wrap

**Working together for
a world without waste**

Business Resource Efficiency Guide

Your Guide to Environmental Management Systems

Working together for a world without waste

Our vision is a world without waste, where resources are used sustainably.

We work with businesses and individuals to help them reap the benefits of reducing waste, develop sustainable products and use resources in an efficient way.

Find out more from the WRAP Resource Efficiency Helpline on 0808 100 2040 or at www.wrap.org.uk

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Summary

More and more, stakeholders and customers are expecting organisations to demonstrate their commitment to managing their impacts on the environment. This might be insurers or financiers wanting to understand how environmental risk is managed in an organisation, or customers wanting to know that suppliers in their supply chain are taking their own environmental responsibilities seriously. Having an environmental management system (EMS) is one way for an organisation to demonstrate that it addresses and minimises its environmental impacts, manages its legal compliance and continuously improves its environmental performance.

This guide contains a practical guide to developing an EMS. It is envisaged that the majority of users will work through the guide, section by section, using it to support them during the development of systems and processes necessary for their own EMS. So, whether you are just looking to develop an environmental policy or a full-blown EMS, this guide is for you. It will provide you with the advice and sources of support you will need to help you along the way.

1 Introduction to environmental management systems (EMS)

To implement an effective 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.

1.1 What is an EMS?

Increasingly, organisations are recognising that the environment is a management issue and not just a matter of compliance. An EMS is a systematic approach to managing your organisation's impacts on the environment. Having and following an EMS is **voluntary**, but organisations with an EMS have an explicit commitment to continual environmental improvement.

Setting up an EMS will provide your organisation with a framework through which its environmental performance can be controlled and improved.

An EMS:

- is a mechanism for defining environmental responsibilities for all staff, helping them to understand the environmental impact of their activities and individual actions;
- ensures that all operations have procedures that minimise their impacts;
- records environmental performance against set targets;
- can be audited; and
- will help you identify opportunities to reduce waste and thus reduce your operating costs.

To implement an effective 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.

Although many organisations have already made significant improvements in their environmental performance, an EMS will ensure that improvements continue through ongoing maintenance and monitoring of the system. An EMS also ensures that environmental performance and other related issues are raised regularly with senior management, and that the momentum for making improvements is maintained.

1.2 Potential benefits of implementing an EMS

- **Financial**
  - 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.
  - Lower insurance premiums as risks and liabilities are reduced.
  - Retaining site asset value.
  - More easily obtainable bank loans.
  - Attracting shareholders and investors.
- **Productivity**
  - Improved process control (i.e. fewer rejects, less rework, higher yields).
  - Reduced use of raw materials and consumables.
  - Less waste.
- **Sales and marketing**
  - Improved products.
  - Competitive advantage (i.e. preferred supplier status).
  - Increased sales achieved through promotion of greener credentials.
- **Management**
  - Structured approach to environmental issues and continual improvement.
  - Keeping ahead of environmental legislation.
  - Better relations with regulators.
- **Public relations**
  - Improved relations with local community and environmental groups.
  - Improved public image.

- **Personnel and training**
  - Improved working environment.
  - Reduced potential for environmental incidents.
  - Increased employee motivation and environmental awareness.
- **Peace of mind**
  - Conforming to legal requirements.
  - Avoiding penalties for pollution.
  - Avoiding bad publicity from pollution incidents.

1.3 What does an EMS involve?

An effective EMS includes:

- an assessment of how your organisation's activities, products, processes and services might affect the environment;
- the development of an environmental policy;
- an environmental improvement programme;

- defined 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 to ensure effective operation; and
- a formal review by senior management.

The various elements of an EMS are shown in Figure 1.

Remember the 'three Cs'

- Commitment - gain support for the EMS at all levels within the organisation through good communications.
- Continuity - ensure the system remains running once it has been established.
- Continual improvement - continuously reduce the organisation's significant environmental aspects.

Figure 1: Elements of a typical EMS
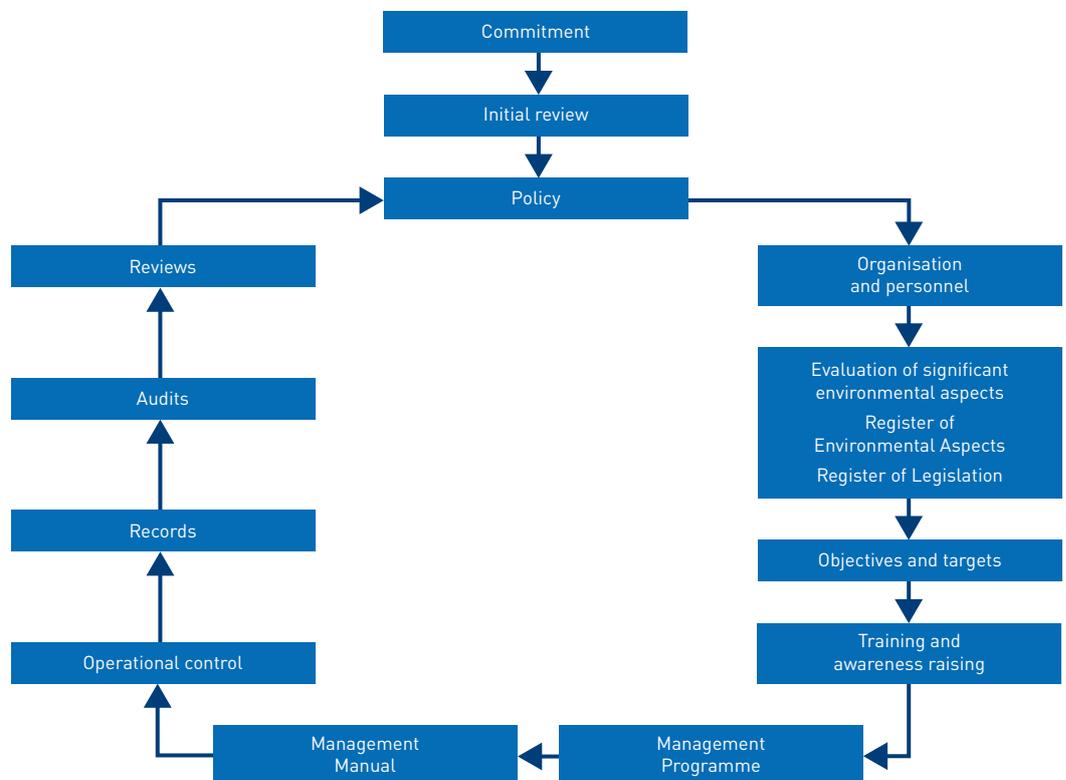
1.4 Types of EMS

There are three strategies available to organisations wishing to implement a formal EMS:

- develop their own in-house EMS;
- follow the guidelines of the international standard ISO 14001, the EU Eco-Management and Audit Scheme (EMAS)[1] or the British Standard BS 8555 (designed specifically for small and medium sized organisations), but do not pursue formal ISO 4001 certification or EMAS registration; and
- pursue formal ISO 14001 certification or EMAS registration.

All three strategies are **voluntary**, but differ in their scope and approach. The choice depends on what is right for your organisation. The WRAP Resource Efficiency Helpline (0808 100 2040) may be able to help you decide what is best for your circumstances.

1.4.1 The advantages of a formal approach

A formal approach not only increases the commitment for environmental improvement across the organisation, but also identifies opportunities for improvements and cost savings on an ongoing basis. Achieving ISO 14001 certification or EMAS registration may increase the credibility of your EMS with customers and suppliers, as they are internationally recognised standards. BS 8555 is a British Standard (published in April 2003), but has particular merits for smaller organisations.

Many organisations have found that, after implementing a formal EMS, the cost saving realised has significantly outweighed the expenditure in achieving it. The disadvantages of adopting a formal standard often stem from the introduction of unnecessary bureaucracy.

An EMS contains several features present in a quality management system (QMS) and there may be advantages to integrating the two systems. There are differences between an EMS and a QMS, but they are both fundamentally concerned with ensuring that specific management objectives are met.

There is a growing international consensus that these standards should align as closely as possible, thus helping organisations develop integrated management systems. However, it is not appropriate to simply combine EMS and QMS elements. Instead, the emphasis should be on integrating environmental issues into the existing management structure of an organisation.

BS 8555

The phased EMS implementation approach used by BS 8555[2] and piloted through the Institute of Environmental Management Assessment (IEMA) Acorn Scheme breaks down the process of installing a formal EMS into five Phases. A sixth Phase allows organisations to develop systems, with the possibility of seeking ISO 14001 certification or EMAS registration.

BS 8555 also incorporates ISO 14031:2000 that gives guidance on the design and use of environmental performance evaluation.

Phase 1   Commitment and establishing a baseline

Phase 2   Identifying and ensuring compliance with legal and other requirements

Phase 3   Developing objectives, targets and programmes

Phase 4   Implementation and operation of the EMS

Phase 5   Checking, auditing and review

The introduction of BS 8555 allows organisations that do not possess the resources to implement ISO 14001 or EMAS, but which have made progress in environmental management, to receive acknowledgement of their efforts.

An independent inspection scheme has been developed by the Institution of Environmental Management and Assessment (IEMA) which offers accredited recognition for organisations evaluating and improving their environmental performance through the phased implementation of an EMS. Full details of the Acorn Inspection Scheme are given on IEMA's website (www.iema.net/acorn).

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[1] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:342:0001:0045:en:PDF Regulation (EC) No 1221/2009.
[2] Full title: Guide to the phased implementation of an environmental management system including the use of environmental performance evaluation.

Others organisations including those accredited by UKAS for inspection offer independent inspection services for BS 8555.

For simplicity this document refers only to ISO 14001 and EMAS. For more information about BS 8555 and free advice about its potential benefits for your organisation, please contact the WRAP Resource Efficiency Helpline on 0808 100 2040.

1.5 EMS terminology

As well as the familiar term 'environmental impact', published guidance on formal EMSs uses the terms 'environmental aspect' as defined below.

- **Environmental aspect.** Any element of a organisation's activities, products or services that can interact with the environment. This can mean almost anything an organisation does from industrial processing to office administration.
- **Environmental impact.** Any change to the environment wholly or partially resulting from an organisation's activities, products, processes or services either directly or indirectly. An impact can be adverse or beneficial. An environmental aspect will have a corresponding environmental impact (or even several impacts).

Do not confuse an environmental audit with an environmental review.

