Chemicals	41	10%
Rubber and plastics	11	3%
Non-metallic mineral products	5	1%
Basic and fabricated metals	25	6%
Mechanical engineering	15	4%
Electrical and electronic equipment	18	5%
Transport equipment	5	1%
Furniture, recycling and other manufacturing	10	3%
Utilities (gas, electric, water)	25	6%
Construction	13	3%
Motor vehicle and wholesale trade	2	1%
Retail trade and repair	0	0%
Hotels and catering	13	3%
Transport	7	2%
Communications - broadcast	2	1%
Finance, insurance and intermediation	7	2%
Real estate and renting	4	1%
Other business services	20	5%
Health, education, social and pers. services	32	8%
Other services	64	16%
Total	395	100%

Section B: Experience with EMAS

4a. Please indicate whether your organisation is currently EMAS registered. (Presented by size of organisation, and Sector where responses allow)

Organisation Size	Number Currently Registered	%
Micro	32	8%
Small	98	26%
Medium	100	26%
Large	151	40%
Total	381	100%

Sector	Number Registered	%
Agriculture, forestry and fishing	8	2%
Mining and extraction	0	0%
Food, drink and tobacco	17	5%
Textiles, leather, footwear and clothing	7	2%
Wood and wood products	0	0%
Pulp, paper, and paper products	9	3%
Printing and publishing	10	3%
Oil & fuel	5	2%
Chemicals	36	11%
Rubber and plastics	10	3%
Non-metallic mineral products	5	2%
Basic and fabricated metals	19	6%
Mechanical engineering	12	4%
Electrical and electronic equipment	15	5%
Transport equipment	5	2%
Furniture, recycling and other manu.	10	3%
Utilities (gas, electric, water)	22	7%
Construction	11	3%
Motor vehicle and wholesale trade	1	0%
Retail trade and repair	0	0%
Hotels and catering	12	4%
Transport	7	2%
Communications - broadcast	2	1%
Finance, insurance and intermediation	5	2%
Real estate and renting	3	1%
Other business services	17	5%
Health, education, social and pers. services	28	8%
Other services	54	16%
Total	330	100%

Additional Comments:

- 28 respondents to the online questionnaire and a further 6 responses received via email indicated that they are no longer EMAS registered.
- Broken down by Member State of registration, the distribution of responses mirrors that of total response presented previously under Question 3a.

- Although a number of respondents misinterpreted the question, when asked for the number of registrations held by each organisation, responses suggest that around 40-50% of organisations hold multiple EMAS registrations.

4b. Please indicate the year when your organisation was first EMAS registered

Year	Number	%
1993	1	0%
1994	0	0%
1995	5	1%
1996	11	3%
1997	16	4%
1998	22	6%
1999	21	6%
2000	16	4%
2001	21	6%
2002	15	4%
2003	34	9%
2004	34	9%
2005	39	10%
2006	59	16%
2007	39	10%
2008	38	10%
2009	6	2%
Total	376	100%

5. Please indicate which THREE of the following statements best describes your organisation's reasons for becoming EMAS registered

Reason	No. of Responses by Preference*			% Total
	Most important reason	Second most important reason	Third most important reason	
Requirement of customer/ supply chain	36	16	8	6%
Requirement of Shareholders	9	7	6	2%
Industry sector initiative	15	9	10	4%
Prerequisite for funding/ contract	23	10	4	4%
Resource/ production efficiency	74	56	46	19%
Improved reputation	43	65	37	16%
Greener product	12	27	21	6%
Response to competitor	0	7	5	1%

Reason	No. of Responses by Preference*			% Total
	Most important reason	Second most important reason	Third most important reason	
Legislative compliance	27	45	37	12%
Risk management	5	12	14	3%
Management culture	65	54	50	18%
Employee participation	3	13	41	6%
Transparency stakeholders	40	33	37	12%
Streamline applications	5	11	11	3%
Financial support	13	7	14	4%
Technical support	3	3	9	2%
Other	11	3	23	4%
Total Responses	384	378	373	100%

* Preference not always indicated in Word responses to questionnaire, therefore ranking is given by order of response. By taking an overall view of the responses this is not thought to add any bias to the conclusions.

Reasons for becoming EMAS registered (first choice) by organisation size.

Reason	No. of Responses by Most Important Reason and Organisation Size			
	Micro	Small	Medium	Large
Requirement of customer/ supply chain	3	12	14	7
Requirement of Shareholders	1	1	4	3
Industry sector initiative	1	2	4	8
Prerequisite for funding/ contract	3	9	6	5
Resource/ production efficiency	6	19	25	25
Improved reputation	3	9	9	22
Greener product	0	4	4	4
Response to competitor	0	0	0	0

Reason	No. of Responses by Most Important Reason and Organisation Size			
	Micro	Small	Medium	Large
Legislative compliance	0	9	6	12
Risk management	1	1	2	1
Management culture	5	12	17	31
Employee participation	1	1	0	1
Transparency stakeholders	2	9	10	19
Streamline applications	1	0	1	3
Financial support	3	5	3	2
Technical support	1	0	1	1
Other	2	0	0	9
Total Responses	33	93	106	153

Additional Comments:

- Large organisations were more likely to identify improved reputation and increased transparency as first choice reasons for adopting EMAS compared to SMEs.
- Management culture appears to be an important factor for all types of organisation. Its importance appears to increase as a driver for EMAS with the size of the organisation. It also appears to be more important in Belgium, Italy, Spain and the UK as a key driver for EMAS, and in electrical and chemical industry sectors.
- Electrical manufacturing, metal producing, chemicals, utilities and health, education and other service sectors appear to value efficiency savings in production greater than other reasons for adopting EMAS. The other principle reason revealed through the survey for these sectors was the importance of increasing transparency with stakeholders.
- Organisations often involved at the bottom of a supply chain (e.g. chemical and construction organisation) suggest that customer/supply chain pressures are important motivations behind EMAS registration, in addition to management culture.
- Utility responses indicate that providing stakeholder transparency and legislative compliance are key motivators for EMAS registration
- Responses from the public sector indicate that registering with EMAS provides a positive example to other organisations of how to manage environmental issues, which is the main reason for adopting EMAS.
- Improving an organisation's reputation appears more significant in Italy and Spain than elsewhere as an EMAS motivator. Similarly, supply chain and customer requirements appear to be more significant drivers in the UK, Austria, Denmark and Germany.
- Across all Member States the leading motivator for EMAS registration appears to be efficiency and resource savings in production.

- When we asked what the second most important reason for adopting EMAS was, increasing numbers of small organisations responded that improving reputation was important.

Other Reasons Given:

- To protect and improve the local environment.
- To promote environmental responsibility as one of the main political aims of local government.
- Legal obligation for local authorities or requirement of federal government.
- Safeguarding future of existing site.

6. Was the consistency of EMAS with legislation in your principle Member State an important reason for your decision to adopt it? (Presented by size of organisation, and sector where responses allow)

Organisation Size	Responded Yes	Responded No
Micro	2%	7%
Small	7%	17%
Medium	9%	19%
Large	14%	26%
Total Responses	388	

Sector	Yes	No
Agriculture, forestry and fishing	3	7
Mining and extraction	0	0
Food, drink and tobacco	8	10
Textiles, leather, footwear and clothing	4	5
Wood and wood products	0	0
Pulp, paper, and paper products	1	9
Printing and publishing	2	8
Oil & fuel	3	7
Chemicals	13	24
Rubber and plastics	4	7
Non-metallic mineral products	0	5
Basic and fabricated metals	4	16
Mechanical engineering	4	7
Electrical and electronic equipment	0	11
Transport equipment	1	4
Furniture, recycling and other manu.	1	8
Utilities (gas, electric, water)	5	18
Construction	3	8
Motor vehicle and wholesale trade	1	1
Retail trade and repair	0	0
Hotels and catering	5	8
Transport	3	4
Communications - broadcast	1	1
Finance, insurance and intermediation	1	4
Real estate and renting	2	1
Other business services	4	13
Health, education, social and pers. services	12	15
Other services	19	35
Total	104	236

Additional Comments:

- As is the case by industry sector, responses by Member State indicate that consistency with legislation is not an important reason for EMAS adoption by a significant margin for most Member States. The exception is Germany where the difference in negative and positive responses to this question was very small given that over 60 responses were received to this question.

Reasons given for legislative consistency as a motivation for EMAS registration:

- Organisations wish to be legally compliant. Consequently many responses indicated that EMAS was one of the best ways to help ensure compliance with legal requirements.
- Organisation needs to produce Green annual account
- Provides greater assurance of legal compliance than ISO 14001
- Legislation in principle Member State is highly restrictive, EMAS provides an instrument to manage legislative requirements and prove compliance

- Expectation of less legislative requirements
- National environmental goals are easier to implement when organisation follows ISO 14001 and EMAS, plus added transparency with an environmental report
- Cost savings on legal procedures
- Contributes to aim of sustainable environmental development
- EMAS a valuable information tool to public, customers, authorities and employees

7. ***Did your organisation implement an Environment Management System prior to EMAS?***

Organisation Size	Number Yes	Number No	% Yes	% No
Micro	11	21	3%	5%
Small	47	49	12%	13%
Medium	50	59	13%	15%
Large	98	57	25%	15%
Total Responses	206	186	53%	47%

Sector	Number Yes	Number No
Agriculture, forestry and fishing	7	2
Mining and extraction	0	0
Food, drink and tobacco	8	9
Textiles, leather, footwear and clothing	6	3
Wood and wood products	0	0
Pulp, paper, and paper products	7	4
Printing and publishing	3	8
Oil & fuel	7	2
Chemicals	27	10
Rubber and plastics	4	7
Non-metallic mineral products	3	2
Basic and fabricated metals	13	9
Mechanical engineering	5	6
Electrical and electronic equipment	9	6
Transport equipment	3	2
Furniture, recycling and other manu.	4	5
Utilities (gas, electric, water)	8	14
Construction	7	3
Motor vehicle and wholesale trade	1	1
Retail trade and repair	0	0
Hotels and catering	5	8
Transport	6	1
Communications - broadcast	2	0
Finance, insurance and intermediation	1	4
Real estate and renting	2	2
Other business services	4	13
Health, education, social and pers. services	12	16
Other services	24	32
Total	178	169

Additional Comments:

- In most cases, ISO 14001 was the preferred EMS system prior to EMAS (see following responses to Q8). However, a few organisations did highlight that they operated internal EMS systems prior to adopting EMAS.
- Those Member States where the majority indicated that they implemented an EMS prior to EMAS included Italy, Netherlands, Portugal, Spain and the UK. However, in Austria, Denmark, Germany and Greece a clear negative general response was observed in the sample.

8. *Is your organisation also certified to ISO 14001?*

Organisation Size	Number Yes	Number No	% Yes	% No
Micro	24	9	6%	2%
Small	84	15	21%	4%
Medium	98	13	25%	3%
Large	139	18	35%	5%
Total	345	55	86%	14%

Sector	Number Yes	Number No
Agriculture, forestry and fishing	8	2
Mining and extraction	0	0
Food, drink and tobacco	17	1
Textiles, leather, footwear and clothing	9	0
Wood and wood products	0	0
Pulp, paper, and paper products	10	1
Printing and publishing	9	2
Oil & fuel	8	2
Chemicals	35	2
Rubber and plastics	9	2
Non-metallic mineral products	5	0
Basic and fabricated metals	21	1
Mechanical engineering	12	0
Electrical and electronic equipment	0	3
Transport equipment	4	1
Furniture, recycling and other manu.	8	1
Utilities (gas, electric, water)	21	2
Construction	11	0
Motor vehicle and wholesale trade	2	0
Retail trade and repair	0	0
Hotels and catering	10	3
Transport	7	0
Communications - broadcast	2	0
Finance, insurance and intermediation	4	1
Real estate and renting	4	0
Other business services	12	5
Health, education, social and pers. services	19	9
Other services	43	14
Total	290	52

Other reasons for seeking EMAS as well as ISO 14001 registrations:

- Because EMAS also requires the “Environmental Statement”
- To increase transparency with stakeholders
- Believe in the authorities promise of reduction in bureaucracy by implementation of EMAS
- EMAS has a higher reputation among EU Member States and our main export fields are in the EU countries
- Verification
- Worldwide standard / international recognition
- More obligation and environmental responsibility than ISO 14001
- No other company registered in our sector (i.e. strategic decision)
- To be in compliance with requirement of national Act for public projects (currently N.137/2006 Coll.§§135,136) and be able to compete for public projects in building industry – Czech Republic. As has been advantage in some competitions within the Czech Republic as only 35 organisations have EMAS registration
- Public body desire to communicate environmental performance to the public
- Improve reputation with customers and public authorities, also compared to rivals
- Internal management approach
- Want to go a step further / improve env performance / importance of environment within organisation
- Requirement from client
- EMAS more adapted to needs than ISO 14001, deemed inflexible
- EMAS first, ISO 14001 later for world market
- Requisite for public funding, subsidises and grants
- Registration for new production lines is faster when you are EMAS registered
- EMAS a European regulation, better for our customers
- EMAS better for public authorities
- Reduced value of ISO 14001 as everyone has it
- Financial support from government
- Still expecting advantages in regulation by authorities and administrative performance
- Part of dialogue with neighbours and interested third parties
- A better management for gas, liquids and solid wastes, plus increasing internal and external communication (resulted in EMAS award - important to many stakeholders)

9. *Does your organisation consider EMAS to be a requirement of management best practice?*

Organisation Size	Number Yes	Number No	% Yes	% No
Micro	20	13	5%	3%
Small	66	29	17%	7%
Medium	68	39	17%	10%
Large	91	64	23%	16%
Total	245	145	63%	37%

Sector	Number Yes	Number No
Agriculture, forestry and fishing	5	4
Mining and extraction	0	0
Food, drink and tobacco	13	5
Textiles, leather, footwear and clothing	6	3
Wood and wood products	0	0
Pulp, paper, and paper products	4	7
Printing and publishing	7	3
Oil & fuel	5	4
Chemicals	19	19
Rubber and plastics	7	4
Non-metallic mineral products	2	3
Basic and fabricated metals	10	10
Mechanical engineering	9	2
Electrical and electronic equipment	0	4
Transport equipment	3	2
Furniture, recycling and other manu.	8	1
Utilities (gas, electric, water)	16	7
Construction	5	5
Motor vehicle and wholesale trade	0	2
Retail trade and repair	0	0
Hotels and catering	7	6
Transport	4	3
Communications - broadcast	2	0
Finance, insurance and intermediation	4	1
Real estate and renting	2	2
Other business services	10	7
Health, education, social and pers. services	19	8
Other services	36	18
Total	203	130

Additional Comments:

- With the exception of Germany, Denmark, Finland and the Netherlands, the majority of responses in each Member State consider EMAS to be a requirement of best practice.

Comments on why EMAS is considered as a requirement of management best practice:

- Public communication issue, as EMAS is stricter than ISO 14001
- Improves internal environment organisation, risk management and cost management
- Organisation is seen as a complete entity, instead of a union of parts
- Excellence tag for organisations, EMAS tool for excellence
- Aware of environmental impact of industry and believe EMAS is the best practice to reduce it.
- All systems help, EMAS is one of them
- EMAS encourages management improvements and continuous improvement process

- EMAS provides the internal motivation to develop interesting targets and fulfilment of the aims, as deviations from target have to be explained (not the case in ISO 14001)
- More organisation, more control
- With EMAS registration, organisation enjoys considerably lower liability risk because we are actively engaged in making sure that we meet the legal standards and we have official certification to prove it.
- Issues central to organisation activity
- Helps structure work and reporting system, because they had no other management system prior to EMAS
- Allows easy integration with other management systems, like QMS or HSMS, thus becoming a fully applicable management tool

Section C: Reasons for Withdrawing from EMAS

10. *Please score your organisation's reason(s) for withdrawing from EMAS using a score of between 1 (great importance) and 5 (no importance)?*

Reason for Withdrawal	Number Scoring Each Reason as ...		
	Scores 1 or 2	Score 3	Scores 4 or 5
Cost of registration	9	5	19
Costs of implementation	10	13	11
Benefit unclear / insufficient	24	6	4
Regulatory pressures	5	5	19
Lack of Member State incentives	12	5	13
Internal management preference / culture	13	10	8
Other environmental standard preferred	16	3	9
Other	5	2	5

Other reasons given for withdrawing from EMAS:

- Organisation already has ISO 14001 EMS certification
- No longer supply customer who required EMAS registration
- Too aggressive regime of control, being a voluntary system
- ISO 14001 more often requested by customers and mentioned as BAT in IPPC legislation
- Lack of internal capacity to support the process
- Hardly no one has asked for the environmental report, hence time and cost produce and audit not worthwhile. Have continued to publish report, but no longer audited
- Internal company management decision

11. *What factors might encourage your organisation to register with EMAS again? Please rank the factors (with 1 as the most important)*

Incentive	Number Scoring Each Incentive as...		
	Scores 1 or 2	Score 3	Scores 4 or 5
Reduced fees for registration	12	8	11
Help with implementation	10	5	15
Customer requirements	27	3	2
Reduced regulatory requirements	20	4	7
Competitor registration	10	10	9
Other	2	3	4
Total Responses	81	33	48

Other factors to encourage registration:

- A new intelligent approach, not dubitative, not interrogative, not inspective, but cooperative and heuristic
- Relief of approval procedures
- National or European financial support for participation

Section D: Benefits and Costs of EMAS

12. *What has been the most positive impact on your organisation of adopting EMAS? Please score the impacts using a score between 1 (greatest impact) and 5 (no impact)*

Impact Category	% Scoring Each Impact Category AS ...		
	Score 1 or 2	Scores 3	Scores 4 or 5
Energy & Resource Saving	21%	15%	7%
Financial Saving	9%	14%	17%
Improved Stakeholder Relationships	17%	14%	11%
Improved Staff Recruitment / Retention	8%	15%	18%
Increased Market Opportunities	12%	12%	17%
Productivity Improvement	11%	16%	14%
Reduction in Negative Incidents	18%	12%	11%
Other	3%	3%	4%

Impact Category	% of Respondents Scoring Each impact as 1 (Greatest Impact) by Organisation Size			
	Micro	Small	Medium	Large
Energy & Resource Saving	21%	23%	24%	19%
Financial Saving	6%	9%	9%	10%
Improved Stakeholder Relationships	21%	16%	15%	19%
Improved Staff Recruitment / Retention	13%	10%	8%	7%
Increased Market Opportunities	15%	13%	11%	11%
Productivity Improvement	4%	11%	10%	12%
Reduction in Negative Incidents	17%	17%	19%	18%
Other	2%	2%	4%	4%
Total Responses	47	186	197	342

Additional Comments:

- Energy and resource savings identified as the greatest benefit for most industry sectors responding. Interesting variations in response include chemicals, utilities and public authorities who all identified improved stakeholder relations as an important benefit. Agricultural, textile, chemicals, rubber and plastics, electrical, other manufacturing and other business services in contrast identified reductions in negatives incidents as an important benefit.
- Responses indicate that improved stakeholder relationships are viewed as more important benefits in Italy and Germany than in other Member States. Similarly, reductions in negative incidences are viewed more positively in Spain, Italy, Austria, Ireland and Greece than elsewhere.

Other impacts identified in responses include:

- Better knowledge of environmental legal environmental requirement
- Employee awareness and positive company culture impact
- Being an example to other organisations
- Improved safety in the workplace, streamlining of administrative procedures and greater protection of natural resources
- Regarding marketing, organisation does not believe they sell more due to EMAS, but may lose markets if they have no HSE-management and competitors do have one, therefore EMAS saves markets
- Waste management and cost reduction through improved control of maintenance suppliers
- Image to client
- Shows leaks in management system and locates workflow malfunctions in core business. Affords improvements and innovations.
- Time savings at some production processes

- Improves the environmental management performance on board our vessels and increase personnel motivation
- Our customers believe in us. Better environment to the children, Better environment for our employees
- Subsidy

13. How has your organisation's relationship with customers, consumers and stakeholders changed since registering with EMAS?

Stakeholder Group	% Responses indicating ...				Total Responses
	No Change	Noticeable Improvement	Significant Improvement	Major Improvement	
Local Stakeholders	39%	39%	17%	5%	311
General Public and Consumers	35%	44%	18%	3%	311
Customers	33%	39%	24%	4%	304
Investors	59%	29%	11%	1%	295
Staff	18%	38%	38%	6%	310
Public Authorities	17%	32%	37%	14%	308
Other	75%	13%	8%	4%	53

Stakeholder Group	Number of Responses by Organisation Size				
	Organisation Size	No Change	Noticeable Improvement	Significant Improvement	Major Improvement
Local Stakeholders	Micro	14	11	0	2
	Small	28	28	11	5
	Medium	40	31	13	1
	Large	40	50	28	9
General Public and Consumers	Micro	7	12	8	0
	Small	23	35	12	2
	Medium	33	37	12	2
	Large	45	54	25	4
Customers	Micro	9	8	5	3
	Small	26	28	19	0
	Medium	24	35	19	5
	Large	40	49	30	4
Investors	Micro	13	10	2	2
	Small	41	21	6	1
	Medium	50	19	10	1
	Large	70	36	13	0
Staff	Micro	6	7	9	5
	Small	11	31	29	2
	Medium	19	30	32	4
	Large	19	50	49	7
Public Authorities	Micro	5	7	7	8
	Small	14	22	29	8
	Medium	18	26	30	8

Stakeholder Group	Number of Responses by Organisation Size				
	Organisation Size	No Change	Noticeable Improvement	Significant Improvement	Major Improvement
	Large	15	43	48	20

Additional Comments:

- Improvements in local stakeholder relationships are particularly apparent in responses from chemicals, metals, electronics, utilities, health, education and other service sectors. More organisations from Italy and German all identified that improvements had taken place due to EMAS compared to other Member States.
- Electrical, utilities and public service sectors were more likely to observe improvements in relationships with the general public and consumers compared to other sectors. Little difference was observed between Member States.
- Responses indicating that customer and supply chain relationships were improved due to EMAS were broadly identified in manufacturing sectors and in Denmark, Germany, Italy, Portugal and Spain.
- Improved relations with staff was identified as a benefit by food and drink, printing and publishing, chemicals, hotels and catering, real estate and renting, other business services, health, education, social care and other service sectors.
- Regarding relations with public authorities, these were reported as improving for almost all manufacturing sectors and broadly across all Member States.

14. *Has EMAS participation reduced the number of negative incidents (including environmental inspections, monitoring or number of accidents on site)? If so, please can you quantify the average scale of this reduction per year?*

Negative Incident	% Responses indicating ...				Total Responses
	No Change	Noticeable Improvement	Significant Improvement	Major Improvement	
Environmental Breaches	48%	35%	13%	4%	296
Worker Accidents	55%	30%	12%	4%	300
Monitoring Legislative Compliance	48%	26%	21%	5%	298
External Inspection	61%	24%	13%	2%	299
Internal Inspection	64%	25%	11%	1%	298
Non-Conformity	50%	32%	16%	2%	303
Local Stakeholder Complaints	60%	27%	13%	1%	294
Other	92%	4%	2%	2%	48

Reduction in...	Number of Responses by Organisation Size				
	Organisation Size	No Change	Noticeable Improvement	Significant Improvement	Major Improvement
Environmental Breaches	Micro	15	6	4	0
	Small	37	22	9	2
	Medium	39	30	12	1
	Large	52	45	13	9
Accidents	Micro	15	6	3	1
	Small	44	17	7	4
	Medium	46	31	5	2
	Large	60	35	20	4
Monitoring Legislative Compliance	Micro	13	4	7	1
	Small	30	18	17	6
	Medium	42	22	15	2
	Large	59	33	24	5
External Inspection	Micro	18	5	2	0
	Small	40	17	13	2
	Medium	51	24	5	2
	Large	73	25	19	3
Internal Inspection	Micro	16	5	3	1
	Small	42	20	10	0
	Medium	52	18	10	1
	Large	80	31	9	0
Non-Conformity	Micro	13	6	6	0
	Small	29	31	10	2
	Medium	46	26	11	1
	Large	63	35	21	3
Local Stakeholder Complaints	Micro	17	4	2	1
	Small	40	19	10	1
	Medium	53	21	7	1
	Large	66	34	18	0

Additional Comments:

- Zero accident philosophy has been made realistic
- Very high synergy with OHS 18001 in employee and health protection and reduction of accidents
- Internal inspections/control raised significantly to prove compliance

15. *Has your organisation made financial savings by adopting EMAS?*

Financial Benefit	No. Responses	% Responses
Efficient Production	42	9%
Reduced Energy Use	150	32%
Efficient Resource	134	29%
Reduced Taxes	23	5%
Reduced Insurance Premiums	27	6%
Legal Cost Savings	41	9%
Access to Grants/ Funding	46	10%
Other	0	0%
Total Responses	463	100%

Financial Benefit	% Responses by Organisation Size	
	Micro, Small and Medium	Large
Efficient Production	8%	10%
Reduced Energy Use	34%	30%
Efficient Resource	29%	29%
Reduced Taxes	5%	5%
Reduced Insurance Premiums	5%	6%
Legal Cost Savings	6%	12%
Access to Grants/ Funding	13%	6%
Other	0%	0%
Total Responses	187	160

Sector	Responses by Sector							
	Efficient Production	Reduced Energy Use	Efficient Resource	Reduced Taxes	Reduced Insurance Premiums	Legal Cost Savings	Access to Grants/ Funding	Other
Agriculture, forestry and fishing	2	3	2	1	0	2	2	0
Mining and extraction	0	0	0	0	0	0	0	0
Food, drink and tobacco	3	9	10	2	1	1	3	0
Textiles, leather, footwear and clothing	0	3	3	0	1	0	2	0
Wood and wood products	0	0	0	0	0	0	0	0
Pulp, paper, and paper products	0	3	1	0	0	1	0	0
Printing and publishing	3	3	3	0	1	0	1	0
Oil & fuel	1	1	1	0	2	2	0	0

Sector	Responses by Sector							
	Efficient Production	Reduced Energy Use	Efficient Resource	Reduced Taxes	Reduced Insurance Premiums	Legal Cost Savings	Access to Grants/Funding	Other
Chemicals	6	13	15	3	5	8	3	0
Rubber and plastics	0	6	5	0	1	1	1	0
Non-metallic mineral products	0	1	1	0	0	1	0	0
Basic and fabricated metals	2	7	8	4	2	2	4	0
Mechanical engineering	0	4	4	1	0	2	0	0
Electrical and electronic equipment	7	10	7	1	0	3	2	0
Transport equipment	1	3	3	0	0	2	0	0
Furniture, recycling and other manu.	0	2	4	1	2	1	1	0
Utilities (gas, electric, water)	4	6	10	2	3	4	1	0
Construction	1	4	4	0	0	1	0	0
Motor vehicle and wholesale trade	0	1	1	0	0	0	0	0
Retail trade and repair	0	0	0	0	0	0	0	0
Hotels and catering	4	7	5	0	0	0	3	0
Transport	0	2	1	0	1	1	0	0
Communications - broadcast	1	2	0	0	0	0	0	0
Finance, insurance and intermediation	0	4	2	0	0	0	0	0
Real estate and renting	0	3	3	1	0	0	1	0
Other business services	0	5	7	1	1	0	2	0
Health, education, social and pers.services	2	15	7	0	1	2	5	0
Other services	2	16	14	2	2	0	8	0
Total	39	133	121	19	23	34	39	0

Detailed estimates provided by consultees of the quantitative financial benefits are presented in the costs and benefits assessment in Chapter 4.

16. *Has EMAS registration assisted your organisation to qualify for new opportunities in the public sector or has EMAS assisted your organisation compete more successfully for new contracts.*

	Number Responding Yes*	Number Responding No
Additional Contracts Won	205	15
Access to Public Procurement	1	47
Contract Bids More Successful	3	14
Total	209	76

Number Responding Positively By Sector			
Sector	Additional Contracts Won	Access to Public Procurement	Contract Bids More Successful
Agriculture, forestry and fishing	9	0	0
Mining and extraction	0	0	0
Food, drink and tobacco	14	0	0
Textiles, leather, footwear and clothing	5	0	0
Wood and wood products	0	0	0
Pulp, paper, and paper products	6	0	0
Printing and publishing	2	0	0
Oil & fuel	3	0	0
Chemicals	22	0	0
Rubber and plastics	6	0	0
Non-metallic mineral products	5	0	0
Basic and fabricated metals	12	0	0
Mechanical engineering	4	0	0
Electrical and electronic equipment	11	0	2
Transport equipment	3	0	0
Furniture, recycling and other manu.	4	0	0
Utilities (gas, electric, water)	13	0	0
Construction	5	0	0
Motor vehicle and wholesale trade	1	0	0
Retail trade and repair	0	0	0
Hotels and catering	7	0	0
Transport	3	0	0
Communications - broadcast	2	0	0
Finance, insurance and intermediation	3	0	0
Real estate and renting	0	0	0
Other business services	8	1	1
Health, education, social and pers.services	13	0	0
Other services	21	0	0
Total	182	1	3

17. *Has EMAS registration had benefits for your general management systems?*

By Number	Yes	No
Micro	22	5
Small	58	10
Medium	60	26
Large	94	27
Total	234	68

Number By Sector		
Sector	Yes	No
Agriculture, forestry and fishing	8	1
Mining and extraction	0	0
Food, drink and tobacco	12	4
Textiles, leather, footwear and clothing	4	2
Wood and wood products	0	0
Pulp, paper, and paper products	5	3
Printing and publishing	4	1
Oil & fuel	5	0
Chemicals	19	11
Rubber and plastics	4	4
Non-metallic mineral products	3	2
Basic and fabricated metals	11	4
Mechanical engineering	7	1
Electrical and electronic equipment	12	3
Transport equipment	4	1
Furniture, recycling and other manu.	7	1
Utilities (gas, electric, water)	13	5
Construction	5	3
Motor vehicle and wholesale trade	0	1
Retail trade and repair	0	0
Hotels and catering	8	0
Transport	5	0
Communications - broadcast	1	1
Finance, insurance and intermediation	2	2
Real estate and renting	3	0
Other business services	13	3
Health, education, social and pers.services	15	4
Other services	38	3
Total	208	60

Number By Member State		
Member State	Yes	No
Austria	7	4
Belgium	10	1
Bulgaria	0	0
Cyprus	2	0
Czech Republic	5	1

Denmark	9	8
Estonia	0	0
Finland	2	1
France	2	0
Germany	32	18
Greece	6	2
Hungary	1	0
Ireland	3	0
Italy	66	10
Latvia	2	1
Lithuania	0	0
Luxembourg	1	0
Malta	1	0
Netherlands	3	2
Poland	0	1
Portugal	8	1
Romania	1	0
Slovakia	0	0
Slovenia	0	0
Spain	52	12
Sweden	3	3
United Kingdom	11	1
Total	227	66

Benefits and problems for general management systems resulting from EMAS implementation, highlighted by respondents included:

Benefits:

- Improved focus through carbon accounting
- Continuous improvement in environmental aspects & improve reputation compared to competitors
- Best control of legal requirements
- More confidence in authorities
- General management system is more complete and rational
- Environmental Statement is now brochure for describing company and environmental responsibilities (self marketing)
- Better daily management and strategic planning
- Improved system of documentation
- One integrated system with quality, safety and health
- TQM systems. Helps and completes implementation of ISO 9001 & 22000
- EMS has become easier due to clearly defined guidelines
- Contributes to development of a sustainable development strategy within company and encourages employee involvement/awareness.
- Replaces separate legal compliance auditing, EMAS statement used for creating CSR report

Only one respondent highlighted problems for general management systems caused by EMAS.

- Difficult to implement EMAS in a very small company.

18. Please indicate the one-off staff costs to your organisation of first implementing EMAS, (based on an estimate of the person-days required within your organisation or provided by and external consultant).

Person Days	External Consultancy	EMAS Registration Task ...				Internal Staff Training	Attaching EMAS Logo	Modifications to IT Systems	Publication of Statement
		Environmental Review	EMS Development	Internal Audit	Preparation of Statement				
<1 Day	35%	21%	21%	24%	20%	22%	69%	50%	32%
1-2 Days	15%	19%	16%	25%	20%	20%	21%	27%	28%
3-5 Days	9%	17%	10%	17%	18%	18%	6%	12%	21%
6-10 Days	12%	12%	14%	13%	12%	13%	2%	4%	9%
11-15 Days	8%	8%	7%	6%	9%	6%	0%	2%	3%
16-20 Days	3%	5%	6%	5%	6%	5%	0%	1%	3%
21+ Days	18%	18%	26%	11%	14%	16%	1%	4%	4%
Total Responses	273	276	269	276	266	278	252	242	268

Variation in person days spent by different organisations is presented in the following Tables in relation to the time used by each identified cost category by size of organisation and sector. Further analysis of the costs incurred by each type of organisation is presented in chapter 4.

External Consultants

Person-Days	% Responses by Organisation Size on External Consultants Person-Days			
	Micro	Small	Medium	Large
<1 Day	50%	36%	38%	29%
1-2 Days	13%	16%	16%	13%
3-5 Days	8%	7%	9%	10%
6-10 Days	21%	13%	9%	11%
11-15 Days	0%	9%	10%	7%
16-20 Days	4%	4%	1%	4%
21+ Days	4%	13%	17%	26%
Total Responses	24	67	77	105

Responses on External Consultancy Person Days by Sector							
Sector	<1 Day	1-2 Days	3-5 Days	6-10 Days	11-15 Days	16-20 Days	21+ Days
Agriculture, forestry and fishing	3	0	0	2	0	1	2
Mining and extraction	0	0	0	0	0	0	0
Food, drink and tobacco	7	2	2	1	0	0	2
Textiles, leather, footwear and clothing	4	2	1	0	0	0	0
Wood and wood products	0	0	0	0	0	0	0
Pulp, paper, and paper products	3	1	0	0	1	0	1
Printing and publishing	3	0	0	0	1	0	0
Oil & fuel	1	0	0	1	1	0	1
Chemicals	8	6	1	2	3	1	3
Rubber and plastics	2	0	0	3	0	0	1
Non-metallic mineral products	2	0	1	0	1	0	0
Basic and fabricated metals	4	3	0	0	1	1	3
Mechanical engineering	4	1	0	1	0	0	1
Electrical and electronic equipment	4	2	0	3	0	0	2
Transport equipment	1	0	0	1	2	0	1
Furniture, recycling and other manu.	2	0	2	2	0	0	1
Utilities (gas, electric, water)	2	3	2	2	3	0	4
Construction	2	1	1	3	0	0	1
Motor vehicle and wholesale trade	0	1	0	0	0	0	0
Retail trade and repair	0	0	0	0	0	0	0
Hotels and catering	4	3	0	0	2	0	0
Transport	2	1	2	0	0	0	1
Communications - broadcast	1	0	0	0	0	0	0
Finance, insurance and intermediation	0	0	1	0	0	0	3
Real estate and renting	1	0	1	0	0	0	1
Other business services	6	3	1	2	1	0	1
Health, education, social and pers.services	8	1	2	3	0	2	4
Other services	10	5	3	3	3	1	12
Total Responses	84	35	20	29	19	6	45

Environmental Review

Person-Days	% Responses by Organisation Size on Environmental Review Person-Days			
	Micro	Small	Medium	Large
<1 Day	19%	30%	26%	25%
1-2 Days	9%	36%	28%	26%
3-5 Days	17%	13%	30%	39%
6-10 Days	0%	12%	27%	61%
11-15 Days	0%	33%	38%	29%
16-20 Days	0%	20%	27%	53%
21+ Days	2%	18%	20%	61%

Total Responses				
------------------------	--	--	--	--

Responses on Environmental Review Person Days by Sector							
Sector	<1 Day	1-2 Days	3-5 Days	6-10 Days	11-15 Days	16-20 Days	21+ Days
Agriculture, forestry and fishing	2	3	0	0	1	0	1
Mining and extraction	0	0	0	0	0	0	0
Food, drink and tobacco	4	3	2	2	0	2	3
Textiles, leather, footwear and clothing	2	3	1	0	0	0	1
Wood and wood products	0	0	0	0	0	0	0
Pulp, paper, and paper products	3	0	0	1	0	0	2
Printing and publishing	1	1	3	0	0	0	0
Oil & fuel	1	0	0	2	0	0	1
Chemicals	5	4	6	4	1	3	3
Rubber and plastics	0	1	3	1	0	1	0
Non-metallic mineral products	2	1	1	0	0	0	1
Basic and fabricated metals	1	4	4	2	1	0	1
Mechanical engineering	3	2	2	1	0	0	0
Electrical and electronic equipment	4	3	0	0	2	1	2
Transport equipment	0	0	3	0	0	0	2
Furniture, recycling and other manu.	1	4	0	2	0	0	0
Utilities (gas, electric, water)	2	2	1	2	2	2	3
Construction	1	0	1	2	2	0	2
Motor vehicle and wholesale trade	0	0	0	0	1	0	0
Retail trade and repair	0	0	0	0	0	0	0
Hotels and catering	2	3	1	0	2	0	0
Transport	0	3	0	0	0	1	2
Communications - broadcast	1	0	0	0	1	0	0
Finance, insurance and intermediation	1	0	1	0	0	2	0
Real estate and renting	0	0	0	1	0	0	1
Other business services	5	4	3	1	1	0	2
Health, education, social and pers.services	5	2	5	2	2	0	3
Other services	9	5	5	3	3	1	10
Total Responses	55	48	42	26	19	13	40

EMS Development

Person-Days	% Responses by Organisation Size on EMS Development Person-Days			
	Micro	Small	Medium	Large
<1 Day	21%	28%	28%	23%
1-2 Days	5%	33%	31%	31%
3-5 Days	15%	22%	22%	41%
6-10 Days	5%	19%	27%	49%
11-15 Days	5%	32%	26%	37%
16-20 Days	13%	13%	38%	38%

21+ Days	1%	17%	24%	58%
Total Responses	24	63	73	109

Responses on EMS Development Person Days by Sector							
Sector	<1 Day	1-2 Days	3-5 Days	6-10 Days	11-15 Days	16-20 Days	21+ Days
Agriculture, forestry and fishing	2	2	0	0	0	0	3
Mining and extraction	0	0	0	0	0	0	0
Food, drink and tobacco	5	0	1	2	1	4	2
Textiles, leather, footwear and clothing	2	2	1	0	0	0	1
Wood and wood products	0	0	0	0	0	0	0
Pulp, paper, and paper products	3	0	1	0	0	0	2
Printing and publishing	1	1	1	0	0	0	1
Oil & fuel	1	0	0	2	0	0	1
Chemicals	6	4	5	4	1	4	3
Rubber and plastics	0	2	0	1	1	0	2
Non-metallic mineral products	2	1	1	0	0	0	1
Basic and fabricated metals	1	4	1	3	0	0	3
Mechanical engineering	2	3	2	0	0	0	1
Electrical and electronic equipment	5	2	0	1	1	0	3
Transport equipment	0	0	2	0	1	0	1
Furniture, recycling and other manu.	1	2	1	0	1	0	2
Utilities (gas, electric, water)	2	1	0	2	1	3	5
Construction	0	0	2	0	0	0	4
Motor vehicle and wholesale trade	0	0	0	0	0	0	1
Retail trade and repair	0	0	0	0	0	0	0
Hotels and catering	1	4	1	1	1	0	0
Transport	1	1	0	2	0	1	1
Communications - broadcast	1	0	0	0	0	0	0
Finance, insurance and intermediation	0	0	0	0	0	1	3
Real estate and renting	0	0	0	1	0	0	1
Other business services	5	4	1	2	1	1	2
Health, education, social and pers.services	4	2	2	4	3	0	3
Other services	9	3	4	3	5	1	12
Total Responses	54	38	26	28	17	15	58

Internal Audit

Person-Days	% Responses by Organisation Size on Internal Audit Person-Days			
	Micro	Small	Medium	Large
<1 Day	23%	34%	25%	18%
1-2 Days	10%	29%	26%	34%
3-5 Days	2%	13%	46%	39%
6-10 Days	0%	24%	30%	46%
11-15 Days	0%	6%	13%	81%
16-20 Days	7%	13%	27%	53%
21+ Days	0%	14%	21%	66%
Total Responses	24	64	78	110

Responses on Internal Audit Person Days by Sector							
Sector	<1 Day	1-2 Days	3-5 Days	6-10 Days	11-15 Days	16-20 Days	21+ Days
Agriculture, forestry and fishing	1	4	0	0	0	0	2
Mining and extraction	0	0	0	0	0	0	0
Food, drink and tobacco	3	3	4	2	0	2	1
Textiles, leather, footwear and clothing	2	2	0	2	1	0	0
Wood and wood products	0	0	0	0	0	0	0
Pulp, paper, and paper products	2	0	1	2	0	0	0
Printing and publishing	1	3	0	1	0	0	0
Oil & fuel	1	0	1	1	0	0	1
Chemicals	5	7	5	1	2	2	2
Rubber and plastics	2	1	1	2	0	0	0
Non-metallic mineral products	2	1	0	1	0	0	0
Basic and fabricated metals	3	3	5	1	0	0	2
Mechanical engineering	4	1	2	1	0	0	0
Electrical and electronic equipment	5	2	1	1	1	1	1
Transport equipment	0	1	1	0	1	1	1
Furniture, recycling and other manu.	2	4	0	0	1	0	0
Utilities (gas, electric, water)	5	0	4	2	3	0	2
Construction	1	1	1	3	0	0	2
Motor vehicle and wholesale trade	0	0	0	1	0	0	0
Retail trade and repair	0	0	0	0	0	0	0
Hotels and catering	2	6	0	0	0	1	0
Transport	1	2	1	0	0	1	1
Communications - broadcast	1	0	0	0	0	0	0
Finance, insurance and intermediation	1	1	1	1	0	0	0
Real estate and renting	1	0	0	0	0	0	2
Other business services	5	4	3	0	1	2	0
Health, education, social and pers.services	5	4	2	4	0	2	1
Other services	8	10	8	7	1	0	4
Total Responses	63	60	41	33	11	12	22

Preparation of Statement

Person-Days	% Responses by Organisation Size on Preparation of Statement Person-Days			
	Micro	Small	Medium	Large
<1 Day	24%	30%	35%	11%
1-2 Days	9%	25%	26%	40%
3-5 Days	8%	22%	27%	43%
6-10 Days	6%	19%	31%	44%
11-15 Days	4%	17%	21%	58%
16-20 Days	0%	29%	18%	53%
21+ Days	0%	16%	22%	62%
Total Responses	25	61	72	108

Responses on Preparation of Statement Person Days by Sector							
Sector	<1 Day	1-2 Days	3-5 Days	6-10 Days	11-15 Days	16-20 Days	21+ Days
Agriculture, forestry and fishing	2	2	1	0	0	1	1
Mining and extraction	0	0	0	0	0	0	0
Food, drink and tobacco	3	2	3	2	2	2	0
Textiles, leather, footwear and clothing	2	1	1	0	0	0	2
Wood and wood products	0	0	0	0	0	0	0
Pulp, paper, and paper products	2	0	2	1	0	0	0
Printing and publishing	1	1	2	1	0	0	0
Oil & fuel	0	1	0	0	1	0	1
Chemicals	3	7	3	2	3	2	5
Rubber and plastics	0	2	3	1	0	0	0
Non-metallic mineral products	3	0	0	1	0	0	1
Basic and fabricated metals	3	3	2	2	3	0	1
Mechanical engineering	3	1	2	1	1	0	0
Electrical and electronic equipment	4	2	1	1	0	0	3
Transport equipment	0	0	2	1	0	0	2
Furniture, recycling and other manu.	1	3	1	1	0	1	0
Utilities (gas, electric, water)	1	2	3	4	1	1	1
Construction	2	0	2	1	0	1	2
Motor vehicle and wholesale trade	0	0	0	0	0	1	0
Retail trade and repair	0	0	0	0	0	0	0
Hotels and catering	2	3	1	0	1	0	0
Transport	0	3	0	1	0	1	1
Communications - broadcast	1	0	0	0	1	0	0
Finance, insurance and intermediation	0	0	1	0	0	1	2
Real estate and renting	0	0	1	1	0	0	0
Other business services	4	4	2	2	2	1	0
Health, education, social and pers.services	4	2	7	1	1	1	2
Other services	9	7	3	5	4	1	7
Total Responses	50	46	43	29	20	14	31

Internal Staff Training

Person-Days	% Responses by Organisation Size on Internal Staff Training Person-Days			
	Micro	Small	Medium	Large
<1 Day	25%	31%	21%	23%
1-2 Days	5%	24%	36%	35%
3-5 Days	4%	30%	26%	40%
6-10 Days	0%	17%	33%	50%
11-15 Days	6%	24%	35%	35%
16-20 Days	7%	20%	27%	47%
21+ Days	5%	14%	20%	61%
Total Responses	24	66	77	111

Responses on Internal Staff Training Person Days by Sector							
Sector	<1 Day	1-2 Days	3-5 Days	6-10 Days	11-15 Days	16-20 Days	21+ Days
Agriculture, forestry and fishing	2	0	1	1	0	2	2
Mining and extraction	0	0	0	0	0	0	0
Food, drink and tobacco	2	4	4	3	1	1	0
Textiles, leather, footwear and clothing	2	1	0	0	1	0	3
Wood and wood products	0	0	0	0	0	0	0
Pulp, paper, and paper products	3	1	1	0	0	0	1
Printing and publishing	2	1	0	2	0	0	0
Oil & fuel	1	0	0	0	0	0	3
Chemicals	8	6	3	1	4	2	2
Rubber and plastics	0	2	0	2	2	0	0
Non-metallic mineral products	3	0	1	0	0	1	0
Basic and fabricated metals	3	3	1	0	2	2	2
Mechanical engineering	1	4	0	3	0	0	0
Electrical and electronic equipment	2	3	4	1	0	0	2
Transport equipment	1	0	2	0	0	0	2
Furniture, recycling and other manu.	1	2	3	0	0	1	0
Utilities (gas, electric, water)	3	3	5	2	0	1	3
Construction	0	1	1	2	0	0	3
Motor vehicle and wholesale trade	0	0	0	0	1	0	0
Retail trade and repair	0	0	0	0	0	0	0
Hotels and catering	2	4	0	2	0	0	1
Transport	0	1	0	2	1	1	1
Communications - broadcast	1	0	0	0	0	0	0
Finance, insurance and intermediation	0	0	1	2	0	0	1
Real estate and renting	1	0	0	0	1	0	1
Other business services	6	2	2	2	0	0	3
Health, education, social and pers.services	4	2	7	0	2	1	2
Other services	6	10	9	4	1	0	6
Total Responses	54	50	45	29	16	12	38

Attaching EMAS Logo

Person-Days	% Responses by Organisation Size on Attaching EMAS Logo Person-Days			
	Micro	Small	Medium	Large
<1 Day	11%	25%	29%	35%
1-2 Days	4%	19%	27%	50%
3-5 Days	7%	7%	27%	60%
6-10 Days	0%	33%	17%	50%
11-15 Days	0%	100%	0%	0%
16-20 Days	0%	100%	0%	0%
21+ Days	0%	100%	0%	0%
Total Responses	22	60	70	100

Responses on Attaching EMAS Logo Person Days by Sector							
Sector	<1 Day	1-2 Days	3-5 Days	6-10 Days	11-15 Days	16-20 Days	21+ Days
Agriculture, forestry and fishing	5	2	0	0	0	0	0
Mining and extraction	0	0	0	0	0	0	0
Food, drink and tobacco	11	2	0	0	0	0	0
Textiles, leather, footwear and clothing	6	0	0	1	0	0	0
Wood and wood products	0	0	0	0	0	0	0
Pulp, paper, and paper products	5	0	0	0	0	0	0
Printing and publishing	3	1	1	0	0	0	0
Oil & fuel	1	1	0	1	0	0	0
Chemicals	13	6	3	1	0	0	0
Rubber and plastics	4	2	0	0	0	0	0
Non-metallic mineral products	4	0	1	0	0	0	0
Basic and fabricated metals	6	4	1	0	0	0	0
Mechanical engineering	4	4	0	0	0	0	0
Electrical and electronic equipment	7	1	0	0	0	0	2
Transport equipment	3	2	0	0	0	0	0
Furniture, recycling and other manu.	4	0	0	1	1	0	0
Utilities (gas, electric, water)	11	2	0	0	0	0	0
Construction	4	2	0	0	0	0	0
Motor vehicle and wholesale trade	0	0	0	0	0	0	0
Retail trade and repair	0	0	0	0	0	0	0
Hotels and catering	4	3	0	1	0	0	0
Transport	4	1	1	0	0	0	0
Communications - broadcast	1	0	0	0	0	0	0
Finance, insurance and intermediation	3	1	0	0	0	0	0
Real estate and renting	1	0	1	0	0	0	0
Other business services	13	1	0	0	0	0	0
Health, education, social and pers.services	12	5	2	0	0	0	0
Other services	22	6	4	1	0	1	0
Total Responses	151	46	14	6	1	1	2

Modifications to IT Systems

Person-Days	% Responses by Organisation Size on Modifications to IT Systems Person-Days			
	Micro	Small	Medium	Large
<1 Day	13%	28%	28%	31%
1-2 Days	3%	22%	34%	42%
3-5 Days	7%	7%	28%	59%
6-10 Days	0%	30%	20%	50%
11-15 Days	0%	20%	40%	40%
16-20 Days	0%	0%	33%	67%
21+ Days	22%	11%	11%	56%
Total Responses	22	55	70	95

Responses on Modifications to IT Systems Person Days by Sector							
Sector	<1 Day	1-2 Days	3-5 Days	6-10 Days	11-15 Days	16-20 Days	21+ Days
Agriculture, forestry and fishing	6	0	1	0	0	0	0
Mining and extraction	0	0	0	0	0	0	0
Food, drink and tobacco	9	3	2	0	0	0	0
Textiles, leather, footwear and clothing	4	2	0	0	0	0	1
Wood and wood products	0	0	0	0	0	0	0
Pulp, paper, and paper products	4	1	0	0	0	0	0
Printing and publishing	2	2	0	0	1	0	0
Oil & fuel	1	0	2	0	0	0	0
Chemicals	11	5	4	1	0	1	0
Rubber and plastics	3	1	1	1	0	0	0
Non-metallic mineral products	3	1	1	0	0	0	0
Basic and fabricated metals	4	3	1	0	2	0	1
Mechanical engineering	3	3	1	1	0	0	0
Electrical and electronic equipment	2	3	1	0	0	0	2
Transport equipment	3	1	0	0	0	0	0
Furniture, recycling and other manu.	2	1	0	2	0	0	1
Utilities (gas, electric, water)	6	4	2	0	0	1	0
Construction	2	2	3	0	0	0	0
Motor vehicle and wholesale trade	0	0	0	0	0	0	0
Retail trade and repair	0	0	0	0	0	0	0
Hotels and catering	1	3	1	1	0	0	0
Transport	3	2	0	0	0	0	0
Communications - broadcast	1	0	0	0	0	0	0
Finance, insurance and intermediation	2	1	0	0	0	1	0
Real estate and renting	0	0	1	1	0	0	0
Other business services	7	4	1	0	0	0	1
Health, education, social and personal services	10	7	1	0	0	0	0
Other services	19	6	3	1	1	0	1
Total Responses	108	55	26	8	4	3	7

Publication of Statement

Person-Days	% Responses by Organisation Size on Publication of Statement Person-Days			
	Micro	Small	Medium	Large
<1 Day	16%	28%	36%	21%
1-2 Days	7%	26%	27%	41%
3-5 Days	7%	13%	33%	47%
6-10 Days	0%	22%	17%	61%
11-15 Days	0%	0%	25%	75%
16-20 Days	0%	44%	11%	44%
21+ Days	0%	25%	8%	67%
Total Responses	23	62	77	106

Responses on Publication of Statement Person Days by Sector							
Sector	<1 Day	1-2 Days	3-5 Days	6-10 Days	11-15 Days	16-20 Days	21+ Days
Agriculture, forestry and fishing	2	1	2	1	0	0	1
Mining and extraction	0	0	0	0	0	0	0
Food, drink and tobacco	5	7	3	0	0	0	0
Textiles, leather, footwear and clothing	4	2	0	0	0	0	1
Wood and wood products	0	0	0	0	0	0	0
Pulp, paper, and paper products	3	0	2	0	0	0	0
Printing and publishing	2	1	1	1	0	0	0
Oil & fuel	0	2	1	0	0	0	0
Chemicals	9	5	4	5	0	2	1
Rubber and plastics	2	3	1	0	0	0	0
Non-metallic mineral products	2	1	2	0	0	0	0
Basic and fabricated metals	5	2	4	0	1	0	1
Mechanical engineering	1	5	1	0	1	0	0
Electrical and electronic equipment	3	2	1	1	0	2	2
Transport equipment	1	1	1	2	0	0	0
Furniture, recycling and other manu.	3	3	0	0	0	1	0
Utilities (gas, electric, water)	3	3	3	3	2	0	0
Construction	3	1	1	1	1	0	0
Motor vehicle and wholesale trade	0	0	1	0	0	0	0
Retail trade and repair	0	0	0	0	0	0	0
Hotels and catering	2	2	2	1	0	0	0
Transport	1	2	1	0	0	1	1
Communications - broadcast	1	0	1	0	0	0	0
Finance, insurance and intermediation	1	0	2	0	0	0	1
Real estate and renting	1	0	1	0	1	0	0
Other business services	9	2	4	0	0	0	0
Health, education, social and pers.services	8	4	4	2	0	0	0
Other services	13	12	4	1	1	1	3
Total Responses	84	61	47	18	7	7	11

19. *Please indicate the annual staff time required by your organisation to maintain EMAS (in person days).*

Person Days	External Consultancy	Environmental Review	EMS Development	Internal Audit	Preparation of Statement	Internal Staff Training	Attaching EMAS Logo	Modifications to IT Systems	Publication of Statement
<1 Day	52%	27%	27%	27%	27%	31%	81%	64%	44%
1-2 Days	19%	29%	26%	24%	25%	29%	15%	21%	28%
3-5 Days	15%	20%	19%	20%	17%	19%	3%	9%	14%
6-10 Days	7%	8%	10%	13%	12%	9%	1%	3%	4%
11-15 Days	4%	6%	4%	7%	7%	4%	0%	0%	5%
16-20 Days	2%	4%	5%	3%	5%	2%	0%	1%	2%
21+ Days	2%	7%	9%	6%	6%	5%	0%	2%	3%
Total Responses	253	283	268	279	271	270	251	244	264

A discussion on the time spent on individual tasks is presented in Chapter 4 assessing the costs by Member State, organisation size and industry sector. In general, responses do not differ significantly from the previous question presenting first year implementation times by organisation size and sector.

20. *What fees and costs has your organisation incurred to implement EMAS, in the first year and annually in subsequent years?*

Details of the fees and costs incurred to implement EMAS by different organisations are presented in chapter 4 of this report.

21. *Please provide an estimate of the typical daily or annual full-time equivalent (FTE) costs of staff in your organisation involved in EMAS*

Daily Rate Category (€)	External Consultant	Internal Experts	Internal Administration	Other
Less than €250	33%	30%	63%	20%
€251-€500	17%	33%	16%	17%
€501-€750	12%	12%	11%	18%
€751-€1,000	15%	10%	5%	18%
€1,000-€1,500	15%	10%	3%	16%
More than €1,500	8%	6%	2%	10%
Total Responses	169	189	130	87

A breakdown of staff costs for those persons involved in implementing EMAS is provided in chapter 4 by Member State, sector, organisation size and between public and private sector organisations.

Section E: Incentives and Barriers

22. Which of the following incentives offered by Member State authorities to encourage EMAS registration was available to you? If so, did you take advantage of them?

Incentive	Available	Taken-up	% Available	% Taken-up
Reduced Regulatory Enforcement	79	59	18%	15%
Guidance Documents	110	70	25%	18%
Financial Support	53	90	12%	23%
Technical Assistance	57	50	13%	13%
Promotion of EMAS Registered Organisations	79	50	18%	13%
Streamline Other Applications	48	57	11%	15%
Other	9	11	2%	3%
Total	435	387	100%	100%

Incentive Availability by Organisation Size	Micro	Small	Medium	Large
Reduced Regulatory Enforcement	18%	21%	15%	19%
Guidance Documents	30%	20%	27%	26%
Financial Support	15%	13%	14%	10%
Technical Assistance	6%	13%	15%	13%
Promotion of EMAS Registered Organisations	15%	20%	17%	18%
Streamline Other Applications	9%	10%	11%	12%
Other	6%	2%	1%	2%

Incentive Take-Up by Organisation Size	Micro	Small	Medium	Large
Reduced Regulatory Enforcement	13%	14%	18%	15%
Guidance Documents	15%	20%	14%	20%
Financial Support	26%	27%	22%	21%
Technical Assistance	13%	12%	14%	13%
Promotion of EMAS Registered Organisations	13%	8%	20%	12%
Streamline Other Applications	13%	16%	10%	18%
Other	8%	3%	3%	1%

Incentive Availability by Member State	Reduced Regulatory Enforcement	Guidance Documents	Financial Support	Technical Assistance	Promotion of EMAS Registered Organisations	Streamline Other Applications	Other
Austria	4	5	0	2	5	2	0
Belgium	1	1	2	2	0	1	2
Bulgaria	0	0	0	0	0	0	0
Cyprus	0	0	0	0	0	0	0
Czech Republic	1	4	2	1	4	0	0
Denmark	3	8	3	3	3	4	1
Estonia	0	0	0	0	0	0	0
Finland	1	1	0	1	1	0	0
France	0	1	1	1	2	0	0
Germany	20	24	12	13	17	9	1
Greece	0	2	0	2	1	1	0
Hungary	0	0	0	0	0	0	0
Ireland	2	1	1	1	0	0	1
Italy	16	16	17	8	19	13	1
Latvia	3	1	0	0	0	0	0
Lithuania	0	0	0	0	0	0	0
Luxembourg	0	0	0	0	0	0	0
Malta	0	0	0	0	0	0	0
Netherlands	1	2	1	1	0	0	0
Poland	0	0	0	0	0	0	0
Portugal	2	3	0	2	1	0	1
Romania	0	1	0	0	0	1	0
Slovakia	0	0	0	0	0	0	0
Slovenia	0	0	0	0	0	0	0
Spain	22	33	12	17	19	14	2
Sweden	0	1	0	1	0	0	0
United Kingdom	1	2	0	0	3	1	0
Total	77	106	51	55	75	46	9

Incentive Take-up by Member State	Reduced Regulatory Enforcement	Guidance Documents	Financial Support	Technical Assistance	Promotion of EMAS Registered Organisations	Streamline Other Applications	Other
Austria	4	2	2	4	1	1	0
Belgium	1	2	3	2	2	1	0
Bulgaria	0	0	0	0	0	0	0
Cyprus	2	2	2	2	0	0	0
Czech Republic	1	1	1	2	1	1	0
Denmark	5	1	2	4	3	2	0
Estonia	0	0	0	0	0	0	0
Finland	0	1	0	0	0	1	0
France	2	0	1	1	0	2	0
Germany	11	9	13	6	13	12	1
Greece	2	2	4	0	1	1	0
Hungary	0	1	0	1	0	0	0
Ireland	0	1	0	0	0	0	0
Italy	15	17	25	11	8	16	4
Latvia	0	2	2	2	2	2	1
Lithuania	0	0	0	0	0	0	0
Luxembourg	0	0	0	0	0	0	0
Malta	0	0	0	0	0	0	0
Netherlands	1	0	0	0	1	1	0
Poland	0	1	0	0	1	0	0
Portugal	0	2	2	0	2	1	0
Romania	0	0	0	0	0	0	0
Slovakia	0	0	0	0	0	0	0
Slovenia	0	0	0	0	0	0	0
Spain	11	16	29	9	13	13	4
Sweden	0	1	0	0	0	0	0
United Kingdom	1	6	2	3	0	0	1
Total	56	67	88	47	48	54	11

Other incentives highlighted by respondents include:

- Nothing practically offered, need a lot of improvement, at least in promotion
- Wallonian public subsidies for investment in eco-technologies are higher if the company is ISO 14001 or EMAS registered goes from 20% of the investment costs to 25% if ISO 14001 certified and 30% if EMAS registered)
- Tax reduction in the occupation of public space (private port terminal, working in public area)
- Prerequisite for public funding and contracts

23. Which of the incentives do you consider the most important in encouraging EMAS participation? Please rank them, with 1 being the most important.

Incentive	% Responding that incentive provided different levels of encouragement				
	1	2	3	4	5
Reduced Regulatory Enforcement	22%	14%	13%	15%	15%

Guidance Documents	8%	17%	26%	20%	16%
Financial Support	21%	15%	13%	16%	13%
Technical Assistance	8%	18%	19%	24%	22%
Promotion of EMAS Registered Organisations	20%	17%	12%	16%	12%
Streamline Other Applications	18%	17%	15%	10%	14%
Other	2%	0%	2%	0%	7%
Total Responses	496	408	324	154	161

Most Important Incentive by Member State	Reduced Regulatory Enforcement	Guidance Documents	Financial Support	Technical Assistance	Promotion of EMAS Registered Organisations	Streamline Other Applications	Other
Austria	4	2	5	2	5	2	1
Belgium	2	1	2	1	6	1	1
Bulgaria	0	0	0	0	0	0	0
Cyprus	0	0	2	0	0	0	0
Czech Republic	1	0	1	0	1	0	0
Denmark	3	3	0	1	4	4	0
Estonia	0	0	0	0	0	0	0
Finland	1	1	1	0	1	2	0
France	1	0	2	1	0	1	0
Germany	21	5	16	1	17	13	2
Greece	1	1	5	2	5	3	0
Hungary	1	0	1	0	0	1	0
Ireland	3	1	2	2	2	2	0
Italy	28	6	27	10	19	17	2
Latvia	1	0	2	0	1	0	0
Lithuania	0	0	0	0	0	0	0
Luxembourg	0	0	0	0	0	0	0
Malta	0	0	0	0	0	0	0
Netherlands	2	0	1	0	1	1	0
Poland	1	0	1	0	0	1	0
Portugal	6	3	7	4	5	4	1
Romania	0	1	0	0	1	1	0
Slovakia	0	0	0	0	0	0	0
Slovenia	0	0	0	0	0	0	0
Spain	25	8	25	11	25	23	2
Sweden	4	3	2	1	2	1	0
United Kingdom	4	4	4	2	4	8	0
Total	109	39	106	38	99	85	9

Other incentives highlighted include:

- Simplified authority workflows and acceptance
- Decision of the federal government that all administrations must have EMAS

- Accelerated permitting frames (e.g. granted day of negotiation within 30 days after submission of appropriate entry), reduced tax on staff working at EMAS
- Public image/promotion of EMAS
- Fiscal incentives
- Systematic audits of the verifier within the EMAS system must get the same relevance as the technical checks of experts, otherwise there will be too much and expensive inspection and audits

24. What do you consider to be the greatest barriers to wider uptake of EMAS? Please rank the barriers (with 1 as the most important).

Barrier	% Responses scoring barrier as ...				
	1	2	3	4	5
Cost of Registration	13%	14%	15%	27%	27%
Costs of Implementation	21%	18%	15%	11%	11%
Benefit Unclear or Insufficient	26%	17%	14%	9%	6%
Regulatory Pressures	10%	16%	18%	22%	22%
Lack of Incentives	17%	16%	16%	15%	13%
Internal Management Preference	11%	17%	21%	14%	17%
Other	2%	1%	1%	0%	5%
Total	436	455	434	201	151

Barrier	% Responses by Organisation Size scoring the Barrier as 1			
	Micro	Small	Medium	Large
Cost of Registration	21%	15%	16%	8%
Costs of Implementation	23%	26%	24%	16%
Benefit Unclear or Insufficient	23%	21%	27%	30%
Regulatory Pressures	9%	9%	8%	11%
Lack of Incentives	18%	19%	15%	18%
Internal Management Preference	7%	10%	10%	14%
Other	0%	0%	0%	4%
Total Responses	57	103	100	176

Additional Comments:

- Requirement for ISO 14001
- International acceptance
- EMAS is still not sufficiently in the public mind in order to develop pressure or demand for industry, services etc to participate
- The benefits of EMAS are not clear until you really have it, (EMAS awards could be developed as a platform to showcase and promote best practice and produce continuous information)
- Efforts should bring added value, ISO efforts and validation brought more benefits

Annex VI: Example Matrix: Organisations

Example Matrix for analysis of interview information on organisations' reasons for becoming EMAS registered

Reason	Qualitative information					
	Micro	Small	Medium	Large	Public	Private
Requirement of customer/supply chain						
Requirement of shareholders						
Industry sector initiative						
Prerequisite for public funding/access to contracts						
Wish to improve resource and production efficiency						
Improve reputation compared to competitors						
Generate new 'greener' product or service						
Response to competitor actions						
Improve legislative compliance						
Improve risk management						
Internal management approach/culture						
Encourage employee participation						
Stakeholder transparency /local community pressure						
Reduced implementation/application costs						
Financial public support						
Technical or informational public support						
Other						