EVER:
Evaluation of EMAS and Eco-Label for their Revision

Annex III

EMAS AND ECO-LABEL CASE STUDIES BASED ON "ON-SITE" VISITS

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Introduction

A crucial part of the EVER study has been devoted to carrying out five on-site visits, aimed at analysing in-depth some experiences of particular interest. These experiences focus on the application of EMAS and the EU Eco-Label regulations by organisations, groups of organisations, institutions and other stakeholders.

The aim of the on-site visits, and of the connected case studies presented in this report, was to enrich the overview provided by the EVER interviews with a more detailed insight of interesting experiences. The experiences were identified and selected by the EVER consortium on the basis of their capability to offer more specific indications regarding strengths and weaknesses of the two voluntary schemes, as a basis to propose the options and recommendations for the revision (see Report 1).

As we will see in the following paragraphs, the proposed case studies build upon the failures or the successes of some approaches that can be adopted, both at the company and at the system level, to support the development of the two schemes.
From a methodological point of view, the EVER consortium elaborated specific guidelines for the on-site case analysis, in order to tailor the investigation to the features of the experiences being object of the study. The guidelines mainly consist of open semi-structured "research questions" covering selected topics, that are summarised by the titles of the sub-paragraphs of each case study.

As far as EMAS is concerned, the selection of the experiences to investigate took into account the need to consider different "typologies" of organisations. As a result, not only companies (Hanover Displays Ltd) have been visited, but also companies operating in clusters, as that of paper industry in Lucca, Italy, and EMAS in Public Administrations has been investigated, as well.

A similar approach has been adopted for the EU Eco-Label, as well. The research team analysed both a single organisation (National Procurement Ltd) playing a crucial role in promoting the label and a whole sector, assessing the German situation of the Flower for washing machines.

The following paragraphs present the reports of the five on-site visits carried out by the EVER consortium.

CASE STUDY 1

Hanover Displays Ltd. Lewes, East Sussex UK.

"Visions of EMAS adoption by a non-participant"

by SPRU – Sussex University

1.1 Motivation of case-study

EVER interviewees, especially in the United Kingdom, have argued that one of the main barriers to EMAS registration is the lack of differentiation with the internationally accepted ISO 14001 standard. In our case study we have decided to focus on a technological leader in its market that has not adopted an Environmental Management System yet – even ISO 14001. Our aim is to assess the reasons why the company has not found it necessary or useful to integrate environmental management into its quality management systems, and determine what sort of modifications in EMAS would constitute drivers for its implementation over competing alternatives such as ISO 14001 or BS 8555.

1.2 Hanover Displays Ltd. Lewes.

Hanover Displays Ltd. is the leading European manufacturer of electronic displays for public transport systems: it supplies customers in Europe, the Middle East, Asia and Australia, and has received several awards for its innovativeness. Although its main production centre is located in Lewes, it has subsidiaries in Spain, France, Italy and Australia. All parts are manufactured in the UK and sold through the subsidiaries.

The company has 28 employees in the UK and turnover last year was just over £10m/year.

The company makes all of the display equipment that it sells. Some signs are based on flip-dot technology, but increasingly they make use of LED lighting. These are assembled from individual LED lights on site in the Lewes factory. Products are guaranteed for 10 years and this is part of the way that they differentiate their products from those of emerging competitors in China.

1.3 Environmental challenges and the company's response

The company has faced some considerable technical challenges of an environmental nature that have stemmed from new regulations. The company uses thousands of printed circuit boards that need soldering and cleaning. A new European directive has required the introduction of lead-free solders by summer 2006, and the company is in the process of converting its production. This has involved considerable capital expense and they have been early adopters. Also, once the decision was made to switch, they decided to switch all production even though in some of the markets they sell to (e.g. Hong Kong), lead-free solder is not required.

Their main environmental impacts are waste, energy use, chemical use and packaging. They separate all their waste – the big ones are cardboard, paper, packaging and metal. They have to pay for this to be taken away, even the metal. With the latter they used to receive payment from a scrap merchant but prices have fallen. Also, they powder coat the metal making it more difficult to re-process.

There has been some correspondence with a client over styrene use in packaging, which resulted in continuing with the same material rather than a biodegradable alternative due to concerns about the need to protect the product in transit.

Energy use is set by the type of machinery they use to make their signs, and there are few possibilities for cutting energy use.

They are controlling chemical use in line with the new regulations for lead-free solder. The other main chemical they use is within the machines for cleaning after the solding process.

1.4 Environmental management systems

The company has ISO 9001 because their customers demand it: when bidding for contracts it is often a matter of 'if you have ISO9001 go to page 46 (missing out all the intervening pages), and for some customers it is a requirement.

By contrast, the company has never had a customer require or request ISO14001 or EMAS. The chief engineer is aware of ISO 14001 and has a copy of the specification and requirements to register, but he has never seen the need to implement and it would require a significant investment of time so the general attitude is 'why bother?' He also thought the material on 14001 'not well written' and involving 'a lot of admin for not much gain'. The material is 'very general' and does not provide many ideas on how to actually improve environmental management and performance.

The company was not aware of the requirements of EMAS but again has never had customer demand for this so there is little chance it will be interested in adopting it.

Some customers such as those from the Scandinavian countries are occasionally concerned to ask about environmental management and performance, and Hanover is happy to help in these cases, for example by showing people around the factory. They have received visits from companies such as Scania. This has always been sufficient to meet the customers' demands.

Supply chain management is a serious concern when regulations require an auditable chain to show that products are, for example, lead free. The company uses up to 50,000 different components and these need to come with 'declarations' that guarantee that they are e.g. free of lead solder.

Communication with other stakeholders: the company occasionally receives a request to host a student from abroad but they have never had any requests about environmental performance from local people or government.

Employee involvement: the staff is kept aware of the need for health and safety with respect to machines, clearing rubbish to avoid trip accidents etc and participate willingly in sorting waste for recycling. So there is no apparent anti-environmental sentiment in the firm, most people join in when appropriate, but it just is not thought to be an important impact of the firm.

1.5 Main conclusions

- Environmental strategies are driven by regulation; the adoption of management systems is driven by customer demand. There is no perception of a need to go beyond the environmental management aspects required by a regulation that is perceived to be very stringent.

- Communication of environmental aspects and management is fulfilled via visits to the plant and face-to-face contact but there is not a great demand from customers and other stakeholders.

- Communication with suppliers for the management of environmental aspects is handled via declarations about the contents of production inputs, not Environmental Management Systems, which focus more on the environmental soundness of production processes.

- Customers do not require EMS certification, and awareness of EMAS and its specific characteristics is non-existent.

CASE STUDY 2

On-site visit in Donaueschingen /Germany

"EMAS in the public administration"

by Walter Kahlenborn and Ines Freier – Adelphi Consult

2.1 Motivation of the case study

In the EVER study the Public sector was one key-group of EMAS participants which has been investigated more in-depth. The on-site visit in the Municipality of Donaueschingen was conducted in order to deepen the insight into public administration, its organisation, motivations for - and implementation of EMAS. Especially the question of benefits and barriers was a central issue of the interview.

2.2 Municipality of Donaueschingen - Organisation, motivation and implementation of EMAS

2.2.1 Organisation

The Municipality of Donaueschingen is situated in the south-west of Germany, near the Black Forest. The municipality has 21,500 inhabitants and an area of 104 square kilometres.

The city council looks back on a long history of environmental protection, starting in 1992 with a first programme for climate protection, but also an energy management and reporting on energy use, investment planning and a publication of an energy report. In 1998 environmental quality goals for the municipality were constituted, and it became a member of the Alliance for Climate as the Aalborg Charta was signed.

The municipality has a staff of 284, 172 persons of them are employed full-time and other 102 part-time. (attending to the concerns of EMAS).

2.2.2 Motivation for EMAS participation

Asking for the reasons of participating in EMAS, the interview partners mentioned the following two advantages:

1. A general improvement of the image of the city as an attractive place for direct investments together with measures in the area of education and culture derive from EMAS.
2. The systematization of all environmentally relevant activities of the municipality, especially the optimisation of administrative processes.

It should be noted that no other management systems are implemented.

2.2.3 EMAS implementation

The EMAS implementation started in the year 2000, its registration was in 2003, and the re-validation is planned for 2006. The participation was supported in the framework of an EMAS promotion project financed by the Federal State Baden-Württemberg. The project had a group-based approach. The municipality was member of a group composed only of public bodies.

The EMAS working group within the municipality consists of the head of the administration (a general environmental manager), an energy manager, a manager for nature conservation, a waste manager, a water manager and an H&S manager. The head of the administration ensures that all the measures are implemented; the manager for nature conservation plans and organises the EMAS participation; both the Mayor of the town and the local parliament are informed and support the EMAS implementation.

Concerning the environmental programme, the municipality acts as an organisation with two fields of action, procurement and energy. The municipality can also be seen as a political actor for environmental protection in the fields of action town planning, traffic and water.

The environmental target is mainly to continue existing measures, as well as the revision of administrative procedures. Measures therefore are regular internal audits and the publication of an environmental report.

2.3 Benefits

The benefits of the EMAS participation are manifold. In a nutshell there can be enumerated three mayor points.

1. There are improvements of environmental effects, mainly concerning the management of hazardous materials and the necessary documentation; but also improvements of H&S management e.g. by a working group on H&S are claimed.
2. Organisational improvements are observed such as the better implementation of existing administrative guidelines for environmental protection.
3. The advantage of cost savings by efficiency gains is comparatively marginal, because energy management has been implemented already for 15 years.

2.4 Innovative aspects

2.4.1 Broad scope of EMAS

As a first aspect the interview partners highlighted the broad scope of EMAS. The local actors recognised that the municipality also plays a political role and that the environmental aspects have to be considered, too. This is why EMAS covers a broad range of environmental aspects, but only some of them are selected for continuous improvement, thus no aspects are left out but only significant aspects are improved. Direct and indirect impacts can be distinguished.

2.4.2 Direct aspects

The direct aspects include almost all public buildings such as schools etc., exceptions only arise from the limited scope of the verifier.

2.4.3 Indirect aspects

Regarding the indirect environmental aspects, the interview partners named voluntary measures of the municipality included in EMAS; e.g. the promotion of energy saving housing. Furthermore EMAS is included in planning decisions (e.g. in the planning of a housing area or the nature conservation planning) and it is also linked with energy and facility management. Also the Green procurement (for example recycling paper and lists of building material) is mentioned as an indirect effect.

Moreover Health & Safety issues are also covered.

2.4.4 Soft location factor

A sound local environment qualifies as a soft factor attracting investments. Therefore EMAS is supported by local policy makers.

2.5 Difficulties / Barriers

2.5.1 Employees must feel confident

Referring to possible difficulties and/or barriers, the interview partners mentioned the problem of the conviction of employees for them to see that documentation is necessary.

2.5.2 Broad coverage of EMAS

Also, there is a risk that a narrow scope of the verifier prevents that some organisational entities such as the forest management or the fire guards are covered by the EMS.

2.5.3 Adequate administrative guidelines and time management

Pressure of time can become important: the registration with the local chamber of industry and commerce took a long time because the competent body did not want to accept the definition of sites, (which was needed because all buildings are covered by one adminitrative entity as one site).

2.5.4 Report as a tool?

The interviewees also revealed that it was difficult to use the environmental report as a communication tool with the private sector.

2.6 Conclusions - Lessons for the revision of the scheme –

Taken together we have the following advantages of an EMAS for public institutions:

- The existing structures of the public administration can be used (e.g. for marketing purposes), which makes it easier for public bodies to become acquainted with EMAS;
- The registration with public bodies e.g. the Ministry of the Environment of the Federal State is possible;
- The definition of sites / organisations can be adapted to the needs of the public sector;
- The language can be adopted to the needs of the administration;

- Guidelines for public bodies make sense, for example for the identification of indirect aspects, (because the investigated municipality is an outstanding example how a wide range of aspects is covered, other municipalities are not able to implement such a broad EMS);
- Different structures for the external audit become feasible (e.g. peer-reviews which are less costly than the verifiers and contribute more to capacity building in the administration).

2.7 Sources

The case study is based on personal interviews with the Mayor of the town Donaueschingen (Germany) Mr. Kaiser; the Head of administration Mr. Zimmermann; the Manager for nature conservation Mr. Bronner and the energy manager; 18th of October 2005. The text has been approved by the interviewees.

CASE STUDY 3

Paper industries operating in the industrial district of Lucca, Italy

"A cluster approach for the application of EMAS"

by Fabio Iraldo – IEFE Bocconi, Milano

3.1 Background

The innovations introduced by EMAS Regulation EC/761/2001, which were broadly interpreted in Article 11 and later officially incorporated in the Commission Decision of 07/09/2001, identify EMAS as a strategic instrument in implementing local policies intended to improve the environmental performance of cluster and/or "territorial areas" in which similar small companies are concentrated.

Before the first revision, the possibility of applying EMAS to Industrial Areas was experimented in few cases both in Italy and in other EU countries. In Italy, we can mention the case of the Bayer Production Pole in Filago, where companies with numerous diversified productive activities signed an agreement to appoint an inter-company Environmental Committee. Another recent case regards the registration of the tourism area of Bibione. Cases in the EU include, for example, the Gendorf Chemical Pole in Bayern, where the firms worked closely together for EMAS implementation. All these experiences, though, were based on a broad interpretation of the concept of "industrial site" taken to mean an "extended site" (comprising the total number of industrial sites located in the area), and therefore are not applicable as such to a wider cluster.

Article 11 of EMAS explicitly refers to the need to encourage SMEs to adhere to the scheme, including those enterprises concentrated in well-defined geographical areas. It also refers to the role that local actors, outside the single organisation that adheres to EMAS, can play in identifying and evaluating the environmental aspects linked to a certain environmental context. The EMAS Regulation recommends local authorities work together with the other private actors in order to share the results of the analysis made on the environmental aspects of the area. Finally, it is pointed out that SMEs can use the information provided by the local authorities or intermediate institutions to define their environmental programme and set the objectives and targets of their EMAS management system. This last concept is taken up again and explained in the Annex I B to the Regulation, which points out that organisations can base their actions on local, regional and national environmental programmes, and in this way explicitly gives enterprises the opportunity to rely on actions of a collective nature. Following the regulation guidelines, a Commission Decision was issued in September 2001 and listed the criteria to identify the entity to be registered. At point 7, it provides the basis for identifying the suppositions for initiating the phases required to promote EMAS in a cluster.
In Italy, some important initiatives were undertaken at the institutional level to develop such an approach. In addition to some experimental activities, such as the one described in the present case-

study, the two most relevant initiatives are the methodology proposed and officially adopted by the Regione Toscana (Tuscany region) for the adoption of EMAS in industrial districts and the official position of the Comitato Eco-Label – Ecoaudit, Sez. EMAS Italia (the EMAS Competent Body) on the "Ambiti Produttivi Omogenei" (homogeneous productive areas).

3.2 Case study profile

According to these suggestions and indications, in the Lucca paper-producing territorial cluster (located in the Tuscany region in Italy), an innovative approach for co-operative environmental management has been recently proposed. In particular, within the scope of a LIFE-funded project (PIONEER – Paper Industry Operating in Network: an Experiment for EMAS Revision), a number of industrial and non-industrial organisations (local authorities, service providers) have implemented an environmental management system in compliance with EMAS by relying on some co-operative and collective actions (such as common procedures, shared resources, collaborative training initiatives, etc.). This enabled all the local "actors" that meet difficulties in participating in EMAS (the SMEs and the organisations operating in sectors where EMAS is not diffused, such as the local authorities and the service providers) to overcome the barriers in adopting an EMS and, simultaneously, to improve their capability to co-operate in a better co-ordinated and integrated management for local sustainability. These results have been achieved by means of a sort of "EMAS for Cluster" approach (a relevant innovation based on the abovementioned suggestions of the Commission Decision), on which each individual EMS of a single organisation can rely. In this way, the project is fostering the interaction and co-operation between all the different local actors interested in the integrated management of the environmental problems (industry, private service sector, public utilities, local authorities and institutions, universities, research centres, etc.).

This on-site visit focused on some companies operating in the territorial area of the paper-producing industrial cluster of Lucca, in the Tuscany region. This area is extended on a geographical surface of 750 square kilometres, including the territories governed by 12 Municipalities. More than 130 paper producing or processing firms (most of which SMEs) are located in the area, with a high level of aggregation, a considerable density per km^2 and with an occupational capability of more than 5.800 workers employed in the paper sector. In this area, that concentrates more than 80% of the national production of tissue paper, the industrial activities are deeply rooted in the social and institutional local context, and the production sites are mixed and integrated with many other civil, commercial, logistic, administrative and services activities. This is the typical structure of a particular cluster: as it is called in the United Kingdom and in Italy, an "industrial district". The industrial systems of many EU countries are characterised by this territorial forms of production aggregation.

In the case of the Lucca, the clustering of paper producers was due to (and originated from) the considerable local availability of water, a necessary input for this sector. The concentration of a large number of firms operating in the same sector causes relevant environmental impacts and, simultaneously, offers some opportunities of co-operation for improving the same impacts. This holds true for all the territorial areas that possess the characteristics of a cluster, even if it is not located in a given and well-defined territorial area (e.g.: a supply chain).

3.3 Motivations and objectives

The experience of the Lucca cluster aimed at experimenting a potentially effective "EMAS approach for Clusters", which could be reproduced in every other similar cluster (composed of many organisations that operate in the same context: a territory, a supply chain, etc.).

The premises of the analysed experience are a number of synergies that can be obtained at the management and technological level to promote the inclusion and diffusion of innovative elements based on the partnership between the different firms operating within a cluster. It is a question of exploiting the "co-opetition" attitude (co-operation between firms which also compete) and the collaboration between the enterprises and the other economic and institutional actors. A characteristics that favours this approach is the tendency of promoting the spread of information and sharing knowledge and technical resources.

Since the firms are similar and have to tackle the same environmental problems, it is then possible to rely on other synergies already existing at the cluster level. For example, at the management level, it is possible to exploit the advantages connected to the identification of shared environmental "targets", the environmental relevance of the same aspects and the existence of the same social and institutional "fabric" with which to interact. Moreover, the enterprises belonging to a cluster must comply with the same regulations, interact with the same supply chain and face the same environmental emergency situations. In this connection, there are opportunities for different entities to co-ordinate environmental management, and this could promote improved performance, lower costs and outlays linked to the environmental management of each organisation.

In addition, there are environmental scale-economies, that would result from a joint environmental management of the equipment and services shared by the enterprises in the cluster, the positive effects resulting from interacting with the citizens (due to the almost total coincidence of the companies personnel with the local community of the cluster) and the multiplying factor represented by the supply-chain integrated management, in terms of the "pull effect" larger firms can exert on the smaller and less structured ones.

This approach encompasses the implementation of the different steps foreseen by the EMAS regulation *at the cluster level*, so to create a common basis for all the individual organisations that intend to use collective resources and a co-operative approach to achieve an individual EMAS Registration. For this purpose, the PIONEER project provides a territorial initial environmental review, a local policy, a programme for the sustainable development of the cluster, a sort of "Cluster Environmental Management System" (made of different resources or procedures that are available for the individual organisations, e.g.: training, auditing, monitoring and communicating activities) and, finally, a Cluster "environmental statement". These elements were used by the involved organisations to facilitate their adoption of EMAS on an individual basis.

A sample of organisations were selected in the cluster, in order to verify the usefulness and the effectiveness of the co-operative approach. More than 40 organisations were identified among those more motivated to achieve EMAS registration and were involved in the experimental activities of the project. The approach already enabled 2 organisations to achieve EMAS registration by relying on the cluster approach, another 10 organisations already submitted their environmental statement to an EMAS accredited verifier (most of them have already been validated), and many others will follow soon (the objective of the project was to achieve 18 EMAS registrations).

3.4 Description of the EMAS implementation process

As an initial step was the set up of a EMAS Promotion Committee for the whole Cluster. This Committee is composed both of public (e.g.: *Provincia di Lucca*) and private (e.g.: *Associazione degli Industriali di Lucca*) actors and is in charge of defining the strategic guidelines for the cluster environmental policies and of implementing all the abovementioned "common resources", in order to guarantee a co-ordinated and integrated management of environmental issues within the Cluster. The task of this Committee is that of designing and implementing a sort of common support framework ("EMAS for the cluster"), in order to guide and lead the local organisations towards Registration and make them share common resources and procedures. The role of the Committee is to co-ordinate the environmental management initiatives of the different local actors, to originate the actions for environmental improvement and to favour the possible synergies between the individual management systems of the local organisations.

The Promotion Committee meets periodically and its activities are aimed at pursuing the diffusion of the EMAS registrations in the territory by means of the following steps.

The second step has been the Initial Environmental Review referred to the whole Cluster. This review enabled to identify the most relevant and critical environmental (direct and indirect) aspects for the cluster. The aim of the Environmental Review of the Cluster was to support the involved organisations to identify and assess their own environmental aspects, according to EMAS. This was done, for example, by:

- identifying the most relevant impacts on the local environment and assessing the "state of the environment" that is interested by the cluster activities
- identifying the significant environmental pressures exerted by the most diffused typologies of production processes and technologies adopted by the organisations belonging to the cluster
- identifying the indirect (product-related) environmental aspects trough a Life Cycle Assessment
- identifying the environmental issues that the local communities (and other stakeholders) are perceiving as most urgent and important, by means of a "in-field" survey

As a third step, the Promotion Committee defined and shared a Cluster environmental Policy that became a reference for the EMAS policies of all the organisations involved in the cluster. The policy is linked to the territorial context of the cluster and expresses the commitment of all the main actors towards the continual improvement of the environmental performances within the cluster. Such a Policy meets the requirements of EMAS Regulation 761/2001 for an environmental Policy of a single organisation, and therefore can be simply adopted by any actor operating in the cluster.

From the Cluster Policy some collective and co-operative programmes stemmed, pursuing the principle of continuous improvement. These can easily be taken as a reference by all the most representative local actors in order to define their own individual EMAS programmes, so to contribute to the more general Cluster programme. The Cluster Programme contains the concrete and measurable commitments for carrying out strategic and high-priority actions and measures for the whole cluster. The Cluster Programme is based on a voluntary agreement between all the most representative actors of the EMAS Promotion Committee and is enacted by the same Committee with the co-operation of individual actors. In fact, all the organisations operating in the cluster can

easily participate in a collective and co-operative action, undertaking it as an EMAS individual programme.

By means of a sort of "Cluster Environmental Management System", the Promotion Committee also provides the involved organisations with many resources and procedures that can be shared and collectively exploited at the cluster level: training initiatives, auditing activities for the smaller organisations, local supply chain management, etc. All these actions are aimed at supporting the development of EMAS on individual bases by the interested organisations of the cluster.

This action encompasses, for example, the drafting of some "model" procedures for the operational control and surveillance of the relevant activities by the organisations in the cluster. Another example relates to the many initiatives for the environmental training of the local actors that have been carried out (addressed to private and public actors). Some of the training initiatives targeted specific roles in the Cluster (corporate managers, environmental managers, public officers dealing with permits, technical and operational personnel). In addition to these initiatives, a special attention was devoted to the training of a local team of auditors. The Cluster EMS also foresees some procedures for favouring stable communication flows and exchange of information among the local actors. For example, the Promotion Committee created a website that responds to all the requests of information, complaints and suggestions regarding the environmental issues within the cluster, by any interested actor.

A last example refers to the audit system: the Promotion Committee planned the auditing activities for different purposes: to assess the compliance of the individual organisations with legal compliance, of their EMS with the EMAS requirements, etc. For the interested local actors it was then possible to rely on the services of a qualified team of "territorial" auditors. This enabled especially SMEs operating in the cluster to overcome the barriers they face in terms of lack of human and economic resources.

The cluster environmental statement represents a last step that was taken in the Lucca cluster, useful to support the involved organisations and to communicate on environmental issues to the most relevant stakeholders of the cluster.

The cluster Environmental Statement is set up in two parts:

- a general section including a characterization of the territory, the most relevant environmental aspects, the Cluster Environmental Policy, the Environmental Programme and the description of the so-called "Cluster Environmental Management System" common elements and resources available
- a special "add-on" section containing all the specific information about single organizations that individually participate in EMAS and a guideline on how to draft this part of the statement

3.5 Direct and indirect benefits

Most of the benefits emerging from the adoption of a cluster approach are related to resource savings and to the possibility of relying on a shared set of tools and competences for the application of EMAS. The following are just few examples on how the companies involved in the PIONEER approach (that are currently achieving EMAS registration) benefited from cluster-based common

resources, made available by the Promotion Committee:

- *Kartocell*, a tissue-paper producer, found it very useful to perform an assessment of its most significant environmental aspects by strongly relying on the "cluster" environmental initial review, carried out during the project. This company used the results of the cluster initial review to identify the most relevant direct aspects, and defined an assessment methodology based on the relevance that each aspect had for the whole cluster, the capability of influencing the local environment (indicators provided by the cluster review) and the level of importance of each aspect according to the local communities sensitiveness (information provided by the same cluster review, basing on the "in-field" survey). These were adopted as assessment criteria by *Kartocell*.
- *Delicarta*, another tissue-paper producer, carried out the review and assessment of its environmental indirect aspects relying on the LCA that has been carried out on the locally manufactured products. This LCA was performed with a "streamlined" approach by the Promotion Committee within the PIONEER project, on both tissue paper and corrugated board (which are the two most important products of the cluster). The data and information deriving from the LCA were included in the cluster environmental review, in such a way to be easily adopted by any interested producer to identify and assess its product-related indirect aspects.
- *Cartiera Lucchese*, the first company to obtain the EU Eco-Label in Italy and now pursuing EMAS registration, also relied on the cluster approach to identify and assess its environmental indirect aspects. In this case, the most useful tool has been a scheme for identifying and measuring indicators relating to the most relevant indirect aspects for the tissue-paper local industry. This tool has been prepared by the Promotion Committee and diffused to the interested companies.
- *SCA Packaging*, a corrugated board producer, particularly relied on another cluster-based tool, that was made available to the local producers: a common audit team. This activity was judged as very effective by the company, especially because it provided a relevant opportunity to rely on external competence and to compare its experience in environmental management with other approaches.
- Not only paper producers were able to take advantage of the cluster approach: two interesting examples refer to a connected supplier-sector: the manufacturing of paper-producing machinery. *Fosber* strongly relied on the environmental training initiatives carried out at the cluster level, in order to replace the training activities that the companies should have carried out on their own. Among many other involved companies, *Fosber* took part in some courses that were organized and managed by the Promotion Committee on: environmental management, external communication, environmental auditing, etc. A second example is that of *Toscotec*, another machinery producer, that strongly relied on an effective managerial tool that was diffused to all the organizations involved in the project. The *Toscotec* environmental management system, in fact, was build on the basis of some "model" and easy-to-adapt procedures referring to the main EMAS elements: identification and assessment of environmental aspects, Non Compliances and Corrective and Preventive actions, Audit, Management Review, Training and Information of personnel, etc.
- Finally, it has to be emphasized that even organizations operating in non-industrial sectors can benefit from this approach, if they belong to the same cluster. A first interesting example is that of *Fabbriche di Vallico*, a very small municipality that is achieving EMAS registration and, for this purpose, initially mostly relied on the "cluster environmental review", especially for that part identifying and assessing the pressures that the local paper industry is exerting on its territorial area. A last example refers to the *Museo della Carta*, an educational institution that aims at diffusing the history and culture of the paper production. In pursuing EMAS registration, this organization is strongly relying on the cluster approach. Particularly, an interesting choice that the *Museo* is making for empowering its role of "educator" in the

environmental field is to use the "cluster environmental statement" as a supporting tool for all the training and communication initiatives addressed to students, companies and other stakeholders.

It has to be noted that, besides the abovementioned "direct" benefits for the organizations operating in the cluster (and interested in EMAS registration), some "indirect" benefits are produced for the whole institutional and social contexts of the interested territorial area, such as:

- a higher level of knowledge sharing and networking between the EMAS organizations operating in the cluster
- a significant "multiplier" effect on all the other organizations of the cluster (higher sensitiveness, involvement in improvement actions, stakeholder pressure on the laggards, etc.)
- a wide availability of common resources and tools for environmental management, that can be made available to any interested organization
- a strong partnership between public and private actors of the cluster and a relevant capability of negotiating and agreeing upon the most effective environmental policies for the interested area
- a better informed policy making by the local institutions, targeted at the specific characteristics and environmental priorities for the local industrial system
- a higher stakeholder involvement, with particular reference to the increase of environmental awareness in local communities and citizens

3.6 Difficulties and barriers

The most relevant barriers in the implementation of the cluster approach have been the following:

- It is difficult to identify an actor within the cluster that is motivated enough to be the "first mover" in taking (and maintaining) the responsibility of developing, promoting and diffusing common resources and tools for EMAS application. In the case of the Lucca cluster, the first mover was an ad-hoc created Committee, composed of different local actors. In other cases, a public institution or a large company can be motivated enough to take the initiative.
- In the cases, like the Lucca cluster, in which a Committee is created, difficulties may arise in the governance of this newly instituted body and in the negotiation process that is aimed at defining the environmental policies and strategy for the whole cluster.
- A relevant difficulty is also linked to the economic resources that are needed to support the activity of the Promotion Committee and to provide the common tools, competence and other resources to the whole cluster. In this case, a crucial support was given by the LIFE funding.
- Another barrier can be represented by the high number of organisation operating in a cluster (sometimes belonging to many different sectors and branches) and to the their heterogeneity, that can prevent the possibility of creating and diffusing common resources, knowledge and tools.
- A last barrier can be represented by a "free riding" problem. Even if many companies in the cluster will be interested in approaching EMAS and, therefore, in using the cluster-based resources and tools, it might well be that some companies will still be not motivated enough and, therefore, will not benefit from this approach.

3.7 Conclusions

The main lessons learned for the revision of EMAS are the following:

- The cluster approach proves to be effective in stimulating and supporting the adoption of EMAS and, more in general, a better environmental management by the interested companies.
- In order to start up and maintain this particular networking approach, there needs to be a strong motivation by one or more actors in the cluster that are able to take the initiative and make shared resources and common tools available for the involved organisations. This motivation could be an EMAS-related recognition for the "first movers" (e.g.: in the Lucca case, for the Promotion Committee).
- In addition to that, accredited verifiers must be fully involved in the application of this kind of approaches, in order to make it possible and promote the use of shared resources and common tools by all the organisations of a cluster. This can be done, for example, by training and accrediting verifiers in such a way to enable the validation of the cluster-based resources and tools and make them available for all the organisations involved, with no need of further verification and validation.

3.8 Sources

The information for this on-site visit is based on interviews with the Promotion Committee and with many representatives of the Lucca cluster (belonging to all the above mentioned institutions and companies), as well as on the data and material available on the website of the LIFE – PIONEER project (www.life-pioneer.net).

CASE STUDY 4

National Procurement Ltd.

"Use of the Eco-label in Public Green Procurement"

by Birgitte Nielsen – Valor & Tinge

4.1 Motivation of case-study

In the EVER study several interviewees have mentioned Public Green Procurement and the Public sector as frontrunners and as the factor which could give more companies an incentive to get an Eco-label license. This case-study illustrates the possibilities and the barriers of using the EU Eco-Label in public procurement.

4.2 National Procurement Ltd. Denmark

National Procurement Ltd. Denmark is a commercial company owned by The Danish Ministry of Finance and The National Association of Local Authorities in Denmark and established in July 1994. The core service of National Procurement Ltd. is a subscription arrangement offering public organisations advantageous purchasing terms and conditions among an assortment of specially selected products and services. In return, the suppliers get an attractive possibility to sell their products and services to the public sector on a contractual basis.

National Procurement Ltd. Denmark ensures the public sector an adequate purchasing practice resulting in financial savings, safe, well-considered product selections and rationalised working processes. The primary aim is to make public procurement more efficient so that the sector as a whole obtains purchasing savings and the suppliers are offered an attractive possibility to sell goods and services.

The customers of National Procurement Ltd. are institutions in state, county and municipality and environment and energy issues have priority in their purchasing decisions, because of regulation and voluntary agreement. The National Procurement plays an important part in providing the subscribers with framework agreements, which include environment and energy issues. Environment and energy aspects are included in all the framework agreements wherever possible and relevant. This is possible, mainly because of the volume of the purchase.

National Procurement Ltd. Denmark has a staff of 40. National Procurement has 45 framework agreements covering a purchase of expected almost 1 billion Euros in 2005. Half of the purchase is related to IT, data and telecommunication – the rest is mainly energy (ex. fuel and electricity), food

and beverage, furnitures and official journeys. More than 8500 public organizations are customers (subscribers) and 250 suppliers are part of the framework agreements.

In the following sections, we propose the main outcomes of the case studies, by using the key statements made by National Procurement Ltd. representatives during the interview.

4.3 We support the EU Eco-Label because it gives us some advantages

We support the EU Eco-Label for five reasons:

1. The criteria are based on life cycle assessments – a analyzing task we would never be able to undertake ourselves
2. The criteria are credible being set by an impartial group of experts – and we do not have to create criteria ourselves
3. License holders are controlled by 3. party – a controlling task we do not have the resources to undertake
4. The Eco-Label is easy to communicate to our customers – in our product catalogue products with the EU Eco-Label are marked with the logo.
5. The EU Eco-Label is the only way forward – only one European label – all European labels should be joined or harmonized.

4.4 We integrate Eco-Label criteria in our tenders and framework agreements

Wherever relevant our tenders include environmental requirement and if possible the requirement will refer to either one, several or all Eco-Label criteria for the product group with reference to the criteria document.

The problem emerges when we ask for documentation for meeting the requirements. On one recent tender on IT products we got 800 pages of documentation showing that the suppliers meet the Eco-Label criteria, because they do not have the Eco-Label.

How can anyone find time to go through 800 pages of documentation? It is not a feasible situation, but we need the documentation since we do not trust all suppliers. It is understandable if some organisations are tempted to not ask for documentation.

4.5 Lack of political commitment is a barrier for Public Green Procurement

We think that Public Green Procurement needs strong political backing to give the public administrators the authority to put it into practice.

A new survey on green public procurement in Denmark (which will be released in a few weeks) shows that the number of governmental agencies and institutions that have a green procurement policy has decreased over the last 4 years. In that same period the central government have had less (or no) focus on green procurement.

The EU Commission has recommended the Member States to produce a Green procurement action plan, but stronger requests are necessary if we expect to see some action.

4.6 The knowledge of the Eco-Label should be much higher

It would be much better for us if many more suppliers had the EU Eco-Label – it should be much better known and used. The Member states' competent bodies or others in charge should make a much better effort to remove focus from products (Eco-Label criteria) to customers and suppliers – go out and talk to the producers, so they face the opportunities. The people in charge of the Eco-Label should look at the label as a product they should market and sell and they should employ marketing people, who knows how to brand and market a product. For the time being we do not need more or different criteria – we need more licenses.

4.7 Economic incentives should support the label

At the moment we have a campaign on A++ refrigerators and deep freezers in Denmark, where the consumer gets a discount of 140 Euros if they buy an A++ white goods. This is an eye-opener for consumers on the A-G labelling and the campaign is promoting the "best in class". We have never seen anything similar and as efficient for the Eco-Label and the license holders are not promoted. In fact economic incentives in having the Eco-Label would create a bigger demand for the label.

4.8 The force of habits is strong

We often see that see environmentally sound products are bought in smaller quantities, which makes it difficult to negotiate a good price and the distribution becomes very expensive. Often price is the argument for not buying environmentally sound, but if the purchase could be organised differently better prices could be gained especially if forces could be joined.

4.9 Sources

The case study is based on an interview with Environmental Consultant Rikke Dreyer, National Procurement Ltd. – Denmark. 1st of November 2005. The text has been approved by the interviewee.

CASE STUDY 5

Whasing Machine producers in Germany

"German situation of the EU Flower for washing machines"

by Frieder Rubik and Dirk Scheer – IOEW, Office Heidelberg

5.1 Background

Employing an aggregate workforce of over 810,000, Germany's electrical and electronics firms manufacture more than 100,000 different products and systems, including micro-electronic components as well as systems to generate, distribute and transform electrical power, electrical household appliances, automation systems, lamps and luminaires, electrical and electronic medical equipment and consumer electronics, computers, automotive electronics or traffic control systems.

In the subgroup of washing machines, important actors are the producers and importers which sale washing machines on the German market. The important producers/importers are the ones with a larger market share, namely Miele, Bosch and Siemens Hausgeräte (BSH), AEG which is owned by Electrolux and Whirlpool. Beside the producers, mail order business is an important primary actor because they buy products form the producers and sell a part of them on own risk with an own brand name. Important German mail order companies are Neckermann, Otto, Quelle.

The companies are represented by the 'ZVEI- Zentralverband Elektrotechnik- und Elektronikindustrie e.V.', the German Electrical and Electronic Manufacturers' Association. It provides specific information about the economic, technical and regulatory framework conditions of the electrical industry in Germany.

5.2 Description of the Eco-Label implementation process

The European eco-label scheme has elaborated washing machine requirements for an eco-label as one of the first examined product groups already in 1993. The original requirements have been updated some years later in 1999 and have replaced the former ones. In March 2003, a decision has been made to prolong the validity of the criteria without change until 30 November 2005.

This key element of the revision was to make the criterion on energy use more selective, as now only machines that are 10% better than the energy label class A can qualify (i.e. A+). This is challenging for manufacturers, but also gives them an opportunity to distinguish their products from other class A machines now on the market. In addition other criteria have been introduced (spin drying efficiency, noise, flame retardants, free take back, life-time extension) or made stricter (water consumption, washing performance), giving a comprehensive and balanced set of criteria that guarantee that an eco-labelled washing machine meets the highest possible environmental standards.

5.3 Current state

The performance of the EU-Flower for washing machines is disappointing. Actually, manufacturers do not apply for the EU-Flower, in the past the British company Hoover applied for the Flower with two washing machines, but their license run out.

The German Blue Angel elaborated requirement end of nineties, but due to their non-acceptance on the market, they have been cancelled recently. In Scandinavia, the Scandinavian company Asko Cylinda AB[1] uses the Nordic Swan for three models. In the past, the German producer Miele applied also the Swan for two washing machines, but decided not to prolongate their licenses.

In general it is told, that a lot of washing machines sold on the market could fulfil the requirements, but they do not apply for the Flower.

5.4 Direct and indirect benefits

Due to the fact that there are nearly no eco-labelled washing machines both on European and member state level, no *direct* benefits can be reported. Manufacturers having used an eco-label in the past do not report on any increase of sales.

Indirect benefits might arise. Manufacturers will be informed on the environmental priorities of stakeholders like environmental NGOs, their requests, priorities and strategies. The eco-label could also be used as "door opener" to improve market entry.

5.5 Difficulties and barriers

In the following we will focus on several difficulties which hinder eco-labelling of washing machines, we cluster them into several categories:

5.5.1 Business strategies and supply side structure as barrier

The *marketing strategies* of German washing machine producers have a clear preference for their own and self-controlled marketing tools which are embedded in a coherent concept to perceive their products as brand. The application of an eco-label like the Flower could have some undesired effects, namely:

- Reduction of unique selling position of a company because the products of several companies could apply the same label;
- Discrimination of products for which the producer has not applied for an eco-label of the same product group.

Another influencing factor is the *market structure*: The German and also the European markets for white goods are highly concentrated, “change agents”, who are willing to change existing routines and markets, i.e. who are willing to change the settled structures (e.g. new competitors, new retailers, new networks among producers/retailers) are missing. Also the recent new Asian and Turkish competitors focus on the low-price segment and do not try to apply eco-labels as positive differentiation argument on the market.

The *internationalisation* and (at least) European dimension of trade is supported by the so-called

[1] Asko belongs to the Italian Antonio Merloni Group.

"Platform strategy", i.e. a production strategy which allows producing washing machines all over Europe for different markets and target groups. Producers indicate that this strategy has the consequence that the real target country is not clear and that any assessment of the compatibility with eco-label requirements would be impossible.

5.5.2 Demand side "poor" knowledge as barrier

Producers argue that the first *priority of consumers* is the brand name: "Only the brand counts". Their perception of consumers is that they prefer to stick to the brand and not to environmental characteristics. Innovators on the markets would try to position themselves by price policy and not by environmental features because this is not requested by the demand side. Producers miss intensive marketing efforts and campaigns to increase the knowledge on eco-labels and especially the Flower.

Another, related point is that *consumers* do neither *care for the eco-label nor ask for the criteria* they are based upon. The dominant criteria is either the price at the lower price segment or the brand at the higher price segment.

5.5.3 Missing integrated policy approach

Producers fear that the requirements of the eco-label scheme are perceived as an *unintended agenda setting for environmental policy* and its perception of this product group. They would stimulate policy and environmental stakeholders to consider these criteria as environmental "hot spots". As a consequence, environmental policy tools could be applied. The consequence of an application of the EU-Flower for washing machines could be that they are regarded as an environmentally dangerous product.

In general producers prefer the *energy label*; their experience is that the label is informative to support consumers in their decision-making processes. The preference for the energy label (and also the application of positive test reports of, for instance, the German Stiftung Warentest) is a clear and important barrier for eco-labels: It is perceived that eco-labels inform on similar aspects and do not offer any additional information. Another argument against eco-labels is that they do not consider quality aspects of products whereas the test reports and notes of the Stiftung Warentest consider them.

Beside the energy label, different other labels are applied for washing machines, among them environmental ones, which increase the information overload of consumers. The new framework Directive on *Energy using products* (EuP, Directive 2005/32) will be implemented in the next years and also washing machines are foreseen as a "candidate". In this case, the fulfilment of the requirements – documented by an appropriate sign like "CE" – will "contain" environmental aspects and stimulate additional environmental improvements. It is believed that the right of an eco-label like the Flower to exist will further negatively influenced.

Another influencing factor explaining the present failure of the ISO-type I eco-labels is *insufficient integration* between criteria and environmental targets and the lack of integration of different tools of the toolkit of an Integrated Product Policy. Although the criteria are updated periodically, they do not explicitly refer to national and/or European targets. The European energy label might be interpreted as an exception because the reduction of energy consumption is one important European target. The energy label with its focus on the increase of the energy efficiency corresponds to this.

5.5.4 Characteristics of the Flower as barrier

The *elaborated requirements for the EU-Flower* consider several environmental issues. According to the opinion of the manufacturers they are too widespread and do not concentrate on the most important environmental issues. Some requirements, especially the design and recycling ones, are regarded as unworldly because they prescribe a specific waste policy which is not possible to be realised. The plethora of requirements does not deal with possible trade-offs among the criteria themselves.

Producers hint to the recent *dynamisation of the market* which is characterised by short(er) innovation cycles. Such an innovation/re-design period is short (12 – 18 months) whereas the eco-label requirements are fixed for several years. That means that the requirements are not compatible with the market dynamics. However, often the innovation is more a type of a re-design strategy. That means that the outfit of washing machines is updated, but that the "interior" remains more or less the same. But we think that the domestic appliance industry prefers to prevent any impression of insufficient dynamics.

Costs are another influencing factor for the application of a label. The costs of voluntary eco-label schemes encompass fees for using the label (connected to turnover), testing and verifying costs and also business-internal costs (e.g. staff, brochures). They are regarded by producers as a bottleneck. Some companies refer to the fees, whereas other mention the verifying costs and the necessity to update these things after new models come on the market. In contrast to these costs are the benefits: Producers do not see any economic advantage in using an eco-label. as far as public standing and increase in product sales are concerned.

Another influencing factors is the *format* of the label. The present format of the Flower is considered as a real barrier against their adoption. It is strict and does not inform on the background, i.e. the requirements and the importance of the use phase. In contrast to the Flower, the energy label format is a combination of quantitative, qualitative and ranking information, containing several detailed aspects. Moreover, the energy label focuses on the use phase, i.e. the most critical life cycle phase of household appliances. It is clearly stated that the energy label is an effective product information tool and that this is one major reason for its "success".

5.5.5 The role of stakeholders

A further influencing factor is the *role of stakeholders*. Although NGOs are oriented towards a reduction in energy consumption, specific activities pushing producers to improve their washing machines have not been taken in recent years. If they consider the "washing system" at all, then they concentrate on the textiles and the detergents.

5.6 Conclusions

The main conclusion is that the often claimed "better regulation" need to be applied also for this – "small" – example in a double sense: On the one hand, it is necessary to take care for European consistent requirements, especially on this market of washing machines, that means to harmonise the requirements of the Flower scheme with other national eco-label schemes. On the other hand, the role of the Flower in an integrative policy approach should be reflected.

5.7 Sources

The information on this on-site visit are based on interviews with business representatives and on a former report carried out in this area, namely Rubik, Frieder & Frankl, Paolo (2005): The future of eco-labelling. London: Greenleaf (chapter 5 on washing machines).