

Environmental management systems for the furniture industry



This Guide contains a separate training workshop manual (GG338A) and a slide presentation (GG338B) on a CD-ROM



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This Good Practice Guide was produced by
Envirowise

Prepared with assistance from:

Enviromentor Ltd
BFM Ltd
FIRA International Ltd

Summary

This Good Practice Guide is a practical tool to assist furniture manufacturers to identify, assess and subsequently manage their environmental responsibilities. The Guide will allow you to address specific environmental issues and achieve improved environmental performance through implementing an environmental management system (EMS). This can be either an informal system or one that involves formal certification to a recognised standard such as ISO 14001 or the EC's Eco-Management and Audit Scheme (EMAS).

Whichever route your company chooses, it is worth remembering that a sound and well-conceived EMS is a practical management tool that can help your company to:

- reduce waste and hence operating costs;
- gain a competitive advantage;
- demonstrate compliance with its legal obligations;
- improve its public image.

The Guide explains the various stages of implementing an EMS, with the aid of examples from fictitious companies. The Guide also provides example forms as 12 Microsoft® Word files on a CD-ROM in a pocket at the back. These tools are intended to help you save time and effort when implementing your EMS. Completing the various forms will give you a better understanding of environmental issues at your site. You will also have a head start to collecting the information, records and documents that will form the building blocks for your own EMS. Remember that an EMS is tailored to meet the specific needs of each individual company.

The CD-ROM in the pocket in the back of the Guide also contains an electronic version (as a PDF file) of a training workshop manual (GG338A) to help you stimulate action in your company to implement an EMS. The training programme, which is based on the material in this Guide, contains nine short presentations and four practical exercises. Slides (GG338B) for the presentations are provided as a Microsoft® PowerPoint® 97 file on the CD-ROM. The presentations and slides can be used in full, in part, or customised to your own needs. Handout material for the practical exercises is included in the training workshop manual (GG338A).

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The Guide explains the various stages of implementing an EMS, with the aid of examples from fictitious companies. The Guide and the CD-ROM (included in the back cover) provide practical tools to assist in the process.

- **Example forms** are given as 12 Microsoft® Word files on the CD-ROM. These tools are intended to help you save time and effort when implementing your EMS. Reduced versions of these tools are given in Appendix 4 of this Guide.
- A **training workshop manual (GG338A)** is provided as a PDF file on the CD-ROM. This contains material, based on this Guide, for you to use to train staff on a company, site or departmental basis to help stimulate action to implement an EMS. The manual contains nine short presentations and four practical exercises (handouts for the exercises are included in the training workshop manual).
- The **slide presentation (GG338B)** supporting the material in the training workshop manual is provided as a Microsoft® PowerPoint® 97 file on the CD-ROM. The slide presentation can be used in full, in part, or customised to your own needs.

If you have any problem with the CD-ROM, the Microsoft® PowerPoint® 97 file or the Microsoft® Word files, please contact the Environment and Energy Helpline on 0800 585794.

1.1 How to use this Guide

Successful and cost-effective implementation of an EMS is achieved by following a structured approach. This Guide highlights the benefits of having an EMS and provides step-by-step guidance to the steps involved in implementing an EMS (see Table 1).



Where this symbol occurs, there is an example form with the file name under the symbol.

Form __
____.doc

If you need advice or help on any aspect of environmental management systems, please contact the Environment and Energy Helpline on 0800 585794.

Table 1 *The contents of this Guide*

Section	Title	Purpose
2	The benefits of an EMS	Why have an EMS? This section lists some of the reasons for developing an EMS and the benefits this approach can bring to your business.
3	What is an EMS?	This section describes the framework for an EMS and the steps involved.
4	Planning the implementation	Planning is vital to the success of your EMS. This section tells you how to obtain top-level commitment and how to appoint a company Champion and team. Good communication is important to raise the awareness and motivation of all your staff.
5	The Initial Review	The Initial Review is a key stage on which the rest of the EMS is based. This section tells you how to conduct a review and provides example data sheets.
6	Preparing your environmental policy	The policy is the cornerstone of your EMS and it is important to design this carefully as your customers will want to see it. This section guides you through writing a policy.
7	Environmental aspects and significant impacts	This section explains how to identify your environmental aspects and then assess their significance.
8	Register of Legislation	Compliance with the law is a key part of an EMS. This section tells you how to design a Register of Legislation and gives you an example to follow.
9	Setting objectives and targets	This section explains how to set objectives and targets in order to achieve continual improvement for your company.
10	Operating your EMS	A Management Manual forms the basis of your company's EMS and its documentation. This section describes the contents and lists procedures typically required by a furniture manufacturing company.
11	Audit and certification/verification	This section provides a framework to help you conduct internal environmental audits. It also explains what you need to do to get certification to ISO 14001 or registration to EMAS.
12	What to do next	Use the checklist in this section to make an Action Plan for your EMS. Envirowise can help by providing free publications and expert advice. This section tells you how.

Faced with stricter environmental legislation and pressure from customers to improve their environmental performance, furniture manufacturers are becoming increasingly aware of the cost savings and other benefits which result from establishing continual improvement programmes.

Many furniture manufacturers have previously relied on an ad hoc approach to environmental issues and have tended to consider and address issues such as health and safety, emission limits and waste in isolation. However, there are many advantages to be gained through the adoption of a more integrated approach to managing all these concerns.

Setting up an EMS will provide your company with a framework to control and improve its environmental performance. Your company can either develop its own EMS or follow the guidelines laid down in a recognised national or international standard, such as ISO 14001 or EMAS (see Section 3.1). An EMS will also help you to identify opportunities to reduce waste and lower your operating costs.

2.1 Reasons for implementing an EMS

An EMS provides an integrated approach to managing your company's environmental performance and complying with environmental regulations. An EMS focused on waste minimisation will produce cost savings from reduced waste, scrap, rework and energy. For furniture manufacturers, the key drivers are:

- reducing waste and hence operating costs;
- meeting current and anticipated legislative requirements;
- pressure from customers that are themselves pursuing environmental improvements;
- competition from within the furniture industry;
- concern for the global and local environment.

Table 2 summarises the many potential benefits to furniture manufacturers of implementing an EMS.

Table 2 *The potential benefits of implementing an EMS*

Area of benefit	Potential benefits
Financial	<ul style="list-style-type: none"> ■ Identification of opportunities to reduce waste and thus reduce raw material, utility and waste disposal costs ■ Increased profits ■ Reduced risk of fines for non-compliance with environmental legislation ■ Easier bank loans ■ Attracting shareholders and investors ■ Lower insurance premiums as risks are reduced ■ Retaining site asset value
Production	<ul style="list-style-type: none"> ■ Improved process control ■ Increased yield ■ Reduced use of raw materials and consumables ■ Less waste and rejects
Sales and marketing	<ul style="list-style-type: none"> ■ Improved products ■ Competitive advantage
Management	<ul style="list-style-type: none"> ■ Structured approach to environmental pressures ■ Keeping ahead of environmental legislation ■ Better relations with regulators
Public relations	<ul style="list-style-type: none"> ■ Improved public image ■ Improved relations with local community and environmental groups
Personnel and training	<ul style="list-style-type: none"> ■ Improved working environment ■ Reduced potential for environmental incidents ■ Increased employee motivation and environmental awareness
Peace of mind	<ul style="list-style-type: none"> ■ Complying with legal requirements ■ Avoiding penalties for pollution

2.2 Business challenges

Businesses are facing increasing environmental pressure due to greater public awareness of the environment and tighter regulatory controls. This trend is expected to continue. Coupled with the introduction of director liability (whereby directors, co-directors or managers can be fined or imprisoned for breaches of environmental legislation), there is increasing demand for businesses to manage their environmental affairs responsibly.

Companies operate within an expanding marketplace on a regional, national and international basis. Many manufacturing companies are linked to key customers via the supply chain. At the moment, many suppliers to local authorities are expected to have a basic understanding of their environmental effects and in some cases, must have an EMS in place. In other sectors, customers have asked suppliers to adapt their EMS to follow similar policies and standards as their own. This practice is in response to the public's increased awareness and perception that companies should minimise their impacts on the environment. Consumers are increasingly prepared to exercise choice about the environmental performance of business through the products and services they choose to buy.

2.3 How business responds to the challenges

2.3.1 Industry in general

Many companies have chosen to respond to these challenges and market pressures by developing and implementing an EMS. This has allowed companies to respond in a positive manner while enabling them to reduce costs, gain a better understanding of both market and customer needs, and ensure cost-effective compliance with legislation. An EMS also helps companies to reduce their operating costs through improved efficiency (eg achieved by waste minimisation initiatives), leading to increased profits. Table 3 gives examples of Envirowise Case Studies¹ where companies have achieved cost, efficiency and environmental benefits from such an approach.

¹ Available free of charge through the Environment and Energy Helpline on freephone 0800 585794 or via the Envirowise web site (www.envirowise.gov.uk).

Table 3 *Examples of companies that have benefited from adopting a systematic approach to reducing waste*

Benefits	Case Study	Action
Environmental Financial	GC63	Ulster Carpets recognised that what is good environmentally is also good for the bottom line; the company saved about £13 000/year through waste minimisation initiatives.
Financial Environmental	GC59	The example in this case study could apply to many companies. It addresses the fear that developing an EMS would be expensive. Many senior managers may have this fear and it is a barrier that needs to be overcome. Cost savings of nearly £87 000/year were achieved through various initiatives identified during the Initial Review.
Process improvements Financial Environmental	GC24	Many companies have been able to identify how to make process efficiencies by undertaking an Initial Review of their operations. Amphenol Ltd saved some £98 000/year.
Public relations Financial Environmental	GC20	Mold Hygiene Chemicals Company Ltd was genuinely surprised at the benefits from conducting an Initial Review of its operations. This small company of about 45 employees developed an environmental policy that it used as a marketing tool. Following the Initial Review, Mold Hygiene also saved about £15 000/year from identified improvements.
Compliance Financial Environmental	GC49	Many companies are concerned that, because of the complex and changing requirements of legislation, it is vital for them to demonstrate that they understand how their business affects the environment and that they are complying with relevant legislation. Because an EMS requires companies to document this understanding, it can be a way of demonstrating compliance and leads to peace of mind - as demonstrated by Wolstenholme International Ltd. The company also achieved savings of over £96 000/year.

2.3.2 Examples from the furniture industry

An Envirowise survey of the furniture industry has clearly shown that manufacturers with a certified EMS have experienced many benefits from the process of implementation. All of these companies have made cost savings through improvements to production efficiency and reductions in wastes and emissions. Other benefits have included notable improvements to the local and workplace environment. Having a certified standard has given many companies the confidence to invest in medium and longer-term environmental improvements with the aim of making savings over a number of years. Even if you decide not to go for certification, your company could still realise similar benefits from implementing an EMS.

Fig 1 shows the range of cost and other benefits achieved by the 19 companies certified to ISO 14001 that responded to the Envirowise survey.

Fig 1 Summary of benefits for furniture manufacturers identified by Envirowise survey

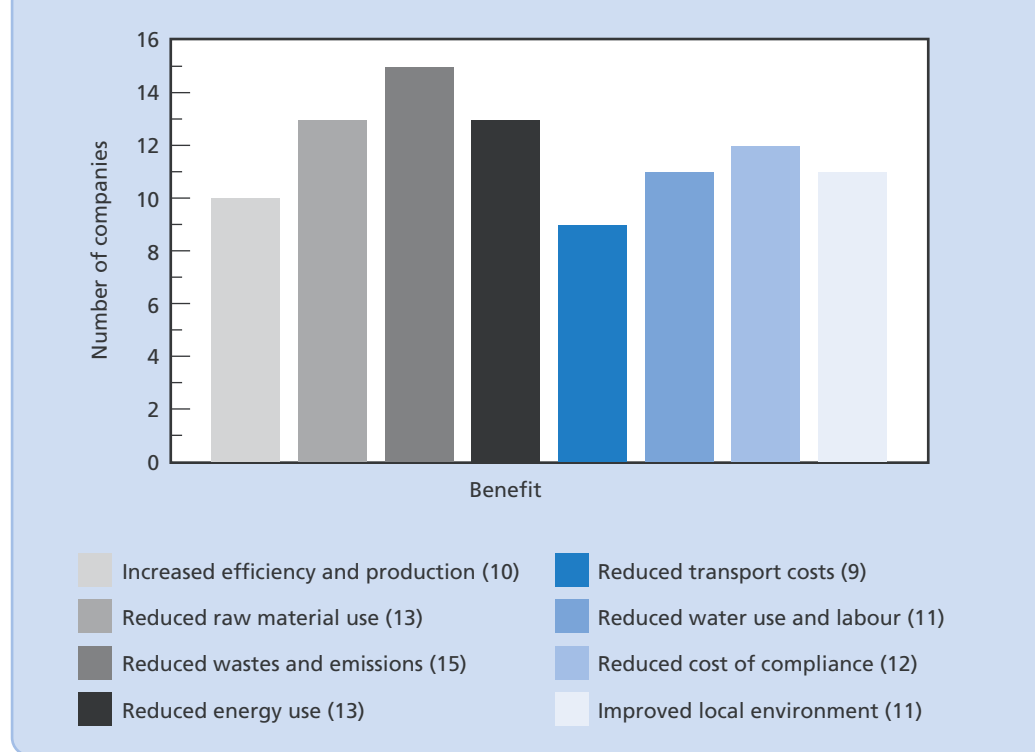


Table 4 shows examples of the benefits achieved by three furniture manufacturers following the implementation of an EMS.

Table 4 Example benefits of an EMS for furniture manufacturers

Company	Processes	Certification to ISO 14001	Benefits
Carlton Furniture Group	Manufacture and installation of office furniture (including metal fabrication).	1996	<ul style="list-style-type: none"> ■ Various cost saving schemes have been introduced, including those to reduce waste and energy. Total estimated savings of £35 000/year. ■ Installation of closed loop refrigeration tank for solvent vapour degreasing to reduce solvent use cost £8 000 but had a payback period of less than a year. Additional benefits have been improved health and safety for staff in the workplace environment.
Richard Burbidge Limited	Manufacture of timber-based products for the DIY market, including stair parts, shelving, etc.	2000	<ul style="list-style-type: none"> ■ Most benefit from waste minimisation projects. These include: <ul style="list-style-type: none"> - optimisation saw to reduce waste to 10%; - briquetting of wood dust for wood-burning boilers; - reduction of waste wood to landfill.
Wallis Office Furniture Ltd	Manufacture of office seating, screens, desks and storage.	1998	<ul style="list-style-type: none"> ■ Significant cost savings achieved, including reduced packaging and transport costs. ■ Conversion from solvent-based lacquers and adhesives to water-based alternatives. ■ Additional benefits from the EMS are: <ul style="list-style-type: none"> - improved housekeeping; - increased awareness of environmental issues by all staff; - improved working environment.

What is an EMS?

Quite simply, an EMS is a systematic approach to managing your company's effects on the environment. It is voluntary, but companies with an EMS have an explicit commitment to continual environmental improvements.

- An EMS is a mechanism for defining environmental responsibilities for all staff, helping them to understand the impact of their activities and their individual actions.
- An EMS ensures that all operations have procedures that minimise their impacts.
- An EMS records environmental performance against set targets.
- An EMS can be audited.

To have an EMS, you need to know your business and understand its impacts on the environment. By knowing how your business operates, you will be able to easily identify how to improve efficiency, reduce costs and improve profits.

3.1 Types of EMS

There are two strategies available to companies wishing to implement an EMS, ie:

- to develop their own in-house EMS;
- to follow the guidelines of the international standard ISO 14001 or the EC's Eco-Management and Audit Scheme (revised in 2001 to EMAS II²).

If they wish, companies can then obtain formal certification to ISO 14001 and/or registration to EMAS. More information can be obtained from the British Standards Institution for ISO 14001 and the Institute of Environmental Management and Assessment (the UK Competent Body) for EMAS (see Appendix 2 for contact details). The Environment and Energy Helpline (0800 585794) can also tell you about the features and requirements of these two standards.

The choice will largely depend on your customers' requirements and if you have an existing management system such as ISO 9001 - a quality management system. However, a formal approach will increase the commitment to continual improvement across the company and to identify opportunities for on-going improvements and cost savings. Achieving one of the international standards may also increase your credibility with customers and suppliers.

The number of companies seeking certification to a formal standard is increasing, mainly due to supply chain pressure. In a recent Envirowise survey of the furniture industry, over half the companies stated that publicly funded customers (eg local authorities) requested an EMS. This process is also starting to gain momentum in the retail sector with Sainsbury's, ASDA and IKEA leading the field. Many suppliers to the retail sector will find it increasingly difficult to do business without an EMS.

3.1.1 Integration with other management systems

There are many links between quality management systems, health and safety management and EMS. Overlaps should be reinforced rather than re-invented. For example, the revision of ISO 9000 in 2000 included the concept of continual improvement. This is part of ISO 14001 and

² See www.emas.org.uk for details of EMAS II.

EMAS. Organisations that are already considering integrated management systems may want to consider this option. Remember to think about your company's own needs and those of your customers and stakeholders.

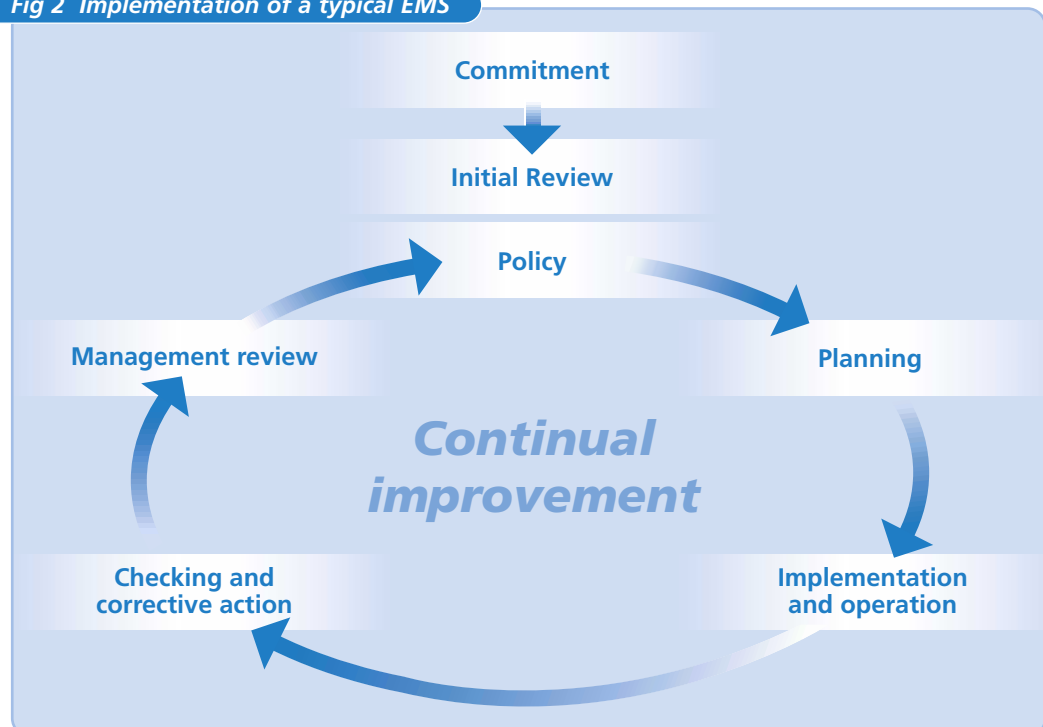
3.2 What an EMS involves

Regardless of whether your company decides to take a formal or informal route, an effective EMS includes:

- an assessment of which of your company's activities, products, processes and services might affect the environment;
- development of an environmental policy;
- an environmental improvement programme;
- roles and responsibilities for all employees;
- a training and awareness programme;
- written procedures to control activities with a significant environmental impact;
- a controlled system of records;
- periodic auditing of the system to ensure effective operation;
- a formal review of the EMS by senior management.

Fig 2 shows the various stages of implementation of an EMS. Additional requirements for ISO 14001 and EMAS include the production of a formal environmental policy, a mechanism to ensure compliance with legislation, the preparation and external validation of an Environmental Statement (EMAS only) and a commitment to continual improvement.

Fig 2 Implementation of a typical EMS



Contact the Environment and Energy Helpline on 0800 585794 for free information and guidance to help you implement an EMS in your company.

Planning the implementation

Once your company has decided to implement an EMS, the first step is to establish the resources and commitment required. Planning is vital to the success of all types of EMS.

4.1 The importance of top-level commitment

Although an EMS needs to be adopted at all levels within the company, its effectiveness will depend on the level of commitment from the managing director and other senior staff. Before starting to design the system, it is therefore essential to obtain the full commitment of senior management to the aims and objectives of your EMS.

Senior management commitment is vital to:

- ensure sufficient time and resources are available to implement the EMS;
- achieve continual environmental improvement and savings;
- ensure all staff work together in a positive manner to achieve maximum benefits from the EMS.

It is also important to involve senior managers when providing feedback to staff and in the reporting process.

4.2 Getting senior management commitment

It is important that senior managers understand the aims of the EMS and the business benefits from adopting a structured approach to managing the environmental impacts of your company's activities.

One of the best ways of securing commitment is to estimate the potential cost savings from adopting an EMS. For example, calculate the annual cost of utilities (water, gas and electricity) for your company for the previous 12 months. As a general rule, it should be possible to reduce these costs by 10 - 20% using the approach of an EMS without the need for any capital investment. Waste minimisation can lead to cost savings in excess of your waste disposal costs due to savings in raw materials.

4.2.1 Common barriers

It is a common misconception that an EMS costs money. In practice, it usually leads to substantial cost savings. For example, waste minimisation opportunities are often a direct result of the implementation of an EMS. This is because reducing waste at source leads to a reduced environmental impact. In many companies, targets for waste minimisation are also closely linked to performance indicators for continual improvement. Low-cost waste minimisation initiatives typically save companies up to 1% of business turnover.

Lack of time and resources are two common barriers in smaller companies. However, the recent Envirowise survey found that the greatest obstacle to environmental improvement was lack of knowledge about practical tools for implementing an EMS.

4.2.2 Overcoming barriers

There is no standard formula for overcoming these barriers - each company is different. However, sources of help are available (see Section 4.6.2 and Appendix 2). For example,

Envirowise provides free expert advice, an on-site waste review (*FastTrack* visit) and publications for self-help and guidance with an EMS.

To overcome some of these common barriers, start by estimating the potential cost savings your company could make from adopting an EMS. A recent Envirowise survey³ found that over 80% of UK companies believed that improving environmental efficiency led to real benefits in profitability, including:

- reduced costs (26%);
- increasing or safeguarding sales by improving the company's image with customers (14%);
- improving the work environment with a corresponding higher productivity and lower staff turnover (14%).

A recent FIRA survey of 40 furniture companies found that those certified to ISO 14001 had lower waste costs than those without an EMS. Companies without an EMS spent an average of 3.6% of turnover on waste disposal compared with 2.5% of turnover for those companies certified to ISO 14001, ie a reduction of 1% of turnover. Implementing an EMS could also reduce your water and effluent costs by 20% or more, and your energy bills by 10%.

4.3 The company Champion

The EMS will interface with manufacturing, quality control, training, health and safety, and purchasing operations within your company. It is, therefore, important to involve a range of people in the implementation process, particularly when the EMS overlaps with their roles or functions. However, it is essential to make one person act as Champion and responsible for co-ordinating the implementation. Under ISO 14001, the person responsible for co-ordinating the Initial Review and then implementing and maintaining the EMS is described as the Management Representative.

Although the Champion is the key focal point for communication, it is the project team(s) that will actually achieve results. Appointing a Champion and involving teams at an early stage help to increase staff awareness at all levels and motivate individuals to take action and participate.

The size, nature and culture of a company all contribute to deciding whom to appoint as Champion. Large companies usually appoint a Champion who has held a range of positions and who is familiar with the staff, processes, and technical, quality and environmental issues. In such companies, the Champion may well be the environmental manager.

It is important to choose the right person to be the Champion but, provided the key characteristics below are met, the area or level of the company the Champion comes from is not critical. The Champion needs to have:

- enthusiasm for the role and a willingness to learn;
- credibility at all levels of the company;
- communication skills to organise resources, meetings and training;
- the ability to motivate staff, overcome barriers, resolve problems and maintain progress;
- the ability to communicate with all levels of staff and to provide feedback.

³ The survey results are summarised in *Attitudes 2000* (EN305), available free of charge through the Environment and Energy Helpline on freephone 0800 585794 or via the Envirowise web site (www.envirowise.gov.uk).

For more advice about project teams and Champions, ask the Environment and Energy Helpline for a free copy of *Saving Money Through Waste Minimisation: Teams and Champions* (GG27).

4.4 The environmental management team

The Champion is responsible for appointing and co-ordinating the efforts of a small team set up to implement and operate the EMS. This team should agree the key aims, adopt a collaborative approach and share out the work.

- The Champion should lead and co-ordinate the team, with the managing director providing top-level commitment.
- To ensure progress is made, team members must be allocated sufficient time and resources.
- Regular meetings, short action plans and target dates for completing allocated tasks will keep the implementation phase on track and ensure smooth operation of the EMS.
- Involve employees from all levels of the business. This will ensure that opportunities for reducing impacts and saving money will be owned and implemented by everyone.
- Consider setting up separate teams to tackle areas such as waste minimisation, packaging use, water use and energy efficiency.

4.4.1 Team membership

The team set up to operate the EMS should include everyone with direct responsibilities within the EMS, although the individuals and their level of involvement will depend on the company.

Ideally, teams should be cross-functional - people with different roles and experiences will bring different skills and ideas. This approach can also be beneficial when implementing improvements; it makes it easier to overcome barriers to change and staff can work together to implement solutions that are acceptable to everyone.

People working in different departments are often not aware of the needs of others. Staff awareness and understanding are improved by working together. This, in turn, can lead to the identification of further opportunities for cost savings and environmental improvements.

4.5 Communicating with employees

Effective methods of communication vary in companies - each is different. Make sure that you choose the most appropriate methods to suit your company's needs.

- Many companies find that the most effective publicity is through a small presentation or agenda item during regular team briefings and management meetings. This means that the EMS is not seen as a separate initiative but as an integral part of the company's operations.
- Simple written communication via notice-boards and posters can be an excellent way to raise initial awareness about the EMS and to report progress.
- Use of electronic communications, including e-mail and intranet, is increasingly popular and offers quicker and easier access to information - saving both time and money.
- Whichever means of communication is best for your company, make sure that staff are always asked for ideas and give feedback on improvements and savings.

Poor staff awareness is a common barrier that prevents progress and needs to be overcome by teams and Champions. It is important to raise awareness to stimulate staff participation and encourage others to become involved. To raise awareness, staff need to know the benefits and how the programme applies to them as individuals. Make sure you identify with their needs to help convince them to participate and to share ideas for targets and improvements.

Poor staff motivation is another barrier, which can exist even when staff are aware of the benefits of an EMS. A key role of the Champion is to motivate staff to generate ideas for environmental improvements. Savings are often made through employee suggestion schemes, particularly where feedback on successes and achievements helps to maintain enthusiasm. The key task of the Champion is to provide incentives to staff to generate motivation.

The more involved your employees are in the EMS, the more committed they will be and the easier it will be to implement the system effectively.

Remember the four Cs for the successful implementation of your company's EMS.

- **Commitment** - gain support for the EMS at all levels within the company through good communications.
- **Continuity** - ensure the system remains running once it has been established.
- **Continual improvement** - continually reduce the company's significant impacts.
- **Communication** - enhance the scope within your company and with customers and suppliers.

4.6 Resources

4.6.1 Internal resources needed

The time taken to implement an EMS is typically 12 - 18 months, but will vary depending on the individual company. Remember that other business pressures may take precedence and try to plan around them. This is why there is no standard timescale for developing an EMS. Before implementing your EMS, it is important that you spend some time considering what you will need in terms of time and other resources to establish an effective EMS. The approximate timescales for implementing an EMS are shown in Table 5.

Table 5 *Approximate timescales for implementing an EMS at a furniture manufacturing company*

Element	Time taken
Planning (including the Initial Review, developing an environmental policy, identifying significant environmental aspects and preparing the Register of Legislation)	4 days
Designing (including developing the Management Manual)	20 days
Operating and auditing	16 days/year

4.6.2 External resources available

Appendix 2 contains contact details for a range of organisations that may be able to help with your company's EMS. Some examples are given below.

- Envirowise can provide free site visits, free publications and free electronic tools to aid EMS implementation. For more information, contact the Environment and Energy Helpline on freephone 0800 585794.
- The Club Green initiative is a joint project set up by FIRA and TRADA to provide a service on environmental matters for furniture manufacturers. This includes a structured approach for trade members seeking to attain ISO 14001. To join Club Green, contact FIRA.
- Funding may be available for some companies through a number of organisations, including Business Link, through Diagnostic Consultancy Services funding, and Business in the Environment. Typically, up to 50% of the costs can be met depending on initiatives in the local area.
- A number of commercial products and services are available to companies. A comprehensive list can be obtained from the Institute of Environmental Management and Assessment (IEMA).
- The British Standards Institution (BSI) offers a range of electronic products to assist in the implementation of an EMS. Copies of ISO 14001 are also available from BSI.

The Initial Review

The two main aims of an EMS are to:

- achieve continual improvement in environmental performance;
- secure legal compliance.

Improvements can be demonstrated only if a company knows what its performance was when it started out. Legal compliance can be achieved only if the company knows which legislation is currently or potentially relevant. The initial or preparatory review addresses both areas - thus forming a key stage upon which the rest of the EMS will be based.

5.1 Purpose of the Initial Review

Carrying out an Initial Review gives you the opportunity to take a strategic overview of your company's attitude to the environment. The process will help you to:

- prepare your environmental policy (see Section 6);
- identify environmental aspects and significant environmental impacts (see Section 7);
- identify relevant legislation (see Section 8);
- set objectives and targets for improvement (see Section 9).

The Initial Review will help you to implement either an informal or a certified EMS. While carrying out the review, record what actually happens in all operational areas and during all site activities. Remember, the purpose of the review is to identify the ways in which your company's operations have an impact on the environment.

The Initial Review also provides a base-line - showing the point from which the company is starting. It typically involves a number of people conducting desk-based and site-based investigations into all environmental issues.

5.2 Activities, aspects and impacts

Areas of operation can typically be broken down into **activities**, eg woodworking, storage and wood coating. Each activity will give rise to a number of **aspects**. **Environmental aspects** are any element of an organisation's activities, products or services that can interact with the environment. Examples include the release of dust from the activity of woodworking and the release of volatile organic compounds (VOCs) from solvent-based coating processes.

In turn, each aspect may lead to a number of **environmental impacts** - any change to the environment resulting from an organisation's activities, products or services. An impact can be adverse or beneficial. Examples include the contribution to the creation of ground level ozone and a potential contribution to global warming resulting from the release of VOCs.

One output from the Initial Review is a list of environmental aspects for your company.

5.3 Gathering data

The main tasks during an Initial Review are data gathering and analysis. Relevant data may be held by different managers and operators, so consider developing worksheets to record information about different environmental aspects covering the site and its history, raw materials, utilities, wastes and emissions.

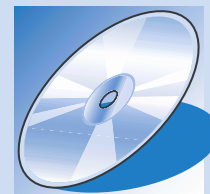
- Example worksheets for a fictitious furniture manufacturing company are shown in Fig 3 and blank forms (see Appendix 4) are provided on the CD-ROM in the back pocket of the Guide as a Microsoft® Word file (Form 01 Initial Review) for you to use and adapt as necessary. Your company may not have or need all this information, so use the documents that are relevant and available.
- For an environmental review to be effective and to ensure easy auditing, keep copies of all the documents and file them for future reference.
- The review process is designed to identify environmental aspects and generate information that will allow their significance to be assessed (see Section 7.4). Quantitative information will aid the subsequent evaluation, as well as allowing progress on future targets to be demonstrated.
- When conducting the review, remember that environmental harm is often more severe when the unexpected happens. You, therefore, need to consider both normal and abnormal operating conditions (eg factory start-up after a holiday shutdown).
- Using a review team can help to generate ownership of the EMS during its formative stages. Team input will also ensure the identification of a wide range of issues and improvement ideas.
- ISO 14001 makes a number of specific requirements with regard to the issues that must be covered by the review. These include considering all existing environmental management practices and procedures (both good and bad). Attention must also be paid to previous incidents.
- Some companies prefer to use external people as a 'fresh pair of eyes'. A free and confidential counselling visit from an independent Envirowise consultant could help you to conduct an Initial Review in your company.
- You will need to identify legislation and codes of practice applicable to your site. Appendix 1 has a list which may apply to furniture companies or visit the NetRegs web site of the Environment Agency (www.netregs.environment-agency.gov.uk).

5.3.1 Documents needed for an Initial Review

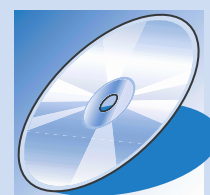
These include:

- purchasing records;
- gas, electricity, water and vehicle fuel bills;
- waste disposal records;
- process authorisations;
- consents to discharge to sewer or to controlled waters;
- complaints and incident records;
- details of any breaches and prosecutions.

A checklist of all possible documents is provided at the beginning of Form 01 Initial Review on the CD-ROM. Your company may not have, or even need, all this information. This checklist allows you to indicate applicability/availability and to record who holds the document(s).



Form 01
Initial Review.doc



Form 01
Initial Review.doc

Fig 3 Example worksheets used by a fictitious furniture company for its Initial Review

INITIAL REVIEW - SITE	
Company: <i>Timberwise Furniture Manufacturers</i>	
Completed by: <i>J Smith</i>	Date: <i>12/12/01</i>
1 What are the main processes undertaken on the site?	
<i>Timber conversion</i>	<i>Machining/sanding</i>
<i>Assembly</i>	<i>Coating</i>
<i>Packing</i>	<i>Distribution</i>
2 Site history	
When was the site acquired? <i>1982</i>	
What expansions/changes of use have occurred since the site was acquired?	
<i>Construction of extraction system, boiler plant and silo. Placement of timber storage area on previously unused ground.</i>	
Has there been any known contamination of the site? (give details)	
<i>No - previous owner used the site for warehousing, prior to that it was a greenfield site.</i>	
Has a contaminated land survey of the site ever been undertaken? (give details)	
<i>No</i>	
3 Have there been any major accidents/spillages since the site was acquired? (give details)	
<i>1995 Fire in dust extraction silo, believed to be due to a spark from a nail entering the extraction system. Fire brigade attended and dealt with fire.</i>	
<i>1998 Spillage of 25 litres of waste thinners temporarily stored outside the coating shop. Material was contained by low bund wall and cleaned up.</i>	
4 Has the company received any formal warnings or been prosecuted for breaches of consents or environmental legislation? (give details)	
<i>No</i>	
5 Has the company received any complaints from members of the public regarding site operations? (give details)	
<i>Occasional complaints over noise from extraction plant. Modifications and cladding have been used to reduce noise levels.</i>	

Fig 3 Example worksheets used by a fictitious furniture company for its Initial Review

INITIAL REVIEW - UTILITIES			
Company: <i>Timberwise Furniture Manufacturers</i>			
Completed by: <i>J Smith</i>		Date: <i>14/12/01</i>	
Obtain the most recent 12 months' consumption and cost data from monthly or quarterly invoices. If you have more than one supplier of electricity, gas, water, etc add these up to give a total figure.			
1	Electricity		
	Annual consumption:	<i>1 827 516 kWh</i>	
	Unit cost:	<i>5.02 pence/kWh</i>	
	Annual cost:	<i>£91 741.30</i>	
	Major uses:	<i>Machinery, lighting, compressed air and offices</i>	
2	Gas		
	Annual consumption:	<i>255 567 kWh</i>	
	Unit cost:	<i>1.23 pence/kWh</i>	
	Annual cost:	<i>£3 143.47</i>	
	Major uses:	<i>Supplementary heating</i>	
3	Mains water	When considering water costs, include the cost of disposing of the water to sewer (as trade effluent) as well as the cost of the incoming water supply. Both costs are shown on your water bill.	
	Annual consumption:	<i>2 903 m³</i>	
	Cost of water supply:	<i>62.0 pence/m³</i>	
	Cost of trade effluent:	<i>65.0 pence/m³</i>	
	Annual cost:	In	<i>£1 800</i>
		Out	<i>£1 887</i>
		Total	<i>£3 687</i>
	Major uses:	<i>Toilets, washbasins and kitchen</i>	
	Any abstracted water, eg from boreholes:	<i>No</i>	
4	Vehicle fuels	Include different types of fuel (eg petrol, oil and LPG) used for vehicles including fork-lift trucks, all cars/commercial vehicles and that used for generators.	
	Fuel	Amount	Unit cost Total annual cost
	<i>Diesel</i>	<i>189 800 litres/year</i>	<i>78 pence/litre</i> <i>£148 044</i>
	<i>Unleaded petrol</i>	<i>24 900 litres/year</i>	<i>77 pence/litre</i> <i>£19 173</i>
	Total		<i>£167 217</i>

Fig 3 Example worksheets used by a fictitious furniture company for its Initial Review

INITIAL REVIEW - INVENTORY OF RAW MATERIALS			
Company: <i>Timberwise Furniture Manufacturers</i>			
Completed by: <i>J Smith</i>		Date: <i>18/12/01</i>	
List all major raw materials used and stored on site.			
Raw materials	Annual consumption	Storage method	Storage location
<i>Board material</i>	<i>1 200 m³</i>	<i>Stacks</i>	<i>Timber store</i>
<i>Beech</i>	<i>150 m³</i>	<i>Pallets</i>	<i>Timber store</i>
<i>Wood coatings</i>	<i>9 500 litres</i>	<i>Drums</i>	<i>Coating store</i>
<i>Packaging cardboard</i>	<i>27 tonnes</i>	<i>Pallets</i>	<i>Packing department</i>
<i>Adhesive</i>	<i>780 litres</i>	<i>Drums</i>	<i>Central store</i>
<i>Wooden components</i>	<i>27 tonnes</i>	<i>Metal stillages</i>	<i>Central store</i>
<i>Fabric</i>	<i>345 rolls</i>	<i>Rolls</i>	<i>Upholstery department</i>

Fig 3 Example worksheets used by a fictitious furniture company for its Initial Review

INITIAL REVIEW - SOLID WASTES					
Company: <i>Timberwise Furniture Manufacturers</i>					
Completed by: <i>J Smith</i>			Date: <i>28/12/01</i>		
1 Major sources and types of solid waste					
Description	Source	Storage method	Quantity	Disposal route	Cost
<i>Wood dust</i>	<i>Wood-working</i>	<i>Silo</i>	<i>98 tonnes/year</i>	<i>Wood burner</i>	<i>-</i>
<i>Off-cuts</i>	<i>Wood-working</i>	<i>Chipped and stored in silo</i>	<i>568 tonnes/year</i>	<i>Wood burner</i>	<i>-</i>
<i>Packaging</i>	<i>Goods in</i>	<i>Skip</i>	<i>23 tonnes/year</i>	<i>Landfill</i>	} <i>£2 780 /year</i>
<i>Packaging</i>	<i>Returned goods</i>	<i>Skip</i>	<i>5 tonnes/year</i>	<i>Landfill</i>	
<i>Office waste</i>	<i>Offices</i>	<i>Skip</i>	<i>6 tonnes/year</i>	<i>Landfill</i>	
<i>Empty coating tins</i>	<i>Coating shop</i>	<i>Skip</i>	<i>2 tonnes/year</i>	<i>Landfill</i>	
<i>Scrap</i>	<i>Maintenance</i>	<i>Skip</i>	<i>5 tonnes/year</i>	<i>Recycling</i>	<i>No cost</i>
2 What actions have been taken to reduce resource use and solid waste production? (give details)					
<i>Wood off-cuts re-used in smaller component manufacture.</i>					
<i>Cutting patterns used for fabric and wood optimised to minimise off-cuts.</i>					
<i>Where possible, raw materials purchased in re-usable packaging.</i>					
3 Does the site use licensed waste disposal contractors? (give details)					
<i>Yes - copies of carrier registration certificates, transfer notes/consignment notes retained for:</i>					
<i>General Skips Limited</i>					
<i>Metal Merchants Limited</i>					
4 Is the performance of the waste contractors monitored? (give details)					
<i>No</i>					

Fig 3 Example worksheets used by a fictitious furniture company for its Initial Review

INITIAL REVIEW - EMISSIONS TO ATMOSPHERE				
Company: <i>Timberwise Furniture Manufacturers</i>				
Completed by: <i>J Smith</i>			Date: <i>14/12/01</i>	
1 Provide details of the major types and sources of emissions to atmosphere, eg gases, solvent fumes, dust, steam and noise				
Description	Source	Quantity	Disposal route	Legal details
VOCs	Wood coating	5.8 tonnes/year	Atmosphere	PG6/33 authorisation
VOCs	Adhesive	1 tonne/year	Atmosphere	Covered under PG6/33 authorisation
Noise	Extraction	Not known	Atmosphere	Controls implemented to comply with EPA Part III (statutory nuisance)
Carbon monoxide	Boiler plant	130 mg/m ³	Atmosphere	PG1/12 authorisation
Particulate	Boiler plant	170 mg/m ³	Atmosphere	PG1/12 authorisation
Formaldehyde	Boiler plant	Not measurable	Atmosphere	PG1/12 authorisation
2 What actions have been taken to reduce the amounts emitted? (give details)				
<i>Low solvent and water-based coatings used to reduce the amount of VOCs emitted from wood-coating operations.</i>				
3 Does the site possess any air pollution control equipment, eg extractors? (give details)				
<i>Filter bag abatement equipment fitted to dust extraction systems to eliminate wood dust emissions.</i>				
4 Are emissions monitored? (give details)				
<i>Exhaust gases from wood burning boiler monitored to comply with environmental legislation.</i>				

Preparing your environmental policy

Once the Initial Review is complete, your company will be in a good position to write an effective environmental policy. The review is an important step to help you gain a better understanding of your site's environmental impacts and the relevant issues that will need to be addressed within the environmental policy.

6.1 What is an environmental policy?

An environmental policy is a written statement outlining your company's mission in relation to managing the environmental impacts of its operations. The policy is the driving force behind the objectives, targets and Management Programme of your EMS. The policy:

- states the company's aims and objectives and forms the basis for its EMS;
- allows management to communicate its aims and objectives to employees and other interested parties, including shareholders, customers and suppliers.

In the case of a multi-site operation, there may be a number of group or divisional operating statements which, when combined, represent the view of the holding company.

The written policy needs to:

- be specific to your company and its environmental impacts;
- address issues that are only relevant to your business activities.

Even if your company is not intending to adopt a formal EMS, it is worthwhile designing your policy carefully as customers will want to see it. For companies intending to obtain certification to ISO 14001 or registration to EMAS, the environmental policy is the cornerstone of the EMS's development and implementation.

The order followed by ISO 14001 places writing a policy before identifying significant aspects and legislation. However, many companies complete these stages before finalising the environmental policy. This ensures that the policy is reasonable and practical for a company's business activities.

6.2 How to write the policy

Writing an environmental policy is a voluntary undertaking in the UK and the structure and content are not regulated under UK legislation. The policy should be:

- Communicated to all staff, contractors and suppliers.
- Made available to customers, shareholders, other stakeholders and the public.
- Reviewed regularly and, if necessary, revised to take account of developments in your EMS and significant changes to your business activities or operations. Start by reviewing the policy after the first six months of operation of the EMS and then annually.

For companies intending to obtain certification to ISO 14001 or registration to EMAS, it is important to be aware of the guidance notes when preparing your environmental policy. ISO 14001 and EMAS specify that the environmental policy must include commitments to legislative compliance and continual improvement. The policy must also be communicated to all staff and

contractors, and be available to customers and the public. The example policy shown in Fig 4 meets the requirements of ISO 14001.

There is no standard format for writing an environmental policy, but the style should reflect your organisation's culture. If your business is closely linked to key customers through the supply chain, a good starting point is to obtain a copy of their environmental policies and ensure that your policy reflects their requirements and needs. Look at examples of policies written by other companies and select the format and style most appropriate to your own.

- Be realistic and practical for your business - compare what you actually do with what the policy says you will do.
- Keep the policy short - if it is longer than an A4 sheet, then it is probably too long.
- The policy is meant for everyone to see, so make sure it is easy to read and understand.
- The policy must be realistic, achievable and relevant to your company's activities and practices.
- To demonstrate commitment to making the policy work, get the policy signed, dated and endorsed by the managing director, chief executive or another senior manager.
- State the review period.

For more information about writing an environmental policy, see *How to Develop an Environmental Policy: A Guide for Small Printing Companies* (EN322). Although aimed at small printers, this leaflet provides practical advice to help all companies from all sectors develop a meaningful environmental policy. To obtain a copy, contact the Environment and Energy Helpline on 0800 585794 or visit the Envirowise web site (www.envirowise.gov.uk).

Fig 4 Example environmental policy from Layezee Beds

LAYEZEED BEDS

Environmental Policy

- Layezee Beds manufactures divans and mattresses for the UK bedding market. Our principal activities include the processing of timber, fillings, steel wire and fabric into our finished product which we then deliver to our customers on our own fleet of vehicles.
- We attach maximum importance to matters concerning the environment. Our policy is to meet and, where practical, exceed all relevant regulatory and other requirements and to minimise any adverse environmental aspects caused as a result of our activities or products.
- We will continually assess the environmental impact of our operations and, through minimising the use of materials and resources, we will reduce our wastage to the lowest practical level.
- Products will be designed in such a way as to minimise their environmental aspects in production, usage and disposal. Consideration will always be given to the environmental effects of our raw materials sourcing and, wherever possible, we will use materials and components that can be recycled.
- Through strategic planning, we will minimise the environmental effect of new developments and aim to include environmental considerations in investment decisions.
- Employee involvement in environmental matters is encouraged at all levels and will be promoted through training, communications and a constant reappraisal of working methods and techniques.
- Our environmental management system, which applies to all our activities, provides for the setting of objectives and targets and it is our aim to secure continual improvement in environmental performance and prevention of pollution. Copies of our environmental objectives can be obtained by telephoning the company on Tel: [phone number].
- The Board of Directors is committed to the implementation of this policy and will give full backing to all those authorised to carry it out. This policy is available to the public on request.

[signature]

Managing Director, Layezee Beds

[date]

Environmental aspects and significant impacts

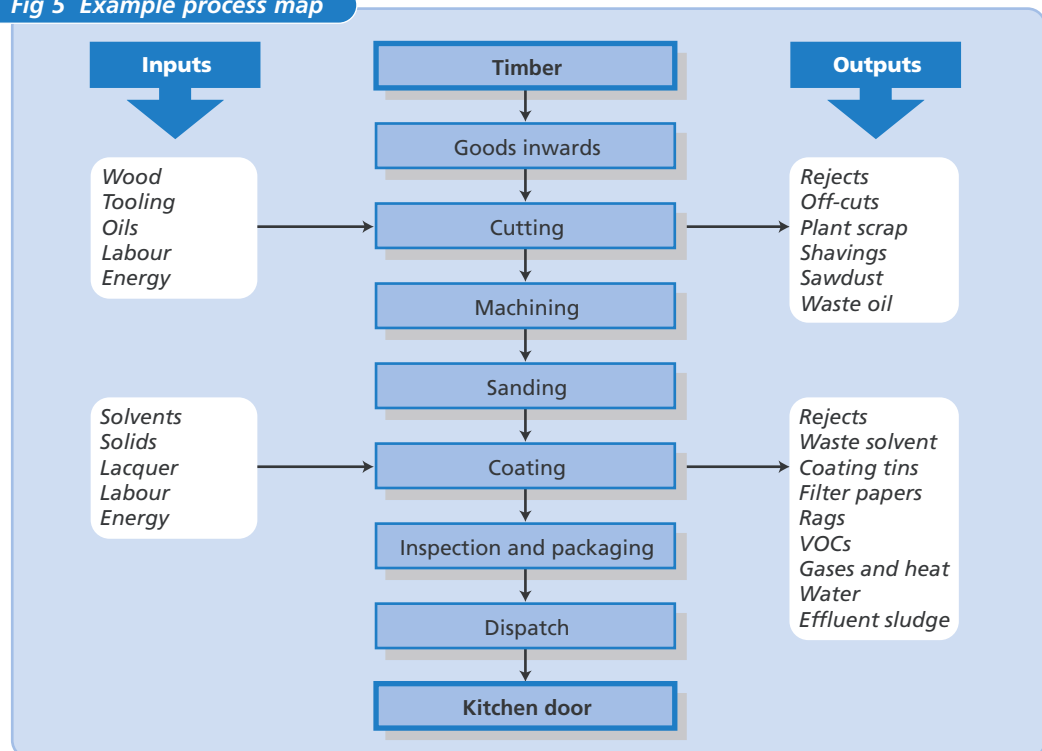
Identifying and understanding how your company interacts with the environment will help you to develop an effective EMS to reduce waste and improve your environmental performance. This Section explains how to identify your environmental aspects and then assess their significance. The method for evaluating significant impacts is crucial to the effectiveness of any EMS - regardless of whether or not it has been designed to meet the criteria required for ISO 14001 or EMAS. Analysis of the information gathered during the Initial Review (see Section 5) will provide a starting point for this stage of the EMS.

7.1 Identifying site activities and processes

Start by listing all the business functions, and site and office activities that cover the various departments on your site, eg assembly, wood coating and stores. It is also important to include upstream and downstream activities such as goods in, assembly, packaging and disposal.

Present this information visually to construct a process map (see Fig 5). For each process, add the inputs (raw materials, labour, energy) and outputs (wastes and emissions). Remember to consider emissions to air, water and land - however small they might be. The process map will help you to identify all of your environmental aspects and highlight areas of your operations with opportunities to save money by reducing waste.

Fig 5 Example process map



For more information about process mapping see *Waste Mapping: Your Route to More Profit* (ET219) and *Savings from Waste Minimisation in Furniture Manufacturing* (GG290), available free of charge through the Environment and Energy Helpline on freephone 0800 585794 or via the Envirowise web site (www.envirowise.gov.uk).

7.2 Identifying environmental aspects

From your process map, you can decide which inputs and outputs interact with the environment and are, therefore, environmental aspects.

Environmental aspects and impacts are defined in Section 5.2. Typical environmental aspects for a furniture manufacturer include:

- emissions to air, eg release of VOCs from coating timber;
- releases to water, eg site drainage;
- waste management, eg wood dust/shavings and landfill gas;
- contamination of land, eg spillage of fuel oil used for heating;
- use of raw materials, eg process energy consumption;
- local environmental and community issues, eg noise from extraction systems.

A checklist (Form 02 Aspects Checklist) for identifying environmental aspects is provided on the CD-ROM in the back pocket of the Guide and it is shown in Appendix 4.

- The assessment process should also consider normal operating conditions, shutdown and start-up conditions, and any potential impacts associated with reasonably foreseeable or emergency situations.
- Remember to include any aspects that may not be covered by legislation - they may still be significant. Environmental aspects can also include measures you have already taken to prevent or reduce pollution.
- The process is intended to identify significant environmental aspects associated with activities, products or services and is not intended to require a detailed life-cycle assessment.
- You do not have to assess each product, component or raw material for your organisation, but may select categories of activities, products or services most likely to have a significant impact.

7.3 Identifying the impacts of your aspects

Environmental aspects are the cause of environmental impacts. An aspect can have more than one impact and many aspects have indirect impacts. For example, the use of electricity supplied by the National Grid (an aspect) has three indirect impacts:

- climate change due to carbon dioxide emissions from fossil fuel-fired power stations;
- air pollution from acid gas emissions;
- resource depletion through fossil fuel use.

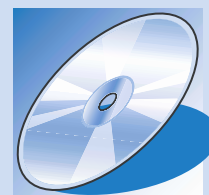
Use the blank form (Form 03 Aspects Register) provided on the CD-ROM in the back pocket of the Guide and shown in Appendix 4 to record environmental aspects and their associated impacts for your company. Extend this form as necessary to suit your circumstances. You can also use it to record whether you consider the aspect and its related impacts to be significant for your company (see Section 7.4) and to indicate links to your Management Manual of your EMS (see Section 10).

7.4 Significance of aspects and impacts

Having established which aspects can have an impact on the environment, the next task is to assess which are **significant for your company**. Those that you judge to be significant are the ones that you are going to manage through your EMS.



Form 02
Aspects
Checklist.doc



Form 03
Aspects
Register.doc

Many furniture manufacturers normally consider aspects that apply to one or more of the following to be significant:

- **Legislation** - are the aspect and its resulting impacts covered by legislation?
- **Policy** - are the aspect and its resulting impacts specifically mentioned in the environmental policy?
- **Impacts** - are the potential impacts serious and what is the likelihood of them actually happening?
- **Procedures** - is the aspect currently controlled by documented procedures?
- **Cost** - would the impact have serious adverse financial implications for the business or are there potential cost savings associated with managing the aspects?

The information gathered in your Initial Review (see Section 5) should tell you which activities are covered by legislation and/or have a high cost. Your analysis of these data should help you to identify those areas where your activities may have a high environmental impact.

As well as quantifying the environmental aspect, the following criteria can help your judgement:

- the scale of the impact;
- the severity of the impact;
- the probability of occurrence (not always relevant);
- the duration of the impact;
- potential regulatory and legal exposure;
- the difficulty and cost of changing the impact;
- concerns of interested parties;
- the effect on the public image of your company.

Companies often find compiling their list of environmental aspects and impacts and assessing significance the most difficult stage of implementing an EMS. If you need further help, contact the Environment and Energy Helpline on freephone 0800 585794 for free advice.

7.5 Methods of assessing significance

There is no set or prescribed method for assessing the significance of environmental impacts. There are various techniques to assess significance - **you should choose the approach that is the most appropriate for your company**. The key to success is to:

- develop a method which is tailored to the particular circumstances of your company;
- develop a consistent approach that allows each issue to be treated in the same way;
- be able to demonstrate your methodology.

Whichever method you decide to use to evaluate significance, it is important to record the reasons for your decision.

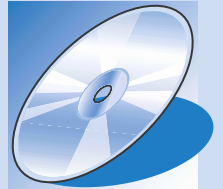
Two methods that companies have used successfully are outlined below.

7.5.1 Flow diagram

As a simple rule of thumb, many organisations consider that an environmental impact is significant if it:

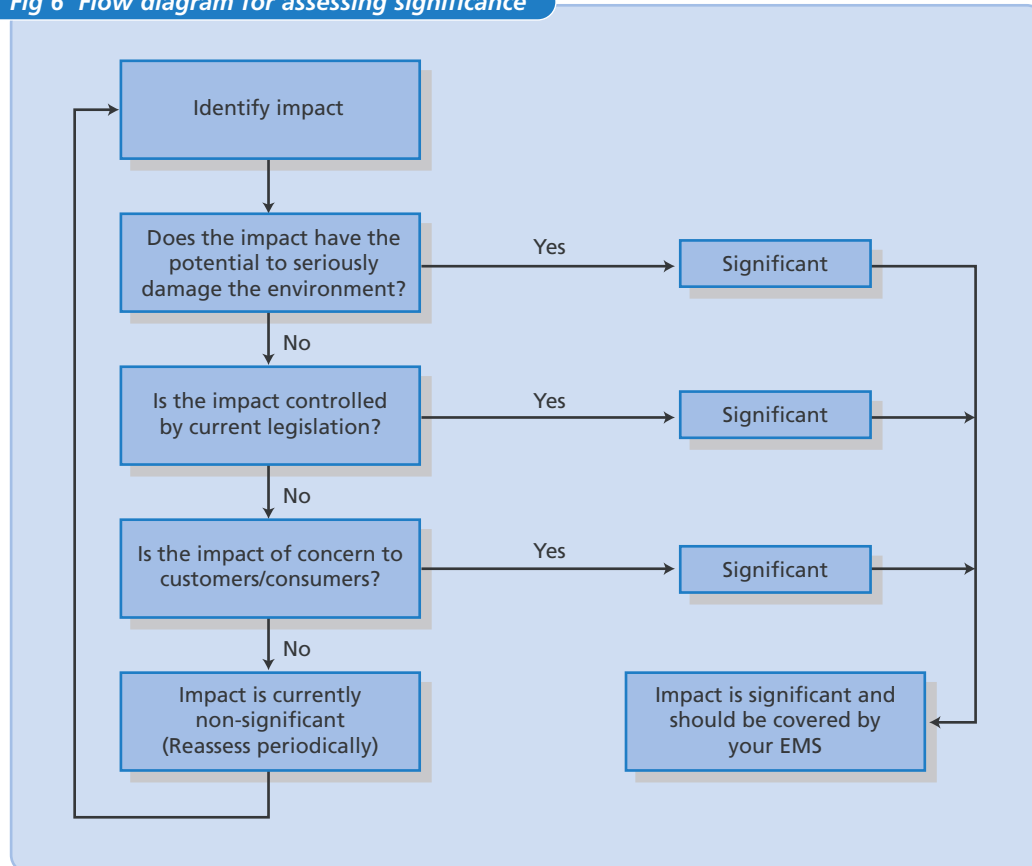
- is controlled by legislation;
- has the potential to cause demonstrable damage to the environment;
- is of concern to interested parties, eg regulators, local residents, customers and shareholders.

One simple method is to judge significance against a number of criteria as shown in the flow diagram in Fig 6. All impacts or aspects meeting these three criteria would then be recorded as significant in your Aspects Register. If using the example form on the CD-ROM in the back pocket of the Guide, remove '(score)' from the heading of the first column.



Form 03
Aspects
Register.doc

Fig 6 Flow diagram for assessing significance



7.5.2 Numerical rating/weighting method

An alternative method is to develop an evaluation matrix (ie a scoring system) and assign a numerical score to each environmental impact to quantify the relative importance of different criteria under normal and abnormal operating conditions.

Under this system, a significant environmental impact is one which scores more than a certain number of points under either normal or other operating conditions. Some effects may be significant in only one category, others in both. Using this methodology, the maximum possible score under either normal or other operating conditions is 30. It is up to you to decide where to set the threshold score for environmental significance; it is usually 50% of the maximum possible scores. An example evaluation is described in Section 7.5.3.



Form 04
Aspects
Evaluation.doc

If you decide to use this method of assessing significance, you may find it helpful to use the example Environmental Aspects Evaluation Sheet (Form 04 Aspects Evaluation) on the CD-ROM in the back pocket of the Guide and shown in Appendix 4. You will need a copy for each aspect. For help with using the numerical rating/weighting method, contact the Environment and Energy Helpline on freephone 0800 585794.

In the example shown in Table 6, each environmental impact is awarded a score to reflect the relative importance under normal operating conditions of:

- legislation (both current and forthcoming);
- environmental damage, eg toxicity, acidity, greenhouse gas emissions or ozone-depleting substances;
- interested parties, eg local residents, customers, investors, insurers and employees;
- quantity, eg the volume/weight of the waste or the frequency of its occurrence.

The scores are multiplied by a weighting factor that reflects the importance of the criterion at a particular company. The weighting factor assigned to each issue is entirely up to you - it should reflect your company's priorities. Adding the four scores together gives a total score for the environmental impact under normal operating conditions. You can then rank your environmental impacts according to their total scores. In this example, the maximum possible total score is 30; using the 50% rule, the threshold for significance is 15.

Table 6 Matrix to rank environmental impacts under normal operating conditions

Issues	Score				Weighting factor		Score	
	3	2	1	0			=	
Legislation	Existing	Impending	n/a	None	×	2	=	a
Environmental damage	Known detriment	Possible detriment	Limited detriment	No detriment	×	3	=	b
Interested parties	Considerable interest	Moderate interest	Little interest	No interest	×	2	=	c
Quantity	High	Medium	Low	Nil	×	3	=	d
Normal operating conditions total score				=	(a + b + c + d)			
Maximum possible score				=	30			
Significant impact score (50% of maximum)				=	>15			

Each environmental impact is then awarded a numerical score under other operating conditions such as:

- abnormal operations, eg factory start-up after a holiday shutdown period;
- accident/emergency, eg fire, accidental damage or pollution from a spillage;
- past activities, eg activities of former site occupant or burial of waste on-site;
- planned activities, eg new product or production line, modified equipment, site development.

Allocating scores to these operating conditions (see Table 7 for an example) allows the overall importance of the impact to be calculated. As with the weighting factor in Table 6 for normal operating conditions, the scores assigned to each issue are entirely up to you. The maximum possible score is again 30 and the threshold for significance is again 15 (using the 50% rule). The total score allows you to rank the environmental impacts under other operating conditions.

Table 7 Matrix to score environmental impacts under other operating conditions

Issues	Score					
	12	6	3	0		
Abnormal operations	n/a	Increased environmental impact	No change	Reduced environmental impact	=	a
Accident/emergency	n/a	Increased environmental impact	No change	Reduced environmental impact	=	b
Past activities	Evident/ requires action	Possible damage/ difficult to evaluate	n/a	No damage	=	c
Planned activities	n/a	Increased environmental impact	No change	Reduced environmental impact	=	d
Other operating conditions total score			= (a + b + c + d)			
Maximum possible score			= 30			
Significant impact score (50% of maximum)			= >15			

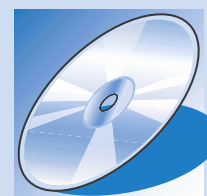
Record the results of your assessment in your Aspects Register.

7.5.3 Example evaluation

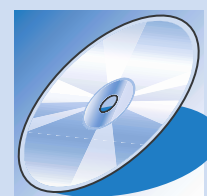
The aspect being evaluated is the emission of wood dust from an abatement plant at a furniture manufacturing company. The company chose to use the numerical rating/weighting method and have a significance threshold of 15 for both normal and other operating conditions (ie 50% of the maximum possible score).

Fig 7 shows the completed evaluation sheet for this aspect. Process Guidance Note PG6/2(95) *Manufacture of Timber and Wood-based Products* (for which the site has an authorisation from the local authority) and Part III (statutory nuisance) of the Environmental Protection Act 1990 were identified by the company as relevant legislation. Possible environmental damage from the wood dust emissions included nuisance dust, blocked drains and air pollution. Interested parties were the local authority, employees, neighbours and the public. The quantity depended on the levels of release, but in most cases, was expected to be medium.

Evaluation by the numerical rating/weighting method shows that the aspect is significant for both normal and other operating conditions.



Form 03
Aspects
Register.doc



Form 04
Aspects
Evaluation.doc

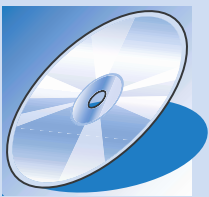
Fig 7 Example completed environmental aspects evaluation sheet

ENVIRONMENTAL ASPECTS EVALUATION SHEET (formatted for the numerical rating/weighting method)					
Aspect:	<i>Wood dust emissions from abatement plant</i>				
Impact:	<i>Air pollution and nuisance</i>				
Normal operating conditions					
Issues	Score (from GG338 Table 6)			Weighting factor	
Legislation	3	<i>Existing</i>	×	2	= 6
Environmental damage	3	<i>Known detriment</i>	×	3	= 9
Interested parties	2	<i>Moderate interest</i>	×	2	= 4
Quantity	2	<i>Medium</i>	×	3	= 6
Total score, normal operating conditions =					25
Other operating conditions					
Issues	Score (from GG338 Table 7)				
Abnormal operations	<i>Increased environmental impact</i>			6	
Accident/emergency	<i>No change</i>			3	
Past activities	<i>Possible damage/difficult to evaluate</i>			6	
Planned activities	<i>No change</i>			3	
Total score, other operating conditions =					18

7.6 Recording your decisions

The reasons for your decisions should be recorded in a systematic manner for future reference and to show to certification bodies.

- Record the results of your evaluation of significance for each aspect in your Aspects Register, ie is the aspect considered significant or not significant by your company. The Aspects Register should also indicate how your significant aspects are linked to your EMS (see Section 10). The Register is a required document for ISO 14001 certification or EMAS registration.



Form 03
Aspects
Register.doc

Compliance with the law is a key part of any EMS. Maintaining a Register of Legislation can help your company to comply with existing legislation and make you aware of impending legislation. To comply with the basic requirements of ISO 14001 or EMAS, your company needs to have a detailed understanding of all laws and regulations that apply to your operations. Once you understand the legislation, you can put appropriate controls in place.

You will have identified all relevant legislation and codes of practice during the Initial Review (see Section 5). The Register of Legislation aims to summarise the requirements and make it easy for all staff to access information relevant to their activities in the workplace.

- You are not expected to hold copies of each piece of legislation, but you must identify what is relevant and have access to details of the main implications.
- Detailed information on legal requirements is typically retained by the Champion or the Management Representative. However, everyone in an organisation has the potential to contravene legal requirements - everyone, therefore, requires a basic level of information.
- An example page from a Register of Legislation for a furniture manufacturer is shown in Fig 8. A blank form (Form 05 Legislation Register) is provided on the CD-ROM in the back pocket of the Guide and shown in Appendix 4.

To understand the legislation affecting your company, you need to:

- identify a reliable source of guidance to relevant environmental legislation and appropriate codes of practice, eg your trade association or the Environment and Energy Helpline (freephone 0800 585794);
- identify the legislation relevant to your site and operations (see Appendix 1 for a list of legislation relevant to furniture companies or visit the NetRegs web site of the Environment Agency - www.netregs.environment-agency.gov.uk);
- list the appropriate legislation and how it applies to your company in your Register of Legislation.

The method you choose to identify your company's legal requirements should be documented as a procedure within your EMS. You should also specify how often you intend to update your Register. This should be at least annually and linked to an annual assessment of compliance (see Section 11). When the Register is updated, key changes should be summarised at the front. Remember also to make sure all relevant employees are aware of the changes and any effects on their working practices.

Advice on all legislation affecting furniture manufacturers can be obtained through the Environment and Energy Helpline on freephone 0800 585794.



Form 05
Legislation
Register.doc

Fig 8 Example page from a Register of Legislation for a furniture manufacturer

REGISTER OF LEGISLATION

Act/Regulation/Guidance

Environmental Protection Act 1990, Part I
Process Guidance Note PG6/33(97) Wood Coating Processes

Summary

Companies using more than 5 tonnes/year of organic solvent must register with their local regulator and:

- maintain a solvent inventory;
- minimise unnecessary solvent use;
- implement low solvent coatings.

Relevance to the company

Solvent use is currently 6.8 tonnes/year and the company holds a PG6/33 authorisation.

Regulator

Local authority

Who is responsible at this company?

Environmental manager and coating shop manager

Links to other parts of the EMS

Solvent emissions have been identified as a significant environmental aspect and the company has targets, objectives and programmes associated with solvent reduction.

Relevant procedures include:

- storage of hazardous liquids;
- special waste disposal.

Setting objectives and targets

Setting specific objectives and realistic targets is the best way to achieve continual improvement in your environmental performance. Make sure everyone knows what your objectives and targets are and how you plan to achieve them.

Objectives and targets can apply broadly across an organisation or be more site-specific for individual activities. Documents such as your Aspects Register, the Register of Legislation and environmental policy will help you to define the company's objectives and targets.

Objectives and targets should be periodically reviewed and revised.

9.1 Objectives

Objectives are guiding aims for your EMS and should be set to achieve improvements in line with your:

- environmental policy;
- significant environmental aspects;
- technical options, eg best practice, efficiency and use of cleaner technology;
- financial, operational and other business requirements.

In general, objectives should be set as applicable to your processes, products and services for the following areas:

- controlled and uncontrolled emissions to atmosphere;
- controlled and uncontrolled discharges to water;
- solid and liquid wastes;
- contamination of land from leaks/spillages;
- use of natural resources;
- noise;
- effects on flora and fauna.

9.2 Targets

Having targets for each objective allows you to set short-term measurable goals against which performance can be judged. The simplest form is a percentage reduction target, eg 5% reduction of timber waste per tonne of product.

- Ensure targets are SMART:
 - **S**pecific - relating to one significant aspect.
 - **M**easurable - a quantifiable element.
 - **A**chievable - not unrealistic.
 - **R**ealistic - results-orientated.
 - **T**ime-bound - a deadline for achievement.

- Identify owners for individual targets to ensure the workload is shared and that individuals know their responsibilities and where to focus their efforts.

9.3 Environmental improvement programme

A written programme of work stating when and how objectives will be achieved and who is responsible for achieving them will help you to implement your EMS effectively and improve your environmental performance. Your improvement programme (called a Management Programme under ISO 14001) does not need to be a detailed project plan, but should:

- include deadlines for completing specific tasks associated with objectives and targets;
- be dynamic, realistic and achievable;
- be reviewed regularly and revised as necessary.

Although there is a requirement for continual improvement, there is not a set standard or guide for the rate at which your company must improve. Both ISO 14001 and EMAS require the specification of reduction levels that are measurable and achievable.

When developing an environmental improvement programme, it is important to:

- identify the areas in which improvement is needed, eg:
 - legislative compliance;
 - raw material use;
 - energy consumption;
- set realistic, numerical targets for improvement and revise these as necessary;
- document targets clearly and communicate them to all employees;
- ensure improvements are measurable and quantifiable against these targets;
- set a realistic timescale and budget for each objective;
- ensure that you have the necessary resources, eg manpower and finance;
- assign responsibility for each objective;
- obtain the support of management/employees for the improvements;
- hold short meetings to report progress;
- establish a new deadline (where possible) if deadlines cannot be met;
- review and update the environmental improvement programme regularly.

Fig 9 shows an example of a simple way of documenting objectives and targets. Use the blank form (Form 06 Improvement Programme) provided on the CD-ROM and shown in Appendix 4 to record the objectives and targets for your company and to integrate them into your Management Programme.



Form 06
Improvement
Programme.doc

Fig 9 Example objectives and targets at a furniture manufacturer

OBJECTIVES AND TARGETS FOR IMPROVEMENT PROGRAMME				
Company: <i>Woodburn Ltd</i>				
Completed by: <i>J Johnson</i>			Date: <i>14/02/02</i>	
Objective	Target	Resources	Responsibility	Completion date
To purchase timber products from sustainable/ well-managed resources.	80% of all products purchased.	Purchasing manager to work with suppliers to develop a certified chain of custody procedure. Budget of £3 000.	Purchasing manager	Dec. 2002
To reduce potential for land and water contamination.	To construct bund walls beneath all diesel and gas oil tanks on the site.	£5 000 for capital expenditure. Maintenance to liaise with contractor.	Maintenance manager	Aug. 2002

Operating your EMS

10.1 Management Manual

Documentation is necessary to describe and support your EMS. A Management Manual forms the basis of your company's EMS. It should:

- be relevant to the operations and processes employed;
- provide a central point of reference for the implementation and maintenance of the EMS;
- be produced, maintained and controlled by the Management Representative (see Section 4.3).

Your Management Manual, which can be either paper-based or in an electronic format, describes how your EMS operates. It should contain:

- your environmental policy;
- an organisation chart for the company;
- a statement of the company's objectives and targets and its environmental improvement programme;
- the responsibilities and authority of employees involved in the EMS, including the Management Representative;
- documented procedures for all processes and activities with a significant environmental impact.

The Management Manual is a key document when seeking certification to ISO 14001 and/or registration to EMAS. It should explain how the requirements of the standard would be met.

10.1.1 Procedures

Procedures should be drawn up to monitor and control the environmental impact of specific processes or materials. These procedures will ensure the smooth functioning of the EMS documented. They should be:

- documented and made available for easy reference at all times;
- easy to understand;
- written with a view to increasing efficiency and minimising waste;
- updated as necessary.

Once you have written your procedures, examine them for opportunities to minimise waste and improve efficiency. Procedures can be changed at any time to improve the integrity or ease of operation of the system. Any changes must be properly documented and controlled.

Employees should be provided with written procedures applicable to their job, so they know how to operate processes and carry out activities that could have a significant environmental impact. Those areas for which furniture manufacturers are likely to require procedures are listed in Table 8. Fig 10 (see page 40) shows an example procedure for dealing with the spillage of a hazardous substance.

Table 8 Example procedures required by a furniture manufacturing company

Procedure
■ Audit
■ Clean-up of spillages
■ Communication
■ Control of contractors
■ Control of discharges to water
■ Control of emissions
■ Design
■ Document control
■ Emergency preparedness and response
■ Energy and fuel management
■ Handling of hazardous materials
■ Identification of environmental aspects
■ Legal and other requirements
■ Management Review
■ Monitoring and measurement
■ Non-conformance, corrective and preventive action
■ Operational control
■ Purchasing
■ Records
■ Training, awareness and competence
■ Waste management
■ Any other site-specific activities, from which without documented procedures, pollution incidents could occur

Fig 10 Example procedure for dealing with the spillage of a hazardous substance**Company:** Timberwise Furniture Manufacturers**Procedure:** Procedure for the clean-up of hazardous substances**Number:** 10**Issue:** 1**Authorised by:** J Smith**Date:** 20/02/02**Purpose:**

To mitigate any environmental damage in the event of a spillage of hazardous substances, ie solvent-based lacquers, oils, etc.

Responsibility:

All personnel involved with the handling and processing of hazardous substances.

Procedure:

In the event of a spillage of any material listed in the hazardous substances inventory, the following procedure will be instigated.

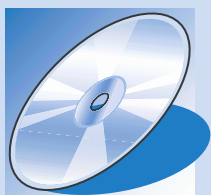
- If the spill is large and has the potential to enter the drainage system, spill kits and drain covers must be used to prevent potential contamination of watercourses.
- All spillages are to be cleaned up using soak-up granules or, if not available, wood dust and shavings.
- All contaminated material is to be collected into the labelled plastic bags found within the spill kits and removed to the special waste storage unit for disposal by licensed contractors. If in doubt, seek advice from the department supervisor.
- Details of the spill shall be entered into the Spill Log Book and reported to the department supervisor.
- Materials used to clean up the spill shall also be recorded so that the spill kit material can be replaced.
- Department supervisors are to examine the log book on a regular basis and, where appropriate, investigate corrective or preventative action in liaison with the environmental manager.

10.2 Training

Training is an essential requirement for the success of an EMS. As well as raising awareness of environmental issues, it should provide employees with specific technical skills.

Use the **training workshop manual (GG338A)** and accompanying **slide presentation (GG338B)** provided on the CD-ROM in the back pocket of the Guide to train staff about the various elements of an EMS.

- Identify the issues and procedures that employees need to be trained in and the key roles that will require training.
- Fill out a training needs matrix to ensure that training is targeted to a specific audience. An example EMS training matrix (Form 07 Training Matrix) is provided on the CD-ROM in the back pocket of the Guide and in Appendix 4.
- Ensure that, as a minimum, all employees receive basic training in environmental awareness and the elements of your EMS.



Form 07
Training
Matrix.doc

- Provide refresher training and further specialist training as necessary. For example, use the material and slide presentation provided by *Furniture Workbook: Cut Waste Cut Costs* (GG308)⁴ to train staff about practical ways of reducing waste.

10.3 Monitoring and measurement

Your EMS should include a procedure for regular monitoring and measurement of characteristics related to significant aspects, including waste production. These data should be collated and summarised together with a commentary on trends, relationship to production volumes and compatibility with targets. Data collection and analysis are vital tools in reducing resource use and minimising waste.

Although the minimum frequency specified by ISO 14001 is annually, more frequent measurement (eg monthly or weekly) is necessary to identify variations and opportunities to reduce waste. The sooner you take corrective action, the more cost savings you will achieve.

Performance reports can be used in the Management Review (see Section 11.4) and to provide feedback to employees and other stakeholders.

Parameters that should be measured include:

- production levels;
- waste generated, eg rejects;
- raw material use, eg wood and solvents;
- energy use, eg electricity for coating.

Remember: If you don't measure it, you can't manage it.

See the list in Section 12.1 of free Envirowise publications and tools designed to help companies identify, measure and reduce waste.

10.3.1 Assessing legislative compliance

Your procedure to assess compliance with legislation should be performed at least annually, and after updates of your Register of Legislation. You may need to assess compliance more often for some issues - especially when there is a statutory requirement to supply information to regulators.

- Any areas of non-compliance should be identified and corrective actions initiated.
- Non-compliances should be summarised in a report produced for the Management Review (see Section 11.4).
- An example compliance review form (Form 08 Compliance Review) is provided on the CD-ROM in the back pocket of the Guide and in Appendix 4.



Form 08
Compliance
Review.doc

⁴ Available free of charge through the Environment and Energy Helpline on freephone 0800 585794 or via the Envirowise web site (www.envirowise.gov.uk).

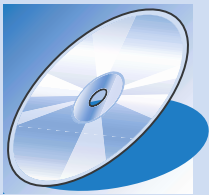
10.4 Supply chain issues

Your EMS should also pay attention to the environmental impact of:

- Contractors working on-site. Many environmental incidents are directly or indirectly due to poor management and/or communications with on-site contractors.
- Sub-contractors and suppliers. Rank them according to spend and/or environmental impact.

Start by looking at the biggest environmental risks and try to address these first. Sending a questionnaire to all suppliers will enable you to learn how much attention individual companies give to environmental issues. It will also demonstrate to suppliers that you are interested in the environmental aspects of the products and services they supply, as well as quality and other criteria.

- Keep the questionnaire simple, with yes/no answers.
- Adapt the example questionnaire (Form 09 Supplier Questionnaire) provided on the CD-ROM in the back pocket of the Guide and in Appendix 4 to send to your suppliers.
- Before sending out a questionnaire, plan how you are going to use the information provided by your suppliers.



Form 09
Supplier
Questionnaire.doc

Audit and certification/verification

An environmental audit should not be confused with the environmental review. While the Initial Review kick-starts the EMS, internal audits maintain its momentum. The aim of this Section is to help your company develop a framework for conducting its own internal environmental audits.

In addition to ensuring that your EMS is operating correctly, environmental auditing helps to maintain increased environmental awareness and a sense of responsibility among employees.

11.1 What is an audit?

Internal audits involve a systematic inspection and comparison of actual operating methods with the procedures specified in the Management Manual. The aim is to assess whether your EMS is operating correctly and whether those activities undertaken by the company comply with work procedures and the company's environmental policy, objectives and targets.

Internal audits to periodically assess the effectiveness of the EMS are required for both ISO 14001 and EMAS. Procedures for audits need to be established and these should confirm that the EMS has been properly implemented and maintained.

For many companies, the environmental auditing process will be a part of their existing internal audit activities and will use existing resources. However, it is up to you to decide how to conduct the audit according to the resources, competencies and skills you already have within the company.

The audit will fall into three separate stages:

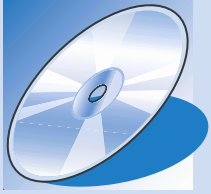
- the planning stage;
- the audit itself;
- post-audit activities.

11.2 Audit design

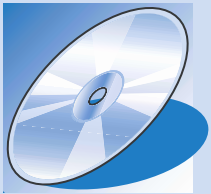
Design the audit to focus on areas of environmental significance and the current state of legislative compliance. The audit should be designed by the environmental manager or Management Representative.

Issues to consider during an internal audit include:

- solid waste disposal;
- gas emissions;
- solvent management;
- liquid effluent discharge and treatment;
- energy management;
- materials storage;
- occupational hygiene;



Form 10
Audit
Checklist.doc



Form 11
Audit Report.doc

- chemical handling;
- incident response;
- noise;
- environmental programmes;
- pollution control;
- audit follow-up.

Use or adapt the audit activity checklist (Form 10 Audit Checklist) provided on the CD-ROM in the back pocket of the Guide and in Appendix 4 to help you design and carry out an internal audit of your EMS.

Audit design is straightforward. First, decide which procedure you are going to audit. Read through the procedure and then prepare an internal audit form (like the one shown in Fig 11) by inserting appropriate questions on each section of the procedure. Keep the audit simple by asking key questions about the significant areas of the procedure being audited. The response will be either 'yes' or 'no', but it is important to leave space for the auditor to record the reason for this decision. You must satisfy yourself that work is carried out in accordance with the procedure and that the supporting evidence is genuine.

To help you audit a procedure, a blank internal audit form (Form 11 Audit Report) is provided on the CD-ROM in the back pocket of the Guide and in Appendix 4.

Fig 11 Example internal audit report form

INTERNAL AUDIT REPORT FORM		
Audit carried out by: <i>J Smith</i>		Date: <i>29/3/02</i>
Procedure to be audited: <i>Waste handling and storage</i>		No: <i>4.2</i>
Corrective action request (CAR) No: <i>3/2002</i>		
Section/checklist	Conforms?	Comments
<i>Is the procedure up to date?</i>	<i>Yes</i>	<i>Correct as of 29/3/02</i>
<i>Is the procedure complete?</i>	<i>Yes</i>	
<i>Is the procedure suitable?</i>	<i>Yes</i>	<i>Procedure suitable for all wastes on site.</i>
<i>Are wastes labelled for transport?</i>	<i>Yes</i>	<i>All hazardous wastes are labelled.</i>
<i>Is the storage method appropriate for the waste?</i>	<i>No</i>	<i>Hazardous liquid wastes need to be stored in a banded area.</i>

11.2.1 Selecting auditors

Two factors are important when selecting employees to carry out an internal audit, ie:

- the person responsible for a particular procedure should not be the person that audits it;
- potential auditors should have experience of carrying out audits and have received appropriate training in undertaking environmental audits.

More than one internal auditor may be required, but this also allows cover for holidays and sickness.

11.2.2 Audit frequency

The frequency of audits should be linked to the significance of the environmental impacts, but all procedures should be audited at least once a year.

The environmental manager or Management Representative should use the Aspects Register to identify areas:

- with the most significant environmental impacts;
- where the company has failed to meet legal requirements in the past.

This information should then be used to compile an audit timetable showing which areas are to be audited and when, eg which procedures are to be audited each month.

A furniture company would typically expect to carry out two internal audits a month. A well-designed audit with suitable checklists should take 20 - 40 minutes (average 30 minutes). However, it may take 2 - 3 hours to audit a procedure for the first time.

11.3 The audit process

- Try to audit people carrying out the process or working in the areas being audited.
- Ask questions and observe. Record the replies and your observations accurately and at the time that you are performing the audit.
- Check that you have filled in and answered all sections before signing and dating the audit form.
- A written report detailing the audit's findings should be presented at the Management Review (see Section 11.4).

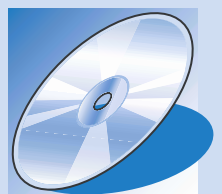
11.3.1 Non-conformances

Non-conformances are failures within the system. Usually these relate to employees not following work procedures.

When a non-conformance (ie a 'No') is recorded, it is the responsibility of the auditor to suggest a way of correcting the fault and preventing it from happening again. The auditor should prepare a non-conformance report or corrective action request (CAR) form that describes:

- what has gone wrong;
- how the fault will be rectified;
- who will do the remedial work;
- when it will be done;
- actions that can be taken to prevent the fault from happening again.

This logical and straightforward process is crucial to the success of your continual improvement programme. Fig 12 (overleaf) shows an example CAR form that relates to the example internal audit report form shown in Fig 11. The CAR form should state the timescale for improvement and a follow-up date. A blank CAR form (Form 12 Corrective Action Request) is provided on the CD-ROM in the back pocket of the Guide and in Appendix 4.



Form 12
Corrective Action
Request.doc

Sometimes, a non-conformance is due to a problem with the wording of a procedure rather than incorrect performance. In this case, the written procedure should be modified to improve the description of the operating method.

Observations recorded by the auditor may relate to areas in which there are no specific non-conformances, but where the auditor feels that the system could be improved in some way.

Fig 12 Example corrective action request form

CORRECTIVE ACTION REQUEST (CAR) FORM	
Procedure No: 4.2	CAR No: 3/2002
CAR completed by: J Smith	Date: 29/3/02
Non-conformance:	
<i>Hazardous liquid wastes need to be stored in a bunded area.</i>	
Corrective action:	
<i>Improve storage of hazardous chemicals and oils to prevent soil and groundwater contamination arising from leaks and spills from waste storage drums and tanks.</i>	
Signed: J Smith	Date: 29/3/02
Action to be taken:	
<i>Contractor to be employed to build bunded area for storage of hazardous chemical and oil wastes. Work to be completed by 17/5/02.</i>	
Signed: J Smith	Date: 1/4/02
Action completed:	
<i>Contractor has built bunded area to rear of main factory in accordance with Environment Agency specifications.</i>	
Signed: J Smith	Date: 16/5/02
Preventative action:	
<i>All hazardous chemical and oil wastes to be stored in bunded area. Bund to be checked daily.</i>	
Signed: J Smith	Date: 16/5/02

11.4 Management Review

A Management Review allows senior management to consider the effectiveness of the EMS. The discussion and its conclusions should be minuted and agreed actions implemented.

The Management Review should discuss:

- progress in achieving objectives and targets;
- compliance with legislation;
- audit reports;
- reports on action in connection with non-conformances;
- new processes and any changes to known environmental issues;
- any new legislation;

- any new customer requirements;
- the need for any revisions to the environmental policy, objectives and targets.

11.5 Getting certified

To be ready for certification to ISO 14001, the EMS must have been fully operational for at least three months and at least one Management Review should have been conducted. Companies that want to be registered to a formal standard need to be audited by a certification body.

Certifiers use a range of methods for certification. Make sure you understand the different stages and what the certifier will be looking for at each stage. Ask the certifier to explain the process of certification to you. Many companies use the same certification body for their EMS and quality management system (QMS), but it is important to check that your certifier (verifier for EMAS) is accredited by the United Kingdom Accreditation Service (UKAS).

The basic processes of the external audit are similar for both ISO 14001 and EMAS, ie to review the company's environmental policy and its environmental management programme, systems and audit cycle. The audit is usually a two-stage process, consisting of an initial audit to check the scope of the management systems followed by a more detailed audit of the system. Once your EMS has been approved by external auditors, you can register it to the appropriate standard and use its logo in promotional literature.

The initial assessment includes a review of company documents to ensure that:

- the scope of the system is appropriate and well-structured;
- results reported by the company's internal audits can be relied upon as accurate;
- the internal auditing process is effective;
- audits are held frequently enough;
- staff conducting audits are trained and experienced;
- audits follow written procedures and are systematic;
- appropriate resources are available for audits.

If the initial assessment is satisfactory, then the certification body will plan the main assessment. This concentrates particularly on the assessment of significant environmental aspects and the procedures used for determining significance. In particular, the certification body will pay attention to documentary evidence for that judgement. It also looks at the appropriateness of the improvement objectives selected and the monitoring and reporting of targets set by the company.

Registration for EMAS differs from certification to ISO 14001 in that the procedure concentrates on assessing the accuracy and appropriateness of the Environmental Statement (a written document describing the company's environmental performance). Again, it is a two-stage process consisting of a desktop review to assess the scope of the Statement, followed by a main assessment. Within this assessment, the company environmental policy is checked to ensure that it complies with the requirements of EMAS and that the environmental management programme is operational. The Statement is checked to ensure that data are reliable and accurate and that internal review procedures are valid and being performed.

What to do next

Implementing an EMS with a focus on waste minimisation and continual improvement will help your company to reduce costs and improve its environmental performance. Make a start by writing an Action Plan for your company like the one shown in Table 9.

Table 9 Action Plan for continual environmental improvement

- ✓ Contact the Environment and Energy Helpline on 0800 585794 to order relevant publications (see Section 12.1).
- ✓ Obtain senior management commitment.
- ✓ Appoint a Champion and an EMS team.
- ✓ Agree budgets, resources, timescale and type of EMS with senior management.
- ✓ Use *Environmental Management Systems for the Furniture Industry: Training Workshop Manual* (GG338A)⁵ and the accompanying slide presentation (GG338B)⁶ to run training sessions for the company, site or different departments.
- ✓ Walk round the site to identify relevant environmental issues.
- ✓ Develop an environmental policy.
- ✓ Identify your company's environmental aspects.
- ✓ Evaluate the significance of your environmental aspects and draw up an Aspects Register.
- ✓ Identify relevant legislation and assess compliance with existing legislation.
- ✓ Compile a Register of Legislation.
- ✓ Set objectives and targets.
- ✓ Assign responsibility.
- ✓ Prepare your Management Manual and written procedures to deliver operational and document control.
- ✓ Devise an audit programme.
- ✓ Review progress and, if necessary, revise your policy, objectives and targets.
- ✓ Seek external certification or registration.

If you need more information, phone the Environment and Energy Helpline on 0800 585794 and ask for advice. Remember that companies employing fewer than 250 people can also ask the Helpline for a free *FastTrack* visit from an independent Envirowise consultant.

12.1 Useful Envirowise publications

These and other Envirowise publications are available free of charge through the Environment and Energy Helpline on freephone 0800 585794 or via the Envirowise web site (www.envirowise.gov.uk).

⁵ Provided as a PDF file on the CD-ROM in the back pocket of the Guide.

⁶ Provided as a Microsoft® PowerPoint® file on the CD-ROM for you to use and adapt as required.

12.1.1 Waste minimisation

- *WasteWise: Increased Profits at Your Fingertips* (IT313) - an interactive waste minimisation CD-ROM that brings together all the essential information companies need to minimise waste
- *Savings from Waste Minimisation in Furniture Manufacturing* (GG290)
- *Furniture Workbook: Cut Waste Cut Costs* (GG308) - workbook and slide presentation to help raise awareness of waste in furniture companies
- *Team Saves Waste and Money at Leading Office Seating Company* (CS307) - Case Study at Giroflex
- *Finding Hidden Profit - 200 Tips for Reducing Waste* (ET30)
- *A Fresh Pair of Eyes: Identifying Waste Minimisation Opportunities* (Video) (V217)
- *Waste Mapping - Your Route to More Profit* (ET219)
- *Saving Money Through Waste Minimisation: Teams and Champions* (GG27)
- *Workforce Partnerships to Reduce Waste and Save Energy* (ET228)

12.1.2 Packaging management

- *Cutting Costs and Waste by Reducing Packaging Use* (GG140)
- *Choosing and Managing Re-usable Transit Packaging* (GG141)
- *Unpack those Hidden Savings - 120 Tips on Reducing Packaging Use and Costs* (ET250)
- *Furniture Manufacturer Makes Significant Savings from Packaging Rationalisation* (CS299) - a Case Study at Pentos Office Furniture plc
- *Profiting from Reducing Packaging Costs: A Workshop Guide* (GG218)

12.1.3 Reducing solvent use

- *Reducing Solvent Use in the Furniture Industry* (GG177)
- *Solvent Use in Wooden Furniture Coating* (EG130)
- *Reduce Costs by Tracking Solvents* (GG114) - includes software to help companies compile a solvent inventory
- *Cost-effective Solvent Management* (GG13)
- *Good Housekeeping Measures for Solvents* (GG28)
- *Solvent Management in Practice: Industry Examples* (GG124)
- *Monitoring VOC Emissions: Choosing the Best Option* (GG203)

12.1.4 Other publications

- *Furniture Essentials: Environmental Information for Furniture Manufacturers* (GG289)
- *Investing to Increase Profits and Reduce Wastes* (GG82)
- *Choosing Cost-effective Pollution Control* (GG109)
- *How to Develop an Environmental Policy: A Guide for Small Printing Companies* (EN322)
- *Water Bills... Are You Splashing Out Too Much?* (EN323)

Free advice and information on how to reduce energy use in furniture manufacturing are available from the Energy Efficiency Best Practice Programme (see Appendix 2 for contact details).

12.2 Useful Environment Agency publications

These publications are available via E-mail: environment.agency@dmsltd.co.uk, or by faxing your request to 0151 604 1222.

- PPG2: *Above Ground Oil Storage Tanks*
- PPG3: *The Use and Design of Oil Separators in Surface Water Drainage Systems*
- PPG8: *Safe Storage and Disposal of Used Oils*
- PPG18: *Managing Fire Water and Major Spillages*
- PPG21: *Pollution Incident Response Planning*
- PPG26: *Drum Storage*
- *Concrete Bunds for Oil Storage Tanks*
- *Masonry Bunds for Oil Storage Tanks*
- *Solvent Pollution and How to Avoid It*
- *Follow the Oil Care Code*
- *Oil Care at Work*
- *Oil Storage Regulations*

Significant environmental legislation for furniture manufacturers

To comply with the requirements of an EMS, your company must comply with all environmental legislation. This list, which states the position for England and Wales as of 30 August 2001, is not exhaustive. Furniture manufacturers should contact the Environment and Energy Helpline on 0800 585794 for information about recent legislative changes and advice on specific legislation affecting their site. Companies operating in Scotland and Northern Ireland should also contact the Environment and Energy Helpline for details of their relevant legal requirements.

Table A1, which is adapted from *Club Green Guide to Environmental Legislation*, summarises the main items of legislation and their relevance to the sector. For more information and updates, contact either FIRA or TRADA (see Appendix 2 for contact details).

UK legislation can be viewed at www.legislation.hmso.gov.uk and the latest information about EU legislation at www.europa.eu.int/comm/environment/index_en.htm.

Failure to comply with the regulations may lead to prosecution by the Environment Agency. You can see its enforcement and prosecution policy at www.environment-agency.gov.uk/commondata/105385/enfpolicy.pdf.



Table A1 Key legislation affecting furniture manufacturers in England and Wales (as of 30 August 2001)

Legislation	Relevance to sector
<p>Emissions to air</p> <p>Environmental Protection Act 1990 Part I</p> <p>*PG1/12(95) <i>Combustion of Fuel Manufactured from or Comprised of Solid Waste in Appliances Between 0.4 and 3 MW Net Rated Thermal Input</i></p> <p>*PG6/2(95) <i>Manufacture of Timber and Wood-based Products</i></p> <p>*PG6/3(97) <i>Chemical Treatment of Timber and Wood-based Products</i></p> <p>*PG6/4(95) <i>Processes for the Manufacture of Particleboard and Fibreboard</i></p> <p>*PG6/23(97) <i>Coating of Metal and Plastic</i></p> <p>*PG6/31(96) <i>Powder Coating (including Sheradizing)</i></p> <p>*PG6/32(97) <i>Adhesive Coating Processes</i></p> <p>*PG6/33(97) <i>Wood Coating Processes</i></p>	<p>Made it an offence to operate a prescribed process or use a prescribed substance (as in Environmental Protection (Prescribed Processes and Substances) Regulations 1991 - see opposite) without an authorisation from the appropriate regulator and established integrated pollution control (IPC) enforced by the regulator and local air pollution control (LAPC) system enforced by local authorities. Authorised processes are obliged to use BATNEEC (best available techniques not entailing excessive cost).</p> <p>Sets limits on emissions (eg carbon monoxide and particulates) from wood-burning boilers with an input of around 90 - 650 kg/hour and states monitoring requirements.</p> <p>Stipulates wood dust extraction requirements for sites using more than 1 000 m³ of timber in any 12 month period (or sites using more than 10 000 m³ if wood is purely sawed and not sanded, routed or drilled etc).</p> <p>Sets limits on VOC emissions and controls the use of solvent-based preservatives and creosote in plants with a throughput of more than 500 m³ timber in any 12 month period (or sites using more than 10 000 m³ if wood is purely sawed and not sanded, routed or drilled etc).</p> <p>Controls releases (eg particulate matter, VOCs and formaldehyde) from fibreboard manufacture.</p> <p>Controls metal or plastic coating processes using >5 tonnes/year of organic solvent.</p> <p>Controls use and emission of powder used in coating processes (eg on metal surfaces) where more than 20 tonnes are used in any 12 month period.</p> <p>Controls adhesive processes which use more than 5 tonnes/year of organic solvent.</p> <p>Sets out the control regime for sites likely to use more than 5 tonnes of organic solvent in any 12 month period. Main requirements centre upon the reduction of unnecessary solvent use, the implementation of low solvent coatings (compliant coatings) and VOC emission limits.</p>

Table A1 Key legislation affecting furniture manufacturers in England and Wales (as of 30 August 2001) continued

Legislation	Relevance to sector
Emissions to air (continued)	
Environmental Protection (Prescribed Processes and Substances) Regulations 1991 (SI 1991 No. 472)	Define which processes and substances are prescribed for control under Part I of the Environmental Protection Act 1990.
Pollution Prevention and Control Act 1999	Transposes the EU's Integrated Pollution Prevention and Control (IPPC) Directive into UK law. Will gradually replace Part I of the Environmental Protection Act 1990.
Pollution Prevention and Control (England and Wales) Regulations 2000 (SI 2000 No. 1973)	Set out a single regulatory framework for IPPC and LAPC. LAPC will be replaced in time by Local Air Pollution Prevention and Control (LAPPC), which has similar procedures to IPPC but will only regulate emissions to air. Authorisations will be called 'permits' and BATNEEC will be replaced by BAT.
Environmental Protection Act 1990 Part III: Statutory Nuisance	Controls emissions (eg noise, odour, smoke or fumes) if they affect health or are perceived as a nuisance by neighbours.
Air Quality Standards Regulations 1989 (SI 1989 No. 317)	Allow the setting of statutory air quality standards to control certain air pollutants.
Clean Air Act 1993	Makes it an offence to emit dark smoke from a premises, eg due to yard burning.
Climate Change Levy (Registration and Miscellaneous Provisions) Regulations 2001 (SI 2001 No. 7)	Make provision about registration for the Climate Change Levy (CCL) and certain related matters. The levy, which is charged on each kWh of energy supplied, applies to all UK businesses.
Waste controls	
Environmental Protection Act 1990 Part II: Duty of Care	Imposes a duty on sites to maintain controls that safeguard waste both on-site and during and after transfer.
Environmental Protection (Duty of Care) Regulations 1991 (SI 1991 No. 2839)	Provide detailed guidance on the requirements related to Duty of Care transfer notes and written descriptions.
The Controlled Waste (Registration of Carriers and Seizure of Vehicles) Regulations 1991 (SI 1991 No. 1624)	Relate to the licensing of external operators removing waste from waste-producing sites.





Table A1 Key legislation affecting furniture manufacturers in England and Wales (as of 30 August 2001) continued

Legislation	Relevance to sector
Waste controls (continued)	
Waste Management Licensing Regulations 1994 (SI 1994 No. 1056) and amendments	Provide a system of controls on waste management and transfer sites.
Special Waste Regulations 1996 (SI 1996 No. 9727) and amendments	Define special waste (eg waste oil and waste thinners) and stipulates consignment note requirements.
Landfill Tax Regulations 1996 (SI 1996 No. 1527) and amendments	Set out the statutory framework for the collection by HM Customs and Excise of a levy on each tonne of waste sent to landfill.
Producer Responsibility Obligations (Packaging Waste) Regulations 1997 (SI 1997 No. 648) and amendments	Impose an obligation on sites handling more than a threshold amount of packaging waste (eg veneer crates, fabric coverings, spacers on timber shipments, cardboard boxes, bubble wrap and tape) to recover/recycle a certain proportion of this waste.
Packaging (Essential Requirements) Regulations 1998 (SI 1998 No. 1165)	Impose a legal duty to minimise packaging, to ensure its suitability for recovery/recycling and to minimise emissions of hazardous substances on disposal. Concentrations of certain heavy metals must also be within specified limits.
Environmental Protection (Disposal of Polychlorinated Biphenyls and Other Dangerous Substances) (England and Wales) Regulations 2000 (SI 2000 No. 1043)	Impose requirements to identify, register and dispose of polychlorinated biphenyls (PCBs).
Water controls	
Water Resources Act 1991	Designed to protect 'controlled waters' (including rivers, streams and ditches) and groundwater. Makes it a legal obligation to hold a consent for discharges (other than rainwater) to controlled waters and surface water drains.
Anti-pollution Works Regulations 1999 (SI 1999 No. 1006)	Enable the regulator to serve a works notice on controlled-water polluters specifying clean-up and restoration actions.
Water Industry Act 1991	Defines controls on discharges to foul sewer and imposes the need to hold a consent from the local sewerage undertaker to discharge trade effluent to foul sewer.

Table A1 Key legislation affecting furniture manufacturers in England and Wales (as of 30 August 2001) continued

Legislation	Relevance to sector
Water controls (continued)	
Contaminated Land Regulations 2000 (SI 2000 No. 227)	Place a duty on local authorities to inspect their area for likely contamination and issue notices for contaminated sites to be cleaned up.
Control of Pollution (Oil Storage) (England) Regulations 2001 (SI 2001 No. 2954)	Require tank owners to carry out certain works and to take certain precautions and other steps to prevent the pollution of controlled waters.
Relevant EU legislation and proposals**	
EU Solvent Emissions Directive (1999/13/EC)	Sets emission limit values (expressed in terms of the maximum solvent concentration in waste gases) and fugitive emission values (expressed as a percentage of solvent input). Operators can choose the most cost-effective way to achieve the required reductions; either by the use of abatement technology or by substituting high-solvent products by low-solvent or solvent-free products. The Directive's requirements will be incorporated into Process Guidance Notes as these are revised.
EU Landfill Directive (1999/31/EC)	Imposes strict controls on the operation, monitoring and aftercare of landfills. These include restrictions on the type and amount of waste that may be landfilled.
EU Waste Incineration Directive (2000/76/EC)	Sets stringent operating conditions and technical requirements, and specifies emission limit values for waste incineration and co-incineration plants.
EU Producer Responsibility Requirements	Extension of producer responsibility to other priority waste streams.
EU Environmental Liability Proposals	Strict liability suggested for damage caused to people, property and the environment.

* Process Guidance Notes were originally issued in 1991/1992 and are reviewed every four years or so. Under the new pollution prevention and control (PPC) regime, they will gradually introduce new considerations such as noise, waste minimisation and energy efficiency. Contact the Environment and Energy Helpline on 0800 585794 for the latest information.

** Member States are obliged to transpose the requirements of EU directives into their national law and to comply with the requirements of EU regulations.



Organisations offering help and guidance

Further advice about environmental management systems may be obtained from the Environment and Energy Helpline on 0800 585794 and from the organisations listed below.

The list is not exhaustive and has been compiled from information currently available to Envirowise. The listing of an organisation should not be regarded as an endorsement of its services or products by Envirowise. Similarly, Envirowise makes no claim for the competence or otherwise of any organisation not listed.

Envirowise

Offers a range of **free** services including:

- free advice from Envirowise experts through the Environment and Energy Helpline;
- a variety of free publications that provide up-to-date information on waste minimisation issues, methods and successes;
- free, on-site waste reviews from Envirowise consultants, called *FastTrack* visits, that help businesses identify and realise savings;
- free on-site advice for any environmental issue (counselling visit);
- best practice seminars and practical workshops that offer an ideal way to examine waste minimisation issues and learn about ways of reducing waste;
- guidance on waste minimisation clubs and other partnerships across the UK that provide a chance for companies to share best practice on waste minimisation.

Environment and Energy Helpline

Tel: 0800 585794 www.envirowise.gov.uk

Association of British Certification Bodies (ABCB)

Represents organisations that have been accredited to carry out third party certification.

Tel: 020 8295 1128 www.abcb.demon.co.uk

Association of Master Upholsterers and Soft Furnishers Ltd (AMU)

Trade association representing craft upholsterers, upholstered furniture manufacturers, chair frame manufacturers, soft furnishing retailers, contractors, etc.

Tel: 01633 215454 www.upholsterers.co.uk

BIO-WISE

Offers free, independent information and advice about using biotechnology solutions, for example, in VOC abatement and for composting.

Tel: 0800 432100 www.dti.gov.uk/biowise

British Biogen

Trade association to the UK bioenergy industry with a mission to promote the commercial development of biomass as a renewable fuel resource.

Tel: 020 7831 7222 www.britishbiogen.co.uk

British Contract Furnishing Association (BCFA)

Represents companies supplying contract furnishing services, fabrics and soft furnishings, etc.

Tel: 020 7226 6641 www.bcfa.org.uk

British Library Environmental Information Service (EIS)

Provides a free enquiry service and carries out detailed research on a fee basis.

Tel: 020 7412 7955 www.bl.uk/services/information/environment.html

British Furniture Manufacturers Ltd (BFM)

Trade association covering domestic, contract, office and kitchen manufacturers as well as some suppliers and retailers.

Tel: 020 7724 0851 www.bfm.org.uk

British Standards Institution (BSI)

The BSI Standards Catalogue lists standards relating to environmental protection.

Tel: 020 8996 9001 (Customer Services Department)

Tel: 020 8996 7333 (Electronic Products Unit)

www.bsi-global.com

Business Connect Wales

Provides business information and advice through the partnership of major business support bodies in Wales.

Helpline: 0845 796 9798 www.businessconnect.org.uk

Business in the Environment (BiE)

Produces a range of publications and videos to help businesses improve their environmental performance.

Tel: 0870 600 2482 www.business-in-environment.org.uk

Business Link

Provides information and facilities to help small businesses prosper and grow.

Tel: 0845 600 9006 www.businesslink.org

CBI Environmental Business Forum

Provides environmental advice and information to members of the Confederation of British Industry (CBI). Publications on environmental issues are available to both members and non-members.

Tel: 020 7379 7400 www.cbi.org.uk

Department of Environment, Food and Rural Affairs (DEFRA)

Responsible for drawing up environmental legislation and formulating Government policies to protect the environment.

Tel: 0845 933 5577 www.defra.gov.uk

Department of Trade and Industry (DTI)

Helps businesses respond to environmental challenges and market opportunities.

Tel: 020 7215 5000 www.dti.gov.uk

Energy Efficiency Best Practice Programme (EEBPP)

Offers free advice, site visits, seminars and publications on the efficient use of energy in buildings, industry and business transport.

Environment and Energy Helpline

Tel: 0800 585794 www.energy-efficiency.gov.uk

Environment Agency

Regulates the implementation of environmental legislation in England and Wales, and provides a single point of contact for companies in England and Wales for environmental matters.

Contact details for its local area offices are given on its web site.

General Enquiry Line

Tel: 0845 933 3111 www.environment-agency.gov.uk

Forest Stewardship Council (FSC) UK Working Group

The FSC label on garden furniture, paper, flooring, timber and other products made from wood guarantees that the forests where the wood comes from are being managed responsibly.

Tel: 01686 413916 www.fsc-uk.demon.co.uk

FIRA International Ltd

Carries out research and provides access to technical information for the furniture industry.

Tel: 01438 777700 www.fira.co.uk

GMB Union

The health and environment service offers publications, briefing notes and information services.

Tel: 020 8947 3131 www.gmb.org.uk

HM Customs and Excise

Administers the operation and collection of the landfill tax and the Climate Change Levy.
National Advice Service

Tel: 0845 010 9000 www.hmce.gov.uk

Institute of Environmental Management and Assessment (IEMA)

EMAS Competent Body for England, Wales, Scotland and Northern Ireland.

Registers and provides information for companies wishing to participate in EMAS.

Tel: 01522 540069 www.iema.net or www.emas.org.uk

Institute of Wastes Management (IWM)

Professional association that provides information and training on all aspects of waste management.

Tel: 01604 620426 www.iwm.co.uk

Kitchen Specialists Association (KSA)

Represents operators of independent kitchen showrooms, manufacturers and distributors.

Tel: 01905 621787 www.ksa.co.uk

National Bed Federation Ltd (NBF)

Trade association representing manufacturers of beds and mattresses and their suppliers.

Tel: 01823 368008 www.bedfed.org.uk

National Society for Clean Air and Environmental Protection (NSCA)

A non-governmental organisation that encourages the reduction of air pollution, noise and other contaminants. Publishes a range of booklets and briefing materials.

Tel: 01273 878770 www.nasca.org.uk

Northern Ireland Environment and Heritage Service (NIEHS)

Regulates the implementation of environmental legislation in Northern Ireland and provides a single point of contact for companies in Northern Ireland. EHS is an Executive Agency of the NI Department of the Environment.

Environmental Protection

Tel: 028 9025 4754 www.ehsni.gov.uk

Northern Ireland Environmental Enquiry Point

Provides an environmental information and signposting service for companies in Northern Ireland. Operated by Invest NI (formerly Industrial Research and Technology Unit).

Tel: 0800 262227 www.irtu-ni.gov.uk

Office Furniture and Filing Manufacturers' Association (OFFMA)

Aims to foster business conditions in which members can increase their market share.

Tel: 020 7331 2030

Small Business Service (SBS)

A Government agency that provides practical business information and advice to small companies in England.

Tel: 0845 600 9006 www.sbs.gov.uk

Scottish Energy Efficiency Office

Funded by the Scottish Executive to improve Scottish companies' competitiveness through better energy efficiency and waste management.

Tel: 0141 242 5835 www.energy-efficiency.org

Scottish Enterprise Network

Scotland's main development agency, funded by the Scottish Executive, which provides business advice and information.

Helpline: 0845 607 8787 www.scottish-enterprise.com

Scottish Environment Protection Agency (SEPA)

Regulates the implementation of environmental legislation in Scotland and provides a single point of contact for companies in Scotland for packaging waste and other waste-related matters. Contact details for local offices are given on its web site.

SEPA Corporate Office

Tel: 01786 457700 www.sepa.org.uk

Sustainable Energy Programmes

DTI programmes that aim to ensure the provision of safe, secure, diverse and sustainable supplies of energy at competitive prices.

Renewable Energy Helpline

Tel: 01235 432450 www.dti.gov.uk/renewable/index.html

The Stationery Office

Sells printed copies of UK legislation and Process Guidance Notes.

Tel: 0870 600 5522 www.theso.co.uk

Timber Research and Development Association (TRADA)

Independent timber research, consultancy and information provider.

Tel: 01494 569600 (headquarters) or 01709 720215 (Rotherham office)

Advisory Helpline Tel: 01494 569601 (technical advice)

www.trada.co.uk

United Kingdom Accreditation Service (UKAS)

Holds a list of accredited certifiers and verifiers for ISO 14001 and EMAS.

Tel: 020 8917 8400 www.ukas.com

Waste and Resources Action Programme (WRAP)

Works to remove barriers to waste minimisation, re-use and recycling, and to create stable and efficient markets for recycled materials and products.

Tel: 01295 819900 www.wrap.org.uk

Glossary

Aspects Register	A list of the environmental impacts related to the activities, services, products and processes of the organisation, together with an indication of those aspects considered significant by the organisation and why.
CAR	Corrective Action Request - includes details and remedies for non-conformance events.
Continual improvement	Year-on-year enhancement of overall environmental performance (not necessarily in all areas of activity) resulting from continual efforts to improve in line with the environmental policy.
Controlled waste	Defined by the Environmental Protection Act 1990 as household, commercial or industrial waste. More fully defined by the Controlled Waste Regulations 1992. Superseded by the concept of Directive waste as introduced by the Waste Management Licensing Regulations 1994.
Eco-Management and Audit Scheme (EMAS)	A European Commission initiative designed to encourage good management practices to improve environmental performance. The voluntary scheme requires independent validation of the management system and, additionally, public reporting on environmental performance through the publication of an Environmental Statement.
Environment	The surroundings/conditions in which an organisation operates and which influences the development or growth of people, animals or plants. The environment extends from within the organisation to the global ecosystem.
Environmental aspect	Any element of a company's activities, products or services that can interact with the environment.
Environmental audit	A systematic and documented verification process to assess whether the environmental management system conforms to criteria set by the organisation.
Environmental impact	How the activities, services, products or processes of an organisation affect the environment, either directly or indirectly. Can be adverse or beneficial.
Environmental management system (EMS)	The organisational structure, responsibilities, practices, procedures, processes and resources for implementing environmental management.
Environmental policy	A written statement of the organisation's intentions and principles in relation to its environmental performance. Gives rise to the organisation's environmental objectives and targets.

Environmental Statement	A publicly available, written statement of an organisation's intention to achieve continual improvement in environmental performance. When verified by an accredited third party, it acts as a main criterion of EMAS.
Improvement programme	A documented programme clearly describing the means, timescales and responsibilities for achieving the organisation's objectives and targets.
Integrated Pollution Prevention and Control (IPPC)	A holistic approach to pollution control which recognises the need to look at the environment as a whole. Aims to prevent pollution at source and to protect land, air and water from the release of certain substances from specified, polluting industrial processes.
Interested party	Individual/group concerned with, or affected by, the environmental performance of an organisation.
ISO 14001	Standard developed by the International Standards Organisation (ISO) that specifies the requirements of an environmental management system. Applicable to those organisations wishing to implement, maintain and improve a formal EMS.
Local Air Pollution Control (LAPC)	A system of pollution control introduced by Part I of the Environmental Protection Act 1990. Applicable to emissions to atmosphere from less polluting industrial processes. These processes require authorisation from the local authority to operate. Under IPPC, LAPC will be gradually replaced by Local Air Pollution Prevention Control (LAPPC).
Management Manual	Documentation that describes the overall environmental management system and how it operates. Indicates responsibilities, procedures and resources for implementing the organisation's EMS.
Management Representative	The employee appointed by management who has responsibility for implementing and maintaining the environmental management system. Employees nominated for this role should have some knowledge of environmental issues to be able to perform their duties effectively.
Objective	Overall environmental goal, arising from the environmental policy that an organisation sets itself to achieve. Should be quantified wherever practicable.
Significant	That which the organisation decides is important based on a range of environmental performance criteria.
Special waste	Any controlled waste consisting of, or contaminated with, substances which make it dangerous to life. Criteria for determining whether or not a waste is special are given in the Special Waste Regulations 1996 (and subsequent amendments).

Target	Detailed performance requirement arising from the environmental objectives and which needs to be set and met in order to achieve those objectives. Should be quantified wherever practicable.
Trade effluent consent	Consent granted under the Water Industry Act 1991 authorising the discharge of effluent from trade premises into a public sewer. Granted by the sewerage undertaker for the area in which the consent applies (usually the local water company).
Transfer notes	A written description of any controlled or special waste that has been transferred by an organisation to a waste contractor. These notes, which are required by law for each shipment of waste, must contain details of amount, composition and storage, together with full details and signatures of the waste producer and the waste contractor.

Blank forms

This Appendix contains reduced copies of the blank forms provided on the CD-ROM in the back pocket of this Guide. These forms are intended to save you time and effort as you implement your EMS, but remember that an EMS should be tailored to meet the specific needs of your company.

The forms can be printed out from the CD-ROM for use as appropriate in your company. You may need more than one copy of certain forms. Please amend the forms as required for use, eg by adding your company name, document number, issue number and date.

By completing the various blank forms, you will get a better understanding of environmental issues at your site. You will also have a head start in collecting the information, records and documents that will form the building blocks for your own EMS.

All the forms (see Table A2) are provided as Microsoft® Word files. If you have any problems with either the CD-ROM or the Microsoft® Word files, please contact the Environment and Energy Helpline on freephone 0800 585794.

Table A2 *Forms to help you implement your EMS*

Form number and name	Purpose
01 Initial Review	Documents needed for an Initial Review
02 Aspects Checklist	Checklist for identifying environmental aspects
03 Aspects Register	Aspects Register
04 Aspects Evaluation	Environmental aspects evaluation sheet
05 Legislation Register	Register of Legislation
06 Improvement Programme	Environmental improvement programme
07 Training Matrix	EMS training matrix
08 Compliance Review	Legislative compliance review sheet
09 Supplier Questionnaire	Environmental performance questionnaire for suppliers
10 Audit Checklist	Checklist of areas to consider during an internal audit
11 Audit Report	Internal audit report form
12 Corrective Action Request	Corrective action request (CAR) form

EVS/*****
Version 1.0
Date: _____

INITIAL REVIEW - UTILITIES

Company: _____
Completed by: _____

Completed by:	Date:
<p>1 Electricity</p> <p>Annual consumption:</p> <p>Unit cost:</p> <p>Annual cost:</p> <p>Major use:</p>	
<p>2 Gas</p> <p>Annual consumption:</p> <p>Unit cost:</p> <p>Annual cost:</p> <p>Major use:</p>	
<p>3 Mains water When considering water costs, include the cost of disposing of the water to sewer (as trade effluent) as well as the cost of the incoming water supply. Both costs are shown on your water bill.</p> <p>Annual consumption:</p> <p>Cost of water supply (pence/m³):</p> <p>Cost of trade effluent (pence/m³):</p> <p>Annual cost: In Out Total</p> <p>Major use:</p> <p>Any abstracted water, eg from boreholes:</p>	
<p>4 Vehicle fleets Include different types of fuel (eg petrol, oil and LPG) used for vehicles including fork-lift trucks, all cars (commercial) vehicles and that used for generators.</p> <p>Fuel Annual Unit cost Total annual cost</p>	
<p>Total</p>	

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EVS/*****
Version 1.0
Date: _____

INITIAL REVIEW - SITE

Company: _____
Completed by: _____

Completed by:	Date:
<p>1 What are the main process undertakes on the site?</p>	
<p>2 Site history</p> <p>When was the site acquired?</p> <p>What expansion/changes of use have occurred since the site was acquired?</p> <p>Has there been any known contamination of the site? (give details)</p> <p>Has a contaminated land survey of the site ever been undertaken? (give details)</p>	
<p>3 Have there been any major accidents/incidents since the site was acquired? (give details)</p>	
<p>4 Has the company received any formal warnings or been prosecuted for breaches of consent or environmental legislation? (give details)</p>	
<p>5 Has the company received any complaints from members of the public regarding site operations? (give details)</p>	

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EVS/*****
Version 1.0
Date: _____

DOCUMENTS NEEDED FOR AN INITIAL REVIEW

Company: _____
Completed by: _____

Documents	Applicability and availability		Held by:
	Yes	No	
Business plan			
Process authorisations			
Consents to discharge to controlled waters			
Consents to discharge to sewer			
Complaints and accident records			
Copies of relevant legislation			
Copies of water management licences and transfer notes			
Details of breaches and prosecutions			
Drawings of any relevant plant			
Existing procedures and controls covering:			
Raw materials			
Effluents			
Effluents			
Waste			
Safe systems of work			
Provisions			
Emergencies			
Maintenance schedules			
Monitoring data for discharges			
Operation logs			
Product information			
Purchasing records			
Raw material specifications and data sheets (COOH manuals)			
Site drainage drawings and plans			
Training record			
Water, gas, electricity and vehicle fuel bills			
Copies of complaints from local residents			

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Company: _____
 Completed by: _____
 Version 1.0
 Date: _____

CHECKLIST FOR IDENTIFYING ENVIRONMENTAL ASPECTS

Use this checklist to identify the environmental aspects of your company/site/building/departments/operations. For example, if a department uses packaging, then tick the relevant box.

Assessment area

Resource use	Raw materials Packaging Commodities	<input type="checkbox"/>	Water pollution	Effluent to surface waters Releases to trade effluent Releases to sewerage Domestic sewage Potential for spillages	<input type="checkbox"/>	
Personal protective equipment	Chemicals	<input type="checkbox"/>	Emissions to air	Odours Dust Fumes Particulates Vapours Gases	<input type="checkbox"/>	
Make water use	Process water Cooling water Domestic Other	<input type="checkbox"/>	Noise	Dismissible at site boundary	<input type="checkbox"/>	
Other water use	Borehole Rainwater	<input type="checkbox"/>	Land contamination	From past use Potential from spillages	<input type="checkbox"/>	
Energy use	Electricity Gas Heating oil (Compressed air (electrolytic)) Vehicle fuel	<input type="checkbox"/>	Product use and disposal	Re-usable Recyclable Hazardous waste generated Packaging	<input type="checkbox"/>	
Re-process re-use/recycling	Off-site On-site	<input type="checkbox"/>	Transport	Raw materials to site Products to customers	<input type="checkbox"/>	
Waste disposal (on-site)	Incineration Waste treatment ET/land treatment	<input type="checkbox"/>	Visual	Impact of buildings, operations	<input type="checkbox"/>	
Subsidiary waste	Controlled waste Special waste Packaging waste Other	<input type="checkbox"/>	Local environment	SSSIs Natural habitats Watercourses Public footpaths	<input type="checkbox"/>	
Storage	Hazardous materials Waste	<input type="checkbox"/>				

From ISO 14001 published by BSI
 Environment and Energy Register 0800 511794

Company: _____
 Completed by: _____
 Version 1.0
 Date: _____

ASPECTS REGISTER

Aspect (Score) (Signal colour)	Link	Related impact(s)	Links to the EMS

From ISO 14001 published by BSI
 Environment and Energy Register 0800 511794

Company: _____
 Completed by: _____
 Version 1.0
 Date: _____

ENVIRONMENTAL ASPECTS EVALUATION SHEET

(Form used for the numerical rating/weighting method)

Aspect/Impact	Normal operating conditions Score (from G3338 Table 6)	Weighting factor
Issues		x 2
Legislation		x 3
Environmental damage		x 2
Increased catches		x 3
Quantity		x 3
Total score, normal operating conditions =		
Other operating conditions		
Issues		Score (from G3338 Table 7)
Abnormal operation		
Accidents/emergency		
Fire activities		
Planned activities		
Total score, other operating conditions =		

From ISO 14001 published by BSI
 Environment and Energy Register 0800 511794

Company: _____
Completed by: _____

EHS/Environment
Version 1.0
Date: _____

EMS TRAINING MATRIX

	Operational Business	Environmental Business	Health & Safety	Energy Business	Production Business	Customer Business	Internal Infrastructure Business	Resource Business	Support Business	Finance Business	Human Resources Business	Information Technology Business
Managing Director	✓	✓	✓	✓	✓	✓		✓				
Director	✓	✓	✓	✓	✓	✓		✓				
Production manager	✓	✓	✓	✓	✓	✓	✓	✓			✓	
Environmental manager	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
Skill leaders	✓	✓	✓	✓	✓	✓	✓	✓				
Skills	✓	✓	✓	✓	✓	✓	✓	✓				
Maintenance Officers	✓	✓	✓	✓	✓	✓	✓	✓				
Welders	✓	✓	✓	✓	✓	✓	✓	✓				
Accounts/purchasing	✓	✓	✓	✓	✓	✓	✓	✓				
Marketing/sales	✓	✓	✓	✓	✓	✓	✓	✓				
Administration	✓	✓	✓	✓	✓	✓	✓	✓				
Receptionist	✓	✓	✓	✓	✓	✓	✓	✓				
Security	✓	✓	✓	✓	✓	✓	✓	✓				

Form 07 00114 published by Enviroline

Environment and Energy Register 0001 01704

Company: _____
Completed by: _____

EHS/Environment
Version 1.0
Date: _____

OBJECTIVES AND TARGETS FOR IMPROVEMENT PROGRAMME

Company: Completed by:	Date:			Responsibility	Completion Date
	Objective	Target	Resources		

Form 08 00204 published by Enviroline

Environment and Energy Register 0001 001704

Company: _____
Completed by: _____

EHS/Environment
Version 1.0
Date: _____

REGISTER OF LEGISLATION

Act/Regulation/Guidance	Summary	Relevance to the company	Regulator	Who is responsible at this company?	Links to other parts of the EMS

Form 01 00114 published by Enviroline

Environment and Energy Register 0001 015704

Company: _____
Completed by: _____
EHS/2002/0000
Version 1.0
Date: _____

AUDIT ACTIVITY CHECKLIST

Use this checklist to help you design and carry out an internal audit of your EMS.

Manufacturing and assembly operations

Solid waste treatment areas

Liquid waste treatment areas

Research laboratories

Product test and repair areas

Goods-in areas

Warehouses for storing raw materials and products

Packaging and dispatch areas

Off-site storage and processing operations

Storage areas for materials (including oil, solvents and other chemicals)

Storage areas for wastes

Vendor operations (by contract or joint venture)

Contracted or site operators, eg. cleaning

Sales, management and administration offices

Closed operational areas, eg. old waste disposal areas on site

From 09/002158 published by Environment and Energy Hubline 0800 333794

Company: _____
Completed by: _____
EHS/2002/0000
Version 1.0
Date: _____

ENVIRONMENTAL PERFORMANCE QUESTIONNAIRE

Supplier:

Has your company got a written environmental policy? Yes No

Does your company have a waste minimisation programme?

Does your company have a formal environmental management system?
If yes, please give details.

Has your company set a target date to obtain certification to ISO 14001?
If yes, when.

Has your company assessed and documented its potential environmental impact?
If yes, please outline a summary.

How do you keep up with environmental legislation? Tick those that apply:
 Local regulator Trade associations Environment and Energy Journals No formal system
 Helpdesks

What are the main wastes generated by your company? Please list: _____

Does your company monitor resource efficiency, eg. yield and waste?

Does your company monitor water and energy use?

Do you have resource improvement targets?

Are there any recycled or re-used materials in the components supplied to us?

Does your company re-use/recycle any materials or packaging?

In the material you supply to us produced using a process authorised under IPC or LAMP?

Does any waste from the production of the materials you supply to us require a trade effluent discharge licence?

Are contingency plans drawn up to minimise the environmental impact in the event of a fire, spillage or other catastrophe?

Does your company have an environmental training programme?

Completed by: _____ Date: _____
Position: _____

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Company: _____
Completed by: _____
EHS/2002/0000
Version 1.0
Date: _____

LEGISLATIVE COMPLIANCE REVIEW SHEET

Sheet number: _____

Issue	Register of Legislation (including reference number)	Means of verification	Result	Conclusion

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Envirowise - Practical Environmental Advice for Business - is a Government programme that offers free, independent and practical advice to UK businesses to reduce waste at source and increase profits. It is managed by AEA Technology Environment and NPL Management Limited.

Envirowise offers a range of free services including:

- ✔ Free advice from Envirowise experts through the Environment and Energy Helpline.
- ✔ A variety of publications that provide up-to-date information on waste minimisation issues, methods and successes.
- ✔ Free, on-site waste reviews from Envirowise consultants, called *FastTrack* visits, that help businesses identify and realise savings.
- ✔ Guidance on Waste Minimisation Clubs across the UK that provide a chance for local companies to meet regularly and share best practices in waste minimisation.
- ✔ Best practice seminars and practical workshops that offer an ideal way to examine waste minimisation issues and discuss opportunities and methodologies.



Harwell International Business Centre | 156 Curie Avenue | Didcot | Oxfordshire | OX11 0QJ
E-mail: helpline@envirowise.gov.uk | Internet: www.envirowise.gov.uk



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