- Initial **environmental review** 'kick starts' the EMS.
- Internal **environmental audits** maintain its momentum.
- The management review allows senior management to consider how well the EMS is working.

EMAS – A full list of definitions is provided in Article 2 of the Regulation

ISO 14001 – Terms and definitions are detailed in Clause 3 of the Standard

1.5.1 United Kingdom Accreditation Service[3]

The United Kingdom Accreditation Service (UKAS) is the sole national accreditation body recognised by Government to assess, against internationally agreed standards, organisations that provide certification, testing, inspection and calibration services.

Accreditation by UKAS demonstrates the competence, impartiality and performance capability of these organisations.

UKAS maintains a list of UK accredited environmental evaluators.

[3] www.ukas.com

2 Commitment

The time and resources needed to implement your EMS should be viewed as an investment that will produce high yields in terms of cost savings and thus make the organisation more profitable.

2.1 Overcoming obstacles

Many organisations experience some expression of negativity about the intention to implement an EMS. This can come from management, employees or other interested parties such as shareholders. Such concerns can jeopardise an EMS even before implementation has begun. Some of the common misconceptions surrounding an EMS are discussed below:

- **We don't know what an EMS is.** It is important to explain the basic aims and benefits of an EMS to all interested parties early on in the process – perhaps by giving a presentation to the management board or by placing the information on a notice board, or by featuring it on the organisation's intranet or in a newsletter.

- **We don't have any environmental issues.** Any organisation that buys raw materials, uses energy and water, receives and makes deliveries, uses packaging or produces liquid/solid waste has an impact on the environment.

- **We don't have the time or the resources to implement an EMS.** This is a common concern and one to which there is no single, straightforward answer. However, an EMS will help your organisation to become more efficient by reducing waste generation and the consumption of raw materials and utilities. The time and resources needed to implement an EMS should be viewed as an investment that will produce high yields in terms of cost savings and thus make the organisation more profitable. Increasing numbers of organisations have already invested in an EMS and are reaping the benefits.

- **Does an EMS have to be implemented across the whole organisation?** An EMS does not have to be implemented across the whole organisation. It can be piloted or implemented in one part and then rolled out to other sites/facilities or operational areas as and when required.

- **No one in the organisation is trained to implement an EMS.** One or two members of staff will need to have an in-depth knowledge of the EMS. However, most employees just require an overall understanding of the environmental issues relating to the job they do. By using the guidance in this document or following the requirements of a recognised standard such as ISO 14001, it is possible to implement an EMS without the need for additional 'expert' or third-party training. Whether carried out by external parties or undertaken in-house, training can be relatively inexpensive and can be scheduled to avoid any operational disruptions. This is particularly true where a 'train the trainer' approach is applied (i.e. a person or small group is trained to then carry out further training within the organisation).

- **Will it cost money?** Almost invariably, the implementation of an EMS entails some costs. These vary considerably and depend upon the size of the organisation, the number of sites involved, the number of employees and the level of existing in-house expertise. If costs are a major concern, then carrying out a simple cost-benefit analysis will help to estimate potential savings. A walk around your site will probably highlight a number of no-cost or low-cost opportunities that will produce significant cost savings and thus offset the initial cost of implementing the EMS.

2.2 The importance of top-level commitment

Although an EMS needs to be adopted at all levels in an organisation, its effectiveness will depend on the level of commitment from the managing director and other senior staff.

Therefore, before starting to design the system, it is essential to obtain the full commitment of senior management to the aims and objectives of your EMS.

The benefits that senior management commitment gives an EMS include:

- importance within the organisation;
- a consistent approach throughout the organisation (i.e. setting an example from the top);
- gaining the commitment of other key members of the organisation; and
- authorisation to use other available resource (i.e. staff time and budget).

One of the easiest ways of securing commitment is by estimating the potential cost savings from adopting an EMS. For example, calculate the annual costs of water, gas, electricity and waste disposal for your organisation by looking at the bills from the previous 12 months. As a general rule, it should be possible to cut the costs of these services by at least 10% to 15% without substantial capital expenditure.

The commitment of senior management is important in obtaining sufficient time, resources and money to achieve continual environmental improvement through an EMS.

3 Organisation and personnel

Many organisations have difficulty deciding who should be responsible for implementing their EMS.

3.1 Responsibility for implementation

Sharing responsibility for the implementation of an EMS across all levels will enable the organisation to get the most out of it. Many organisations have difficulty deciding who should be responsible for implementing their EMS. Some will be in a position to appoint an environmental manager and some will not. If you fall into the latter category, you need to allocate the time to someone with similar work responsibilities and skills.

The person responsible for implementing an EMS is described in ISO 14001 as the Management Representative. This document also uses this term.

3.1.1 The Management Representative

The Management Representative is responsible for:

- undertaking the initial review;
- implementing and maintaining the EMS;
- gathering, organising and disseminating information;
- co-ordinating inputs from other people with complementary responsibilities;
- reporting environmental performance to senior management;
- delegating tasks and establishing deadlines; and
- producing, maintaining and controlling the EMS Manual or Management Manual.

The Management Representative's key functions are:

- communication;
- co-ordination;
- motivation; and
- training/raising awareness of all employees.

The Management Representative should possess the following qualities:

- some experience of environmental, health and safety issues; and
- reasonable knowledge of the processes carried out at your site(s).

3.2 Seeking help from other people

Many organisations have found that it has taken some time to implement their EMS because the person responsible has other roles with an equal call on their time.

The Management Representative should seek help from the:

- **site/process engineer** – much of an EMS revolves around greater efficiency from process operations and monitoring. Therefore, it is logical for the person with responsibility for monitoring and maintaining process equipment to be closely involved in the development and maintenance of your EMS;
- **health and safety manager** – much of the information required under health and safety legislation is applicable to an EMS. Given these close links, the health and safety manager should also be asked to help develop your EMS;
- **quality assurance manager** – if your organisation has a quality assurance system, the documentation procedure is likely to relate to EMS requirements. The department/individual responsible for quality assurance in your organisation should, therefore, be able to help develop procedures and documentation; and
- **purchasing manager** – in addition to providing information about your raw material and utility costs, the purchasing manager will need to be involved if liaison with suppliers is required.

TIP: During the development of your EMS, it may be worth employing a student on work experience or a graduate placement to provide temporary assistance in gathering data.

3.3 Environmental management team

Setting up an environmental management team will help you implement and operate your EMS effectively. Depending on the size and nature of your organisation, this team can be the entire workforce (organisations with up to 10 employees) or a core group of people representing different departments or operational areas together with a member of senior management (to provide top-level commitment). Everyone with primary responsibilities within the EMS should be a member of the team.

Although individual members and their level of involvement will depend on the organisation, team members can include the:

- managing director;
- environmental manager or Management Representative;
- works director;
- quality manager;
- maintenance engineer(s);
- shift foremen;
- works engineer; and
- human resources/training manager.

The environmental management team has a vital role in planning the implementation of the EMS and further embedding the process into general work practice. The specific role of the team should be to:

- attend regular team meetings that follow an agenda and are minuted – these documents will provide records for the management review process;
- assist with the implementation of the EMS;
- encourage other staff to be involved; and
- draw up action plans to ensure that improvements are made and that progress is monitored.

Each member of the team should have clearly defined responsibilities. It is also important that specific tasks are assigned to individuals (e.g. workshop manager, section head and environmental manager).

TIP: You may find it helpful to set up smaller project teams or working groups, which should be asked to report back to the environmental management team.

3.4 Communication

Commitment to a project at the proposal stage can soon wane, or even be withdrawn, if things do not go to plan or circumstances or individuals change. It is important to keep management and staff informed. All too often new schemes start off with good intentions, but enthusiasm can flag if people are not kept up to date with what is happening. Effective communication can ensure engagement and assist to embed principles into working practices.

Communication cannot be overemphasised. The more employees are involved in the EMS, the more committed they will be and the easier it will be to implement the system effectively. An edict from senior management on its own will only achieve short-term success. To ensure continual improvement and long-term success, training and communication are essential.

- Before beginning your environmental review, let employees know what is happening and encourage them to start thinking about the part they can play.
- Communicate with employees (e.g. using an environmental notice board, internal memos, meetings, intranet, team briefings and letters).
- Ask employees for their ideas. Normally, those doing a job every day will have ideas about how things can be done more effectively. Ensure that these ideas are acknowledged and are not ignored.
- Be open, let employees know that some decisions are not set in stone.
- Provide feedback both good and bad.
- Make sure employees understand and believe in any procedures introduced as part of the EMS through suitable training.
- Set up short, but frequent, environmental management team meetings and make sure line managers are brought into the process.

REMEMBER: Everyone gains, professionally and personally, through effective communication. These skills should be embedded within your organisation. It requires a commitment, but the return on the investment is well worth the time and energy.

3.5 Resources needed

Before implementing your EMS, it is important to consider what will be needed in terms of time and other resources.

The time taken to implement an EMS is typically between 12 and 18 months, though there is no standard timescale; it will depend on:

- the organisation;
- site circumstances;
- the experience of the personnel involved; and
- the type of EMS chosen.

TIP: Delegation and team working can help to reduce the time taken significantly.

Tasks include:

- administrating the system;
- monitoring goals and targets;
- helping to produce and revise work procedures;
- arranging for training for new employees;
- adapting the system to accommodate changes in regulatory controls and manufacturing processes; and
- liaising with external consultants.

Auditing the system and ensuring that any corrective actions are carried out will take half a day a week. The internal auditor(s) should be allowed between 3 and 4 hours a week to carry out one or two audits.

While this may seem a lot of staff time, remember that 20% of the salary of a senior employee is often less than the anticipated cost benefits (i.e. between 10% and 15% of the combined cost of utility consumption and waste disposal). In addition, do not assume you are starting from scratch – it may be possible to build on existing procedures.

Senior management should allocate sufficient time for regular management review meetings and for considering requests from the Management Representative for improvement measures involving capital expenditure. If your organisation has a QMS, the management review can be linked to similar procedures.

3.6 Using an external consultant

Asking an external consultant to help may reduce significantly the time spent on implementing your EMS. Although this will cost money, it may save you time and allow you to benefit from the consultant's experience. However, it is essential you provide the consultant with a clear brief as part of the written contractual agreement.

There may be cases where you need to get specialist advice and assistance, particularly in the areas of legal compliance, environmental aspects and impacts, emergency planning and environmental auditing.

When seeking outside help, check that potential consultants have the necessary experience and qualifications. Choose an environmental specialist who is familiar with the particular issues associated with your sector and who understands staff needs. A consultant specialising in the quality standard ISO 9000, who doesn't have significant EMS experience, is unlikely to have sufficient expertise.

TIP: A consultant does not negate the need for an on-site Management Representative; an organisation must take ownership of the EMS to ensure continuous improvement.

4 Initial review

The initial review will give you the opportunity to take a 'snapshot' of your organisation's attitude to environmental issues and its actual performance, problems and opportunities.

4.1 Introduction

Once you have assessed the resources needed, gained commitment and started raising awareness for the EMS, you can start carrying out an initial review. There are four key areas that this review should cover.

- Identifying environmental aspects of your activities and their impacts associated with normal operating conditions, abnormal conditions (such as start-up and shut-down) and emergency situations.
- Assessing relevant legislation.
- Reviewing existing environmental management practices and procedures.
- Evaluating previous emergency situations and accidents.

It will also enable you to:

- prepare/revise your environmental policy;
- identify opportunities to improve performance (e.g. improve process efficiency, and reduce waste generation, water use and energy consumption); and
- set objectives and targets for improvement.

4.2 The purpose of the initial review

During the implementation of an EMS, the initial review is the first step in which an organisation begins to consider systematically all the factors driving the complex relationships it has with the environment. The initial review will give you the opportunity to take a 'snapshot' of your organisation's attitude to environmental issues and its actual performance, problems and opportunities. In particular, the initial review is designed to:

- identify the ways in which site operations have an impact on the environment;
- establish which of these impacts are significant and in need of improvement;
- identify breaches or potential breaches of legislation;

- identify relevant EMS documentation which needs to be put in place;
- start to quantify emissions, discharges and material/utility use; and
- identify and prioritise opportunities to improve performance and reduce waste arisings.

A comprehensive environmental review will help you to implement either an informal or a formal EMS. The output of the review should enable you to:

- start making policy commitments or check progress against your current policy; or
- draw up and implement an action plan to deal with the issues arising.

REMEMBER: Whether you have an EMS or not, you must comply with UK environmental legislation and be able to demonstrate compliance to the appropriate regulatory authorities.

4.3 Gathering data

The main tasks involved in an initial review are data gathering and analysis.

Worksheets 1 and 2 (see Appendix) will help you with these tasks:

- Worksheet 1: Documents needed for an initial review; and
- Worksheet 2: Initial review.

The first worksheet identifies the documents needed to determine your organisation's environmental aspects and impacts. Note that your organisation may not have, or even need, all this information – it will depend on your circumstances.

This worksheet should be used by the Management Representative as a checklist when gathering data for the review. For the review to be effective, all documents should be made available and filed (with copies) for future reference.

The second worksheet, which is divided into six sections, can be used by the Management Representative to collect the information needed for an initial review of the site. The six sections cover:

- site issues;
- utilities;
- inventory of raw materials;
- aqueous effluents;
- solid wastes; and
- emissions to atmosphere.

Some sections may not be relevant to your organisation or you may need to expand the worksheet to cover other areas of interest such as:

- the site's history;
- the site setting and natural environment;
- management structure and responsibilities;
- management systems;
- site operations;
- general health and safety issues;
- materials storage and handling; and
- noise and vibration.

TIP: To ensure that the figures entered in this form are comprehensive and accurate, the Management Representative should carry out a site survey rather than relying solely on paper records. You may need to interview the relevant operators and managers to obtain some of the information.

The information gathered by the Management Representative can also be used to:

- review existing practices and procedures to determine if improvements are needed;
- review past incidents and take action to improve performance; and
- identify breaches – or the risk of breaches – of legislative requirements and review management control.

Once the review has been undertaken, your organisation is in a better position to:

- prepare/revise your organisation's environmental policy;
- compile a Register of Environmental Aspects and identify relevant environmental legislation;
- identify opportunities to save money by reducing waste; and
- set site-specific objectives and targets for improvement.

5 Environmental policy

The policy is the driving force behind the objectives, targets and management programme of your EMS.

5.1 Introduction

An environmental policy is a written statement outlining your organisation'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 organisation's aims and objectives and forms the basis for its EMS;
- is endorsed and actively supported by senior management and accepted by all staff;
- allows management to communicate its aims and objectives to employees and other interested parties, including shareholders, customers and suppliers; and
- should be part of the business strategy.

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 organisation.

Writing an environmental policy is a voluntary undertaking in the UK, and the structure and content are not regulated under UK legislation. For organisations intending to implement a formal EMS including ISO 14001 and EMAS, the environmental policy is a mandatory document providing a cornerstone in the system's development and implementation.

The written policy needs to:

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

For organisations intending to obtain certification to ISO 14001 or registration to EMAS, the environmental policy is the cornerstone of the EMS's development and implementation. Both give guidance on the principles on which the environmental policy should be based. **ISO 14001 and EMAS specify that the environmental policy must include commitments to legislative compliance and continual improvement.**

The order followed by ISO 14001 places writing a policy before identifying significant aspects and legislation. However, many organisations complete these stages before finalising the environmental policy. This ensures that the policy is appropriate for an organisation's activities.

5.2 Communication and review

The environmental policy should be:

- communicated to all staff, contractors and suppliers[4];
- made available to customers, shareholders, other stakeholders and the public[4];
- located in a prominent place on site, such as the reception area; and
- reviewed regularly and, if necessary, revised to take account of developments in your EMS and significant changes to your business activities or operations.

TIP: Start by reviewing the policy after the first six months of operation of the EMS and then annually.

GOOD PRACTICE: Even if your organisation is not intending to adopt a formal EMS, it is worthwhile designing your policy carefully as you will wish to publicise it and your customers will want to see it.

[4] Key requirement of ISO 14001 and EMAS

5.3 Content and style

There is no standard format for writing an environmental policy, but the style should reflect your organisation's culture.

TIP: If your organisation 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 organisations and select the format and style most appropriate to your own.

Consider the following:

- make the environmental policy realistic and practical for your organisation – 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 organisation'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; and
- state the review period.

The targets and timescales stated should be realistic and address overall environmental performance. The policy should be influenced by the findings of the environmental review and should be finalised after this has taken place.

An environmental policy may encompass the following:

- liaison with the local community and how any complaints received will be addressed;
- compliance with the requirements of environmental legislation and approved codes of practice;
- assessment of environmental impact of past, current and future operations and set objectives/targets to reduce these impacts;
- continually seeking to improve environmental performance;
- environmental considerations and criteria in capital investment decisions;
- fostering the commitment of all employees to improve the environmental performance of the organisation;
- use of sustainability principles for all raw materials, supplies and energy efficiency, where achievable;
- aiming to prevent all types of waste generation and to increase the re-use and recycling of waste, and recovery of other value (e.g. energy) from waste;
- reporting publicly on environmental objectives and targets; and
- expecting similar environmental standards from all third parties (i.e. suppliers, vendors and contractors).

An example of an environmental policy is given in Figure 2.

You may also find Table 1, the Policy Writing Checklist, useful.

Figure 2: Example environmental policy

Company X

ENVIRONMENTAL POLICY

Company X is a young firm of environmental consultants, specialising in environmental business support solutions to ensure regulatory and legal compliance. We employ over 450 staff and operate from two sites. Company X provides cost-effective management support for environmental management.

Company X ensures that all activities carried out by the organisation comply with all relevant environmental legislation.

> **The policy should contain a commitment to legislation compliance**

The organisation is committed to the prevention of pollution; we aim to continuously improve our environmental performance through the support and involvement of all employees and any other interested parties. In recognition of this, we have implemented an environmental management system.

> **The policy should contain a long-term commitment to pollution prevention and contain a commitment to continuous environmental improvement**

We aim to:

- actively reduce waste through our resource efficiency policy, which describes our principle of preventing, re-using and recycling all our office waste;

- maximise efficient use of natural resources through office best practice guidelines;

- continue to operate a purchasing policy to ensure as much material as possible is sourced from recycled material;

> **This section should contain some broad aims that are related to the organisation's identified environmental impacts (e.g. waste, energy, water, raw materials)**

- reduce the amount of energy consumed during office hours by efficiently using equipment and operating our 'switch off when not in use' policy;

- continue to encourage our clients, suppliers and stakeholders to adopt our environmental principles and develop an environmental management system in their own organisations; and

- review our EMS including this policy and publish an Environmental Statement annually.

Signed: Bea Green   **April 2012**

Company Director   Issue 1

> **The policy should be signed by the most senior manager and be reviewed on a yearly basis and made available to the public and other stakeholders.**

Table 1: Policy writing checklist

Issue		Comments
Purpose	■ Why are you creating an environmental policy?	
Scope	■ Does it cover business unit/division/ entire organisation? ■ Does it give a brief description of organisation's activities? ■ Does the policy reflect the organisation's values and principles?	
Objectives	■ Have you identified about five key environmental objectives? ■ Are these directly relevant to your organisation? ■ How were these identified? ■ Are they achievable? ■ Do they reflect your significant environmental impacts?	
Legal requirements	■ Do you intend to meet/exceed legal and other requirements?	
Responsibilities	■ Who is responsible for overseeing and implementing the policy?	
Communication	■ How will the policy be communicated to employees? ■ How will it be communicated to customers, suppliers, contractors and other interested parties?	
Review	■ Is this document to be reviewed annually/periodically? ■ By whom and under what circumstances?	
Authorisation	■ Who is responsible for authorising the policy? ■ Is evidence included? ■ Is it dated and subject to version control?	
ISO 14001 requirements	■ Have you included a commitment to prevent pollution? ■ Have you included a commitment to continual improvement?	

5.4 Implementing the environmental policy

Developing and writing the policy are just the first steps. The environmental policy must then be put into practice. The environmental policy needs to be a living document that is implemented during day-to-day activities.

Once the policy has been completed it must then be communicated to others.

5.4.1 Internal communication

Make sure that all employees know about your environmental policy. Check that employees have received and understood this information. Below are some examples of what you can do to actively promote your environmental policy to all employees.

- Present the policy at a meeting for all employees.
- Post the policy on the office walls, the reception area, canteens, etc.
- Give every employee a personal letter from the managing director accompanied by a copy of the environmental policy with their pay slip.
- Publish the document in an internal newsletter.

- Include the environmental policy in induction training or hold formal environmental training to introduce the new policy to all staff.

5.4.2 External communication

Decide whether you want to actively promote your policy or to provide it to external parties only upon request. If you want to promote the policy, this can be done by:

- Putting a copy on your website;
- publishing your new environmental intentions in an external brochure/booklet;
- writing an environmental commitment in your organisation's annual report; and
- taking advantage of advertising opportunities.

5.5 Close the loop

The policy must be reviewed on a regular basis. To check that your organisation's current activities comply with the environmental policy, a review needs to be undertaken regularly – usually on an annual basis. If your organisation's business activities or operations change significantly, the policy may need to be amended.

6　Significance of environmental aspects

The information gained during the initial review will help you to prepare a list of environmental aspects for your organisation. Aspects deemed significant for your organisation are the ones your EMS will seek to control.

6.1　Identifying your environmental aspects and impacts

Identifying and understanding your organisation's environmental aspects and impacts will help you to reduce adverse impacts on the environment. Preparing a list of aspects and impacts will also help you identify opportunities to reduce waste and thus achieve significant savings through reduced raw material purchase and waste disposal costs.

The most important issue is to recognise and record your organisation's environmental aspects and impacts, and decide which ones are significant for your business.

The information gained during the initial review will help you to prepare a list of environmental aspects for your organisation. Aspects deemed significant for your organisation are the ones your EMS will seek to control.

Once you have started to identify your environmental aspects, you can begin to compile a register of them.

The **Register of Environmental Aspects** should contain:

- a list of all potential environmental aspects;
- an assessment of their significance; and
- the action you propose to take to reduce the impacts associated with those aspects that have been identified as significant.

If applicable, develop a process flow diagram showing the main inputs and outputs to the different stages of your process. Aspects can be:

- direct, such as packaging waste and water use; and
- indirect, such as the performance of suppliers, contractors, product design and distribution.

Use Worksheet 3: Identifying significant environmental aspects (see Appendix) to help you compile your Register – adapting it as necessary to suit your organisation's circumstances.

Compiling your Register of Environmental Aspects may be the stage where you need most help and could benefit from some free advice from WRAP. Call the WRAP Resource Efficiency Helpline on 0808 100 2040 to find out more.

6.2　Identifying significant environmental impacts

Having established which aspects have or can have an impact on the environment, the next task is to assess which are significant for your organisation. This will help you to decide the key issues for your EMS to address and prioritise your actions for improvement.

Assessing significance will allow you to make effective use of your resources. It will enable you to concentrate on taking action to reduce major impacts and avoid having to try to deal with all impacts (including those that are not deemed significant).

Environmental aspects that exhibit significant environmental impacts must be considered when setting the objectives of your organisation's EMS.

To complete your Register of Environmental Aspects:

- evaluate each of the environmental aspects listed for its significance for your organisation; and
- record whether or not you think the environmental aspect is significant and the actions to be taken to address it.

A formal EMS requires all the environmental aspects of an organisation to be considered including those that may not be significant (e.g. use of company/pool vehicles, use of paper, production of domestic sewerage and canteen wastes).

EMAS requires a Register of Environmental Aspects to be maintained. If seeking certification to ISO 14001, documentary evidence is required to show that environmental aspects have been considered.

6.2.1 Methods for evaluating significance

There is no set approach for evaluating significance. You should choose the approach that is most appropriate for your organisation, starting with an evaluation of significance under normal operating conditions.

One simple method is to judge the significance of the aspects against a number of criteria (see Figure 3).

Numerical rating/weighting

Alternatively, you can develop your own point-scoring system by awarding a numerical score to each environmental aspect. Aspects which score more than an agreed amount could be considered 'significant'. In the example in Table 2, each environmental aspect is first awarded a score to reflect the relative importance under normal operating conditions of:

- legislation (current and forthcoming);
- the severity of environmental impact (e.g. toxicity, acidity, greenhouse gas emissions and ozone-depleting substances);
- interested parties (e.g. the reaction of the local residents and environmental interest groups); and
- quantity (e.g. the volume of the waste stream or the frequency of occurrence at the site).

The scores are then multiplied by a weighting factor, which reflects the overall importance of the aspect at a particular site or organisation. You should adjust these as necessary to reflect your organisation's concerns. Adding the four together produces a total score for this environmental aspect under normal operating conditions. It is then up to you to decide where to set the threshold score for environmental significance.

Repeat the exercise for all identified aspects.

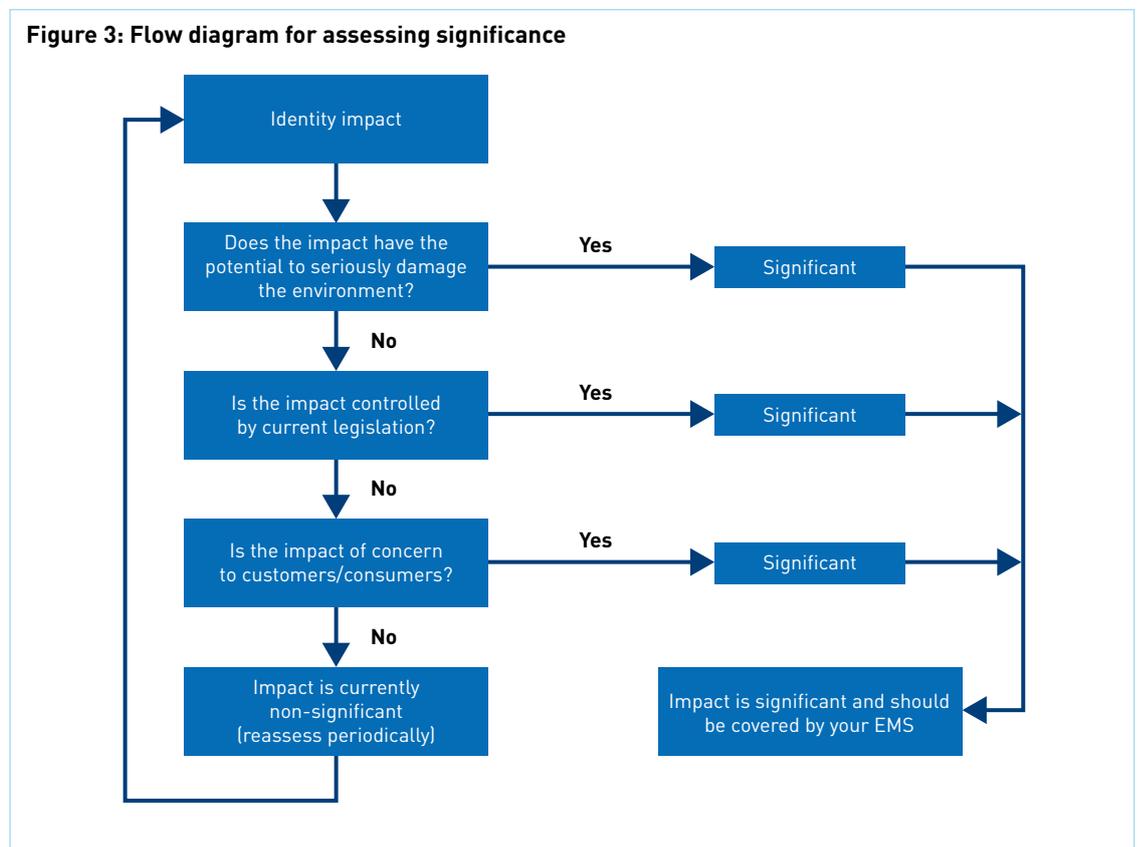**Figure 3: Flow diagram for assessing significance**

Table 2: Matrix to score an environmental aspect under normal operating conditions

Environmental aspect								
	Score				**Weighting factor**			
	3	**2**	**1**	**0**				
Legislation	Existing	Impending		None	x	2	=	**a**
Environmental impact	Known detriment	Possible detriment	Limited detriment	No detriment	x	3	=	**b**
Interested parties	Considerable interest	Moderate interest	Little interest	No interest	x	2	=	**c**
Quantity	High	Medium	Low	Nil	x	3	=	**d**
Normal operating conditions					**Total score** = (a + b + c + d)			

TIP: You may consider some factors so important that rather than applying a weighting, the aspect under consideration should immediately be deemed 'significant' if one particular factor has a high score.

GOOD PRACTICE: When an organisation is seeking certification/registration to a formal EMS standard such as ISO 14001 or EMAS, the evaluator requires evidence that the organisation has assessed its environmental impacts formally and logically. A system that rates and scores the relative significance of each aspect typically fulfils this requirement.

Different operating conditions can have a tremendous effect on the significance of an environmental impact. For example, the use of returnable plastic packaging may not be considered to have a significant environmental impact under normal circumstances. However, when exposed to heat or it catches fire, noxious fumes may be released resulting in harm to human health or the environment, and potential litigation from employees, members of the public or regulators.

Therefore, it is important to also consider your identified environmental aspects under other operating conditions. Other operating conditions cover:

- abnormal operations (e.g. factory start-up after a holiday shutdown period);

- accident/emergency (e.g. fire or accidental damage);
- past activities (e.g. activities of former site occupants or burial of waste on site); and
- planned activities (e.g. new product or production line, modified equipment or site development).

Adding the scores together will produce a total score under other operating conditions (see Table 3). This total score is used to rank the environmental aspects under other operating conditions.

Under this system, a significant environmental aspect is one which scores more than a certain number of points under either normal or other operating conditions. Some aspects 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.

Whichever method you decide to use to evaluate significance, it is important to record the reasons for your decision. If you need further advice on assessing the significance of your environmental aspects, contact the WRAP Resource Efficiency Helpline on 0808 100 2040.

Table 3: Matrix to score an environmental impact under other operating conditions

Environmental aspect						
Score						
	12	**6**	**3**	**0**		
Abnormal operations		Increased environmental impact	No change	Reduced environmental impact	=	**a**
Accident/ emergency		Increased environmental impact	No change	Reduced environmental impact	=	**b**
Past activities	Evident/ requires action	Possible damage/ difficult to evaluate		No damage	=	**c**
Planned activities		Increased environmental impact	No change	Reduced environmental impact	=	**d**
Other operating conditions				**Total score** = (a + b + c + d)		

6.3 Review of Register of Environmental Aspects

Because the relative significance of your environmental aspects may change over time, you should aim to review the list and significance assessment regularly. New legislation, targets being met or the introduction of new processes or facilities may affect the significance of your aspects, create new ones or eliminate others. For example, replacing cardboard transit packaging with returnable plastic crates may eliminate cardboard from the packaging waste stream.

GOOD PRACTICE: Review environmental aspects and impacts at least once a year, and revise or complete from new when:
- projects or alterations are introduced, resulting in new or significantly modified activities, products or services;
- new information is received (e.g. impending relevant environmental legislation, complaints, enforcement notices, new ISO 14000 series standards and technological progress); and
- substances that can have an adverse effect on the environment are introduced into the business activities.Worksheet 3: Identifying significant environmental aspects

This worksheet (see Appendix) has two parts:

- Worksheet 3A: Contains a checklist of business areas giving rise to environmental aspects.
- Worksheet 3B: Use the first four columns to list all your organisation's environmental aspects and impacts under different operating conditions. Then assess the significance of each aspect and record your conclusions in the fifth column. Use the last column to document the proposed action to reduce significance.

Worksheet 3B forms your Register of Environmental Aspects.

7 Register of Legislation

Maintaining a Register of Legislation can help your organisation to comply with existing legislation and make you aware of impending legislation. This will also help you identify the processes with a significant impact on the environment.

7.1 Listing relevant legislation and other requirements

The pace of quantity, complexity and range of regulations is growing all the time in the environmental field. Increasingly stringent and far-reaching environmental legislation has come from Europe and the UK. Additionally, the enforcing authorities have shown that they will not hesitate to prosecute when necessary.

Therefore, regardless of whether or not you have an EMS, it is important for your organisation to:

- ensure it complies with UK environmental legislation; and
- be able to demonstrate compliance to the appropriate regulatory authorities.

Maintaining a Register of Legislation can help your organisation to comply with existing legislation and make you aware of impending legislation. This will also help you identify the processes with a significant impact on the environment.

Knowledge of relevant legislation is an essential requirement of any EMS and is a useful method of summarising your obligations for compliance.

EMAS requires a list – 'Register of Legislation' – of all relevant statutes and approved codes of practice (e.g. process guidance notes) relating to your activities, products or services.

You do not need to hold full copies of all these documents, but the relevant people in your organisation must understand their requirements.

However, you will find it useful to hold copies of important legislation and documents specifying numerical limits and essential techniques.

Use Worksheet 4: Register of Legislation to help compile your record of key documents affecting how your organisation operates (see Appendix).

8 Objectives and targets

Where regulations, permits and consents contain specific compliance requirements, these should be incorporated into your objectives and your mechanism for setting targets.

8.1 Setting objectives and targets

The aim of an EMS is to manage environmental issues so as to achieve continual improvement. An EMS does not guarantee improved environmental performance; accidents and incidents can still happen. However, it does allow quick detection, mitigation and, if necessary, remediation of any pollution incident.

To bring about continual improvement, you need to set specific objectives broken down into realistic targets. These should be based on the information collected during your initial review and should aim to address your significant environmental aspects.

- **Objectives** are the goals that the organisation sets itself for achieving improved environmental performance. They indicate the organisation's aim regarding particular significant issues. For example, an objective could be to reduce waste going to landfill.
- **Targets** provide interim points on the way to achieving objectives. One objective can have several targets. An example target supporting the objective above could be to reduce waste to landfill by 20% by 2015.

Objectives and targets can be used to motivate employees and measure cost savings.

Where regulations, permits and consents contain specific compliance requirements, these should be incorporated into your objectives and your mechanism for setting targets.

Setting objectives and targets is based on the information obtained during the initial review and the identification of significant environmental aspects. When you set objectives and targets, it is important to:

- identify the individual or department responsible for ensuring that they are met;

- identify someone to oversee the implementation of changes to ensure that targets are met; and
- ensure that the measures taken do not indirectly create another significant environmental aspect.

Identifying the opportunities to improve performance requires communication with the environmental management team. The team members are the ones who know the processes and they will probably have ideas for improvement.

TIP: If it will be expensive or difficult to achieve a particular objective, and legislative compliance is not an issue, you may find it more worthwhile to give priority to some easier targets. Quick paybacks will help to maintain interest in the EMS and obtain commitment from all levels of the organisation.

When setting targets, be **SMART**. All targets should meet these criteria:

- **S**pecific – each target should address one issue only;
- **M**easurable – your targets should be expressed quantitatively, for example 10% reduction/unit;
- **A**chievable – your targets must be something you can achieve. For example, a zero waste target is probably not achievable for most organisations;
- **R**ealistic – your targets should be challenging but not overly ambitious. Remember they can always be revised once they have been met; and
- **T**ime-bound – your target must be assigned an end date for delivery.

It is important that agreed objectives and targets are communicated to all staff. Staff awareness and acceptance of these objectives and targets are essential to their success.

Use Worksheet 5: Objectives and targets for an improvement programme (see Appendix), to help you record your objectives and targets based on your environmental policy, your significant environmental aspects and your Register of Legislation. This will provide a framework for the development of your continual environmental improvement programme. Also decide and record the timescale and responsibility for achieving these targets.

Targets should be measurable in absolute terms and be clearly documented, along with any assumptions necessary. For example, setting an energy reduction target of, say, 10% is vague and requires qualification. One obvious variable that affects energy consumption is the level of production.

An emission reduction target should also be quantified in absolute and specific terms. Waste-related targets could be classified into two parts – one concerned with reducing the amount of waste generated in relation to a measure of production and the other with increasing the proportion of residual waste that is recycled.

Assessment-based objectives such as supplier evaluation, site drain surveys and raw material substitution should be broken down into individual tasks with expected deliverables and dates.

8.2 Continual improvement under ISO 14001 and EMAS

To achieve certification/registration, it is necessary to show that objectives and targets have been set, and to demonstrate your performance towards achieving them. You must have a monitoring programme and keep records of your monitoring regimes.

Although there is a requirement for continual improvement, there is no set standard or guidance concerning the rate at which you improve. An organisation is free to decide its continual improvement programme, taking into account the expectations of stakeholders and other interested parties. For example, an organisation aiming to reduce its energy consumption by 1% per year would not be penalised by an evaluator compared with an organisation planning to reduce its energy consumption by 25% per year. The requirement is merely to specify reduction levels that are measurable and achievable.

9 Management programme and Management Manual

9.1 Developing an action plan

Once you have agreed your objectives and targets, the next stage is to develop a continual environmental improvement programme designed to give priority to key areas for action and to deliver the targets you have set.

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

- prioritise the areas in which improvement is needed;
- set a realistic timescale and budget for each objective;
- ensure that you have the necessary resources, such as manpower and finance;
- assign responsibility for each objective;
- obtain the support of management/ employees for the improvements;
- hold short and regular meetings to report progress;
- establish new deadlines if deadlines prove difficult to meet; and
- review and update the environmental improvement programme regularly.

TIP: Software packages are available that can provide a powerful and effective tool for managing your environmental, quality and production information. These can be helpful when implementing and maintaining a formal or an informal EMS. However, they are only as effective as the person using them and should not be used to provide a 'quick-fix' solution for someone with little experience of environmental matters.

Although there is a requirement for continual improvement, there is no set standard or guidance concerning the rate at which you improve.

9.2 Management Manual

Documentation is necessary to describe and support the EMS. The Management Manual (sometimes referred to as the EMS Manual) forms the basis of your organisation's EMS and should, therefore, be relevant to the operations and processes employed.

The Manual:

- provides a central point of reference to the implementation and maintenance of the overall system; and
- acts as a signpost to other documents within the system. It is usually produced, maintained and controlled by the Management Representative.

One possibility is to use a consultant to help you design and compile a Manual. If you decide to undertake this task yourself, try to keep the system as simple as possible. Remember, the more procedures you produce, the more you will have to control, maintain and audit.

TIP: Keep the Management Manual short and use flow diagrams where possible to reduce the amount of text.

GOOD PRACTICE: A simple way of creating a Management Manual is to follow the headings set out in a recognised standard such as ISO 14001. Under each heading, briefly describe your approach to tackling that element and signpost the location of supporting documentation.

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

- the organisation's environmental policy;
- a chart showing the organisational structure;
- a statement of the organisation's objectives, targets and its environmental improvement programme;
- the responsibilities and authority of employees involved in the EMS, including the Management Representative; and
- documented procedures for all processes and activities that have a significant potential environmental impact.

9.3 Procedures

To monitor and control the impacts that certain processes or materials may have on the environment, procedures should be defined and made available for easy reference at all times.

These documented procedures:

- should be easy to understand;
- should be updated as necessary;
- should be written with a view to increasing efficiency and reducing waste; and
- will ensure the smooth functioning of the EMS.

Procedures are usually split into:

- **system procedures** – those relating to the operation of the EMS itself (e.g. auditing procedures); and
- **operational procedures** – those relating to the control of identified significant aspects (e.g. waste management procedures).

Examples of those areas for which organisations could require procedures are given in Table 4.

Use Worksheet 6: Procedure (see Appendix), as a template to help you prepare and record your procedures.

Table 4: Examples of procedures

Area	Example procedures
System procedures	
Policy	■ Environmental policy review ■ Training ■ Documentation control
Legislation	■ Register of Legislation ■ Evaluating legislative compliance
Environmental aspects	■ Register of Environmental Aspects
Environmental management	■ Environmental audits ■ Management system review
Operational procedures	
Emissions to atmosphere	■ Emissions inventory ■ Emissions monitoring ■ Emissions inspections ■ Refrigerant control ■ Heating and other combustion equipment
Discharges to controlled waters	■ Discharge to controlled waters inventory ■ Discharge monitoring
Energy	■ Energy inventory ■ Energy monitoring ■ Energy auditing
Materials	■ Raw material inventory ■ Packaging assessment
Products	■ Written description of products
Wastes (solid and liquid)	■ Waste classification ■ Waste handling and storage ■ Effluent monitoring
Area	
Transportation	■ Transportation inventory ■ Purchasing policy/driver training
Land	■ Land and premises assessment ■ On-site use of herbicides, etc ■ Land investigation
Change	■ Control of change ■ Environmental assessment of proposed changes/developments
Incidents	■ Recording and reporting of environmental incidents ■ Environmental audits
Emergency	■ Environmental emergency plan
Safe systems at work	■ Safe systems of work ■ Unloading hazardous materials

9.4 Operational control and record keeping

As part of your EMS, you need to demonstrate that your organisation is controlling its significant environmental aspects on a daily basis. Operational controls includes one or more of the following:

- procedures;
- work instructions;
- physical controls; and
- use of trained personnel.

Procedures need to be developed to monitor and control these aspects, making sure that these documents:

- are available for easy reference at all times (e.g. as part of existing quality systems);
- are easy to understand;
- are updated as necessary. 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 (i.e. obsolete documents should be removed and only the current version made available); and

- indicate who has responsibility for investigating and rectifying problems that occur either suddenly or over a period of time.

It is also important to provide relevant employees with detailed instructions on how to operate processes and to carry out activities that could have a significant environmental aspect.

Keeping records will allow you to determine performance compared with objectives and targets.

REMEMBER: Your record-keeping system should be designed to comply with the requirements of any standard that the organisation may seek to achieve.

10 Audits and reviews

10.1 Aims and scope of an internal audit

The aim of an internal audit is to regularly assess whether:

- your site is operating according to the agreed policies, control systems and procedures;
- your site is conforming to planned arrangements and legal requirements;
- your site is conforming to the specific requirements of formal EMS (e.g. ISO 14001 and EMAS); and
- defined objectives and targets are being met.

The ISO series of standards ISO 14010, 14011 and 14012 provide guidance on auditing. For EMAS, the ISO standards are referenced within the Regulation and the evaluator will check audit procedures for compliance against these requirements.

Internal audits involve a systematic inspection and comparison of actual operating methods with the procedures specified in the Management Manual. It should identify and highlight where things are working well and also identify where things need to be improved.

An audit may be performed against either a procedure or an area of operation. The key to a successful EMS is commitment from all employees. If employees are not committed, the system will be difficult to implement or maintain. Audits provide a valuable tool for gauging commitment within different parts of the organisation.

The key areas to assess during the environmental audit include:

- compliance with procedures;
- compliance with policy;
- compliance with objectives and targets;
- adequacy of controls;
- adequacy of emergency procedures;
- areas of lack of control or unacceptable risk;

- employee skills and training;
- contractor behaviour and performance;
- supplier behaviour and performance;
- adequacy of communications;
- whether the general layout of the site poses a risk to third parties, suppliers, contractors or site visitors; and
- whether there are any new potential environmental risks.

It is essential that sufficient resources to carry out the audit are made available. The findings and recommendations of any audit must be reviewed and assessed. Any actions should be implemented according to a specified programme. In some cases, action will need to be taken immediately (e.g. where a lapse in procedures has led to possible non-compliance with legislative requirements).

10.2 Selecting auditors

The people selected to carry out internal audits should:

- have experience of carrying out audits and have received appropriate training; and
- not have direct management responsibility for the procedure or area being audited (i.e. be impartial).

Specifically, auditors need:

- appropriate knowledge of environmental legislation and issues;
- knowledge of the relevant EMS standard(s);
- understanding of the best environmental practices in the industry;
- experience in auditing management systems; and
- appropriate training to undertake the task.

More than one internal auditor may be required, but this also allows cover for holidays and sickness. Colleagues in the industry may be able to provide valuable contacts and the evaluator may also be able to advise you.

10.3 The audit process

Good quality internal auditing will save time, effort and money as the certified accreditor/ verifier should be able to use the results with confidence as the basis for their own assessments.

A systematic approach should be taken that includes:

- planning the audit;
- preparing checklists, including the checks and verifications to be performed;
- obtaining any necessary background documentation (e.g. relevant procedures, emission data and site plans);
- reviewing the EMS documentation;
- conducting and documenting the audit;
- identifying and summarising all non-compliances;
- requesting corrective action (i.e. completion of Corrective Action Request (CAR) forms);
- completing administrative tasks (e.g. having the audit report signed off by the relevant manager); and
- stating the date for the next audit and highlighting if it is different to the audit plan.

Undertaking an audit is straightforward. Determine which procedure or area you are going to audit according to the audit plan. It is common practice to inform the manager responsible for the area or procedure to be audited in advance of the audit. This ensures that staff and documentation will be available during the audit, and that there is no conflict with operational duties or requirements.

When undertaking the audit, keep it simple by asking key questions about the significant areas being audited. You must satisfy yourself that work is carried out in accordance with the applicable procedure and that the supporting evidence is genuine.

Read the procedure(s) applicable to that area and then use Worksheet 7: Internal audits (see Appendix) to prepare an internal audit form by inserting appropriate questions relating to each section of the procedure(s) into the first column. In the second column, use a simple 'yes' or 'no' answer to record against each question whether or not the area under investigation conforms with that part of the procedure. Where a 'no' is recorded, state the reason for this decision in the third column and whether corrective action is required.

Remember, the audit process is designed to provide objective evidence as to the effectiveness of the EMS and not to apportion blame.

- 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 on the audit sheet 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.

10.4 Non-compliance and corrective action

Non-compliances are failures within the system. Usually these relate to differences between how duties are being carried out and those set out in procedures.

When a non-compliance (i.e. a 'no' on the audit form) is recorded, it is the auditor's responsibility to suggest a way of correcting the fault and preventing it from happening again. The auditor should prepare a non-compliance report or 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 (i.e. the timescale for improvement); and
- 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.

TIP: A non-compliance is sometimes 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-compliances, but where the auditor feels that the system could be improved in some way.

Use Worksheet 8: CAR form (see Appendix) to draw up your own corrective action request form.

Any corrective action should be agreed with the person responsible for that area or procedure.

10.5 Audit frequency

The frequency of audits will depend on the significance of your environmental aspects, but **all procedures should be audited at least once a year**. The number of internal audits carried out per month will depend on your organisation's circumstances.

To comply with the requirements of EMAS, all parts of the EMS must be audited between successive Environmental Statements (i.e. at least once every three years). See Section 12.2 for more information on Environmental Statements.

The Management Representative should use the Register of Environmental Aspects to identify:

- areas of high risk (i.e. the most significant environmental aspects); and
- areas where the organisation has failed to meet legal requirements in the past.

The frequency and sequence of audits should be compiled into an audit timetable which shows the area to be audited, the date and time, and the auditor(s) involved.

The audit timetable is normally prepared and co-ordinated by the Management Representative. The Management Representative is also responsible for communicating the results of the audit to senior management.

A well-designed audit with suitable checklists should take between 20 and 40 minutes. However, the process may take between two and three hours the first time each audit is carried out.

10.6 Communicating and reporting

An audit report is essential to ensure that the results of the audit are communicated effectively.

The audit report normally consists of:

- a brief description of the audit's objectives;
- a brief description of the areas that have been audited and who was involved in auditing them;
- a review of the audited areas, highlighting
  - non-compliances (i.e. lapses in either the content or implementation of procedures and records);
  - corrective actions agreed;
  - any other areas of potential risk; and
  - an outline of the opportunities for improvement (e.g. resource efficiency and cleaner technology); and
- a summary list of non-compliances.

10.7 Aims and scope of a management review

The management review allows senior management to consider the effectiveness of the EMS and any changes necessary. It is a formal evaluation of the status and adequacy of the organisation's environmental policy, systems and procedures in relation to environmental issues, regulations, changing circumstances and continual improvement.

The management review should cover:

- environmental performance and progress in achieving objectives and targets;
- compliance with legislation;
- results of internal audits and reports;
- status on actions required in connection with non-compliances;
- new processes and any changes to known environmental issues;
- any changes in circumstances such as
  - operating requirements;
  - any third-party requirements such as customers, suppliers, stakeholders, regulators or in response to complaints;
  - changes in legislation; and
  - new technology;

- the effectiveness of training;
- the need for any revisions to your environmental policy, objectives and targets;
- follow-up actions from previous management reviews; and
- recommendations for improvement.

Management review meetings should be attended by those with either executive responsibility or specialist responsibility. This would normally include:

- the site director or most senior manager;
- the Management Representative; and
- line managers with defined responsibilities.

REMEMBER: These reviews also provide an opportunity to implement resource efficiency and other programmes to deliver significant cost savings as well as ensuring continual improvement in environmental performance.

11 Training and awareness raising

Individuals who are expected to manage particular elements of an EMS and explain them to others need a greater level of training.

11.1 Who needs to know what?

Some parts of the workforce will need more information about environmental issues than others. The amount of information will depend on the level of responsibility assigned to them.

TIP: Start by looking at job descriptions and deciding the level of environmental information needed to carry out particular tasks.

A good way of encouraging involvement in the EMS is to examine whether bonus and suggestion schemes will work for your organisation. Could an existing scheme be adapted to include environmental issues? Such schemes can often be used to motivate and encourage ownership of an EMS.

Certification/registration requires you to demonstrate that employees' training requirements have been identified through a training needs analysis. You will also need to prove that contractors have received appropriate training before being allowed on site.

Basic information

Most employees will benefit from a general awareness training session that:

- highlights the organisation's commitment to environmental management;
- explains why environmental management is being adopted;
- describes what the organisation hopes to achieve from implementing an EMS;
- introduces the organisation's environmental policy; and
- explains how it relates to individuals (e.g. taking measurements, recording waste arisings, segregating wastes, sweeping up solid wastes and switching off hoses when not in use).

In addition, members of the senior management team should receive training to make them aware of their own responsibilities relating to environmental protection.

Greater understanding

Individuals who are expected to manage particular elements of an EMS and explain them to others need a greater level of training. This could include:

- more detailed information about specific elements of the EMS and the environmental concerns related to specific environmental issues;
- an introduction to the environmental legislation governing the issues they are required to manage; and
- an introduction to EMS documentation and procedures.

Those people with direct responsibility for implementing and auditing the EMS should undertake a dedicated training programme (e.g. a recognised external course).

Their training should cover:

- auditing;
- environmental management system standards;
- environmental and other relevant legislation; and
- the external certification/verification process.

Keep records of all training received, with an indication of the course content, dates and duration.

Contractor awareness

Making contractors aware of environmental issues at the site can help to reduce the likelihood of a contractor being responsible for pollution for which your organisation is held liable.

Contractors and suppliers form part of your EMS. Make them aware of their relationship to the EMS and, as a minimum, present them with a copy of your environmental policy.

Depending on their duties on site, a higher degree of awareness may be necessary through specific contractor training.

Contractor training and awareness can include:

- issuing them with a copy of your environmental policy;
- a short introduction to your procedures and requirements by an employee; and
- a presentation highlighting environmental issues around the site.

To prove that contractors have received the correct training, ask them to sign a form to acknowledge that they have received the information (as they do after a health and safety briefing). This will help if you seek external certification/registration.

You may find that environmental training and awareness programmes do not change the culture and thinking overnight. At first, employees often perceive environmental issues in global terms rather than in terms of their working practices. Therefore, it is a good idea to explain the implications for the organisation if procedures are not followed.

It is essential:

- to communicate clearly and simply how the EMS affects departments and individuals;
- that senior management continues to show commitment; and
- to provide a mechanism to ensure that employees are given the necessary training when they change jobs.

Requirements of ISO 14001 and EMAS

ISO 14001 and EMAS require training needs to be identified and for those whose work may lead to a significant impact on the environment to receive appropriate training. Both require employees at all levels to be made aware of:

- the importance of maintaining compliance with the environmental policy and objectives, and the requirements of the management system established under the EMS;
- the potential environmental aspects of their work activities;
- the environmental benefits of improved performance;
- the cost benefits of measures to improve environmental performance;
- how their roles and responsibilities help to achieve and maintain compliance; and
- the potential consequences of departure from the agreed operating procedures.

Assessing the effectiveness of training

A practical way of assessing the effectiveness of training is to conduct realistic 'dummy runs'. Key areas to focus on include chemical spillage, effluent plant failure and fire fighting. The effectiveness of training can be monitored directly through normal working operations. In addition, production meetings can provide a forum for a regular review of procedures and the identification of additional training needs. The EMS audit should include an assessment of the effectiveness of training.

12 ISO 14001, EMAS and BS 8555

A formal EMS requires all the environmental aspects of an organisation to be considered in the review, including those that may not be significant such as the use of company/pool vehicles, use of paper, and production of domestic sewage and canteen wastes.

12.1 Additional requirements of ISO 14001, EMAS and BS 8555

If your organisation decides to seek certification to ISO 14001 or registration to EMAS, this will take more of the Management Representative's time. There will also be the costs of achieving certification/registration to consider.

To implement a formal system, the Management Representative will require more support from the environmental management team. Experience suggests that, on average, each member of the team may spend between 5% and 10% of their time working on sections of the EMS.

However, the time spent by team members will depend on the number of areas and working groups in which they are involved.

A formal EMS requires all the environmental aspects of an organisation to be considered in the review, including those that may not be significant such as the use of company/pool vehicles, use of paper, and production of domestic sewage and canteen wastes.

The phased EMS implementation approach used by BS 8555[5] and piloted through the Institute of Environmental Management and Assessment (IEMA) Acorn Scheme breaks down the process of installing a formal EMS into five Phases. A sixth Phase allows organisations to develop systems, with the possibility of seeking ISO 14001 certification or EMAS registration.

BS 8555 also incorporates ISO 14031:2000 that gives guidance on the design and use of environmental performance evaluation.

Phase 1   Commitment and establishing a baseline

Phase 2   Identifying and ensuring compliance with legal and other requirements

Phase 3   Developing objectives, targets and programmes

Phase 4   Implementation and operation of the EMS

Phase 5   Checking, auditing and review

If seeking certification to ISO 14001, documentary evidence is required to show that environmental aspects have been considered. EMAS requires that a Register of Environmental Aspects is maintained.

ISO 14001 is available from the British Standards Institution (BSI). Copies of the EMAS Regulation and guidance documents can be found on the website of the Competent Body (www.iema.net/ems/emas).

UKAS has accredited a number of organisations to provide certification services to ISO 14001, services as environmental verifiers for EMAS and inspection services for BS 8555. Details can be found on the UKAS website.

12.2 Environmental Statement (EMAS only)

One of the main differences between ISO 14001 and EMAS is that the latter requires the preparation of an **Environmental Statement**. This defines the organisation's environmental performance and must be made available to the public. The Environmental Statement must be validated by an independent accredited verifier and updated as required to accommodate changes to products, processes and services.

Under the EMAS Regulations, the Environmental Statement must contain the following information:

■ a description of activities, products and services carried out by the organisation and the location of the site;

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[5] Full title: Guide to the phased implementation of an environmental management system including the use of environmental performance evaluation

- identification and assessment of all activities with a significant environmental effect (environmental aspects);
- data on solid waste, emissions, discharges, raw material use, energy consumption, water use and any other significant environmental aspects;
- an outline of the organisation's environmental policy and a description of the EMS;
- a summary of the organisation's objectives, targets and environmental improvement programme;
- other factors relevant to the organisation's environmental performance, including the introduction of new technologies to reduce environmental impacts;
- significant changes since the last Statement;
- the deadline for the next Statement; and
- the name of the accredited verifier who checked the information and the date it was done.

12.3 ISO 14001 certification process

To be ready for certification to ISO 14001, the EMS should have been fully operational for at least three months and at least one management review should have been conducted. This also gives time to ensure that the internal audit system is fully operational and shown to be effective.

The certification process involves a desk-top study followed by a certification audit.

Desk-top study

The desk-top study will examine:

- information on the site and its activities;
- the environmental policy and programme;
- the description of the site's EMS;
- any previous site environmental reviews or audit reports; and
- any corrective action details prepared as a result of previous reviews or audits.

As part of the desk-top study, the evaluator is likely to ask for the following:

- EMS documentation, including procedures and, preferably, a cross-referenced list linking the documentation to the relevant sections of the standard;

- a description of the site's processes and an analysis of environmental aspects associated with the production process, waste flows, products and by-products;
- the evaluation of environmental aspects (i.e. Register of Environmental Aspects and impacts);
- the continual improvement programme (i.e. objectives and targets – management programme);
- a list of relevant legislation (i.e. Register of Legislation);
- an overview of permits/licences, consents and any other agreements with regulatory authorities;
- records of emission data (i.e.to check compliance with permits/licences and consents);
- details of any breaches of legislation and regulatory consents;
- records of correspondence with the regulatory authorities;
- internal audit reports;
- management review reports; and
- records of any complaints received and actions taken in response to these complaints.

During this initial assessment, the certification body will advise you of any omissions it has identified. These will need to be corrected before the certification audit can be undertaken.

Certification audit

This audit represents the final stage in the certification process. A site visit will be requested by the certification body, for which desk space will be needed on site for its personnel. The purpose of this visit will be to confirm that the written procedures are actually used in practice and that the requirements of the standard are met. The time needed for the certification team to carry out the site visit is about two days.

Any non-compliance with ISO 14001 found during the visit will be recorded by the certification body and a date set by which any necessary corrective action must be carried out. A check will be made that this has occurred and, assuming that the corrective action is satisfactory, certification will follow.

Retaining ISO 14001 certification

Retaining certification to ISO 14001 involves demonstrating that the EMS is being properly maintained. This involves routine surveillance visits by the certification body. The approach taken by the various certification bodies differs. In general, there will be a visit every six months to review elements of the EMS. An additional fee is payable for renewal.

12.4 EMAS verification and registration

To be ready for EMAS registration, it is prudent to have had the EMS fully operational for at least three months. This should allow enough time to evaluate whether the internal audit system is adequate and effective. During this period, at least one management review should be conducted. The accredited verifier will ask the organisation to complete a questionnaire.

Note, in addition to requiring an Environmental Statement, EMAS refers to 'environmental review' rather than 'internal review'.

TIP: Structure the verification so that one third of the organisation's activities is verified each year, so that all activities are verified over 36-month period (in accordance with Annex V, 5.6 of the Regulation). This will help give the verifier confidence in the accuracy and reliability of the information detailed in the Environmental Statement.

The verification process

The verification process is very similar to the ISO 14001 certification process and also involves a desk-top study followed by a main assessment.

Desk-top study

The desk-top study will examine:

- information on the site and its activities;
- the environmental policy and programme;
- the description of the site's EMS;
- any previous site environmental reviews or audit reports; and
- any corrective action details prepared as a result of previous reviews or audits.

As part of the desk-top study, the accredited verifier is likely to ask for the following:

- EMS documentation, including procedures and, preferably, a cross-referenced list linking the documentation to the relevant sections of the standard;
- a description of the site's processes and an analysis of environmental impacts associated with the production process, waste flows, products and by-products;
- the evaluation of environmental impacts;
- the continual improvement programme;
- a list of relevant legislation;
- an overview of permits/licences, consents and any other agreements with regulatory authorities;
- records of emission data (i.e. to check compliance with licences and consents);
- details of any breaches of legislation and regulatory consents;
- records of correspondence with the regulatory authorities and history of environmental problems;
- internal audit reports;
- management review reports;
- records of any complaints received and actions taken in response to these complaints;
- involvement of workers; and
- the Environmental Statement and the reliability of the information held within it.

The registration process

The Competent Body should be contacted with a request for an application form. The form asks for basic information on organisation contacts, the site address, activities on site, the EMS, the name of the verifier of the Environmental Statement, and contact details for the appropriate regulatory authorities (Environment Agency, Scottish Environment Protection Agency and the Northern Ireland Environment Agency, local authorities). The Competent Body contacts the regulators to ascertain whether they know of a reason why the organisation should not be registered.

An original copy of the Environmental Statement must be submitted with the completed form.

If the application is successful, an EMAS registration number will be allocated and the organisation will be entered into the EMAS register. The organisation may then use the EMAS logo on letterheads and on its Environmental Statement.

In general, organisations need to renew their registration on an annual basis.

Losing EMAS registration

De-registration from EMAS can occur in three ways:

- if an organisation fails to submit a validated Environmental Statement for a site, along with the appropriate registration fee, within three months of the deadline specified in the site's previous Statement;
- if the Competent Body becomes aware that the site is no longer complying with the requirements of the EMAS Regulation. This information can come via a number of routes, such as public complaints or from regulators; and
- if a regulatory body informs the Competent Body that the site is in breach of relevant environmental legislation, the site may be

refused registration or have its registration suspended. The EMAS Regulation does not define 'breach', so guidance has been drawn up, in agreement with the regulatory bodies, and is available from the Competent Body. Registration is not likely to be refused or suspended for trivial breaches. If suspension or refusal of registration is necessary, it will be reversed only when the Competent Body has been assured by the regulator that the site has rectified the breach and has procedures in place to prevent recurrence.

12.5 ISO 14001 and EMAS

In a decision published in the Official Journal of the European Communities on 4 April 1997, the European Commission formally recognised ISO 14001 as an acceptable standard. Article 12 of the EMAS Regulation allows verifiers to accept certificates of compliance with a recognised standard as denoting compliance with most of the EMAS Regulation. This means that those with an ISO 14001 certificate are well down the path in meeting the EMS requirements of EMAS. The additional requirement for EMAS is the publication of a validated Environmental Statement.

Table 5: Transferring from ISO 14001 to EMAS

ISO 14001:2004		EMAS:2009	
Clause Number	Clause Title	Clause Number	Clause Title
4.1	General requirements	I-A.1	General requirements
4.2	Environmental policy	I-A.2	Environmental policy
4.3	Planning	I-A.3	Planning
4.3.1	Environmental aspects	I-A.3.1 & I-B.1	Environmental aspects
4.3.2	Legal and other requirements	I-A.3.2 & I-B.2, Annex VI	Legal and other requirements
4.3.3	Objectives, targets and programme(s)	I-A.3.3 & I-B.3	Objectives and targets
4.4	Implementation and operation	I-A.4	Implementation and operation
4.4.1	Resources, roles, responsibility and authority	I-A.4.1	Structure and responsibility
4.4.2	Competence, training and awareness	I-A.4.2 & I-B.4	Training, awareness and competence
4.4.3	Communication	I-A.4.3 & I-B.5	Communication
4.4.4	Documentation	I-A.4.4	Environmental management system documentation
4.4.5	Control of documents	I-A.4.5	Document control
4.4.6	Operational control	I-A.4.6	Operational control
4.4.7	Emergency preparedness and response	I-A.4.7	Emergency preparedness and response
4.5	Checking	I-A.5	Checking and corrective action
4.5.1	Monitoring and measurement	I-A.5.1	Monitoring and measurement
4.5.2	Evaluation of compliance	I-B.1	Legal compliance
4.5.3	Non-conformity, corrective action and preventative action	I-A.5.2	Non-conformance, corrective and preventative action
4.5.4	Control of records	I-A.5.3	Records
4.5.5	Internal audit	I-A.5.4	Environmental management system audit
4.6	Management Review	I-A.6	Management review
		Annex III	Internal Environmental Audit Requirements
		Annex VI	Environmental Reporting

Organisations operating environmental management systems fully compliant with ISO 14001:2004, who wish to become inspected to EMAS will have to ensure that changes are made to be fully compliant with the requirements of EMAS. These include:

- **ISO 14001 certification body**
  - Check that the ISO 14001 certification body is recognised by the Competent Body.
- **Scope of the certificate**
  - Check that the scope of the ISO 14001 certificate covers the same geographic area as the scope area for EMAS registration.
- **Environmental performance**
  - Ensure that the evaluation of overall environmental performance is included as a routine part of monitoring and management review processes.
- **Environmental review**
  - Ensure that the issues specified in Annex I of the EMAS Regulation have been addressed in the scope of the review.
- **Environmental audit**
  - Ensure that the issues specified in Annex III of the EMAS Regulation have been addressed in the scope of the audit.
  - Verifiers will need to be satisfied that audits have been conducted in compliance with Annex III of the EMAS Regulation. This will be achieved if the audit is carried out in accordance with

the requirements of ISO 14010, 14011 and 14012.
  - The frequency of the audit programme will need to be based on the environmental significance of issues highlighted in previous audits and be related to the rate of progress with which these are being addressed.
  - The audit frequency is likely to be greater than the minimum requirement stipulated within EMAS (at least every three years, Annex III).
- **Communication**
  - Ensure that the way in which communications are handled meets the requirements of points Annex 1-A.4.3 and Annex 1-B.5 of the EMAS Regulation.
- **Contractors**
  - Ensure that it can be demonstrated that the system which requires contractors to work to equivalent environmental standards meets the requirements Annex 1-A.4.6 of the EMAS Regulation.
- **Legal compliance**
  - Ensure that legal compliance can be demonstrated.
- **Preparation of the Environmental Statement**
  - Ensure that the Environmental Statement is a fair representation of performance and that it meets the requirements of Annex IV of the EMAS Regulation.

13 Further information

Useful sources of information

WRAP guides and tools

- Saving Money Through Resource Efficiency: Reducing Water Use.
- Tracking Water Use to Cut Costs.
- Reducing Your Water Consumption.
- Finding Cost Savings: Resource Efficiency for SMEs.
- Resource Efficiency for Managers.
- Environmental Strategic Review Guide.
- Waste Mapping: Your Route to More Profit.
- Workforce Partnerships for Resource Efficiency.
- Green Office: A Guide to Running a More Cost-effective and Environmentally Sustainable Office.
- Self-assessment Review for Food and Drink Manufacturers.
- Your Guide to Environmental Management Systems (EMS).
- WRAP Waste Hierarchy guide.

Useful links

- The **Carbon Trust** helps business to cut carbon emissions. Visit the website at www.carbontrust.co.uk for more information.
- The **Energy Saving Trust** (www.energysavingtrust.org.uk) offers independent and impartial advice about how to save energy and money.
- The **Water Technology List** offers a 100% first-year allowance for investments in certain water efficient plant and machinery. Visit www.hmrc.gov.uk/capital-allowances/fya/water.htm or call the WTL Advice Line on 0844 875 5885.
- **Environment Agency (England and Wales):** telephone 03708 506506 or visit www.environment-agency.gov.uk
- **Scottish Environment Protection Agency:** telephone 01786 457700 or visit www.sepa.org.uk
- **Northern Ireland Environment Agency:** telephone 0845 302 0008 or visit www.doeni.gov.uk/niea/

WRAP

WRAP (Waste & Resources Action Programme) works in England, Scotland, Wales and Northern Ireland to help businesses and individuals reap the benefits of reducing waste, develop sustainable products and use resources in an efficient way.

Since its creation, WRAP has funded projects that will, over their lifetimes, deliver over 120 million tonnes of waste diverted from landfill and over 20 million tonnes of CO_2 equivalent greenhouse gases saved. Visit www.wrap.org.uk for more information on all of WRAP's services.

What support can you get from WRAP?

UK businesses could save £23 billion per year and help create and protect jobs by improving the way they use resources.

WRAP provides a range of free resource efficiency support for organisations including:

- WRAP Resource Efficiency Helpline on 0808 100 2040;
- online tools and guidance;
- online training initiatives;
- tailored business support for recycling companies;
- case studies; and
- guides.

Visit www.wrap.org.uk to find out more.

Appendix

Worksheet 1: Documents needed for an initial review

Worksheet 2: Initial review

        A: Site issues

        B: Utilities

        C: Inventory of raw materials

        D: Aqueous effluents

        E: Solid wastes

        F: Emissions to atmosphere

Worksheet 3: A: Environmental aspects: checklist of business areas

        B: Register of Environmental Aspects

Worksheet 4: Register of Legislation

Worksheet 5: Objectives and targets for an improvement programme

        A: Basic objectives and targets improvement programme template

        B: A detailed objectives and targets improvement programme template

Worksheet 6: Example procedure

Worksheet 7: Example form for internal audits

Worksheet 8: Example corrective action request (CAR) form

Worksheet 1: Documents needed for an initial review

Completed by:		Date:	
Documentation:		**Available:**	**Held by:**
Process authorisations (licences and permits) Details:			
Consents to discharge to controlled waters (issued by the Environment Agency, Scottish Environment Protection Agency or Northern Ireland Environment Agency)			
Consents to discharge to sewer (issued by your sewerage undertaker)			
Complaints and incidents records			
Copies of relevant legislation			
Copy of relevant duty-of-care documentation (consignment notes, transfer notes)			
Copies of waste carriers' licences			
Copy of waste management licence of place where waste is taken to be treated or disposed of			
Hazardous waste registration (if applicable)			
Details of breaches and prosecutions			
Copies of complaints from local residents			
Site drainage drawings and plans			
Drawings of any relevant plant (e.g. oil interceptors, boiler house and effluent treatment plant)			
Existing procedures and controls covering: ■ Raw materials ■ Effluents ■ Emissions ■ Waste ■ Safe systems of work ■ Processes ■ Emergencies			
Maintenance schedules and records			
Monitoring data for discharges			
Operations logs			
Product information			
Purchasing records			
Raw material specifications and datasheets (COSHH Manual and Material Safety Datasheet MSDS)			
Training records			
Utility bills: ■ Electricity ■ Gas ■ Water Others			

Worksheet 2: Initial review

A: Site issues

Completed by:	Date:

1 What are the main processes undertaken at the site/in the area?

2 Site history

When was the site acquired?

What expansions/changes of use have occurred since the site was acquired?

Has there been any known contamination of the site? (give details)

Has a contaminated land survey of the site ever been undertaken? (give details)

3 Have there been any major accidents/spillages since the site was acquired?

Details:

4 Has the organisation received any formal warnings or been prosecuted for breaches of consents or environmental legislation?

Details:

5 Has the organisation received any complaints from members of the public regarding site operations?

Details:

Worksheet 2: Initial review
B: Utilities

Completed by:	Date:

Use your monthly or quarterly invoices to obtain the most recent 12 months consumption and cost data. If you have more than one supplier of electricity, gas, water, etc add these up to give a total figure.

1 Electricity

Annual consumption:

Unit cost: pence/kWh (you may have more than one tariff)

Annual cost:

Major uses:

2 Gas

Annual consumption:

Unit cost: pence/kWh

Annual cost:

Major uses:

3 Mains water

Include the cost of disposing of the water to sewer (as domestic wastewater (sewerage charge) and process wastewater (trade effluent)) as well as the cost of the incoming water supply. Both costs are shown on your water bill.

Annual consumption: m^3

Cost of water supply: pence/m^3

Cost of sewerage: pence/m^3

Cost of trade effluent: pence/m^3

Annual cost: In

                                                    Out

                                                    Total

Major uses:

Worksheet 2: Initial review
B: Utilities (continued)

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4 Fuel oil

Annual consumption: litres or gallons (delete as appropriate)

Unit cost: pence/litre or pence/gallon (delete as appropriate)

Annual cost:

Major uses:

---

5 Vehicle fuels
Include different types of fuel (e.g. petrol, oil and LPG) used for vehicles including fork-lift trucks and all cars/commercial vehicles.

Fuel	Amount	Unit cost	Total annual cost
Total			

---

6 What steps are taken to reduce utility consumption?

Energy:

Water:

Fuel oil:

Vehicle fuels:

---

7 Are heating and other combustion equipment regularly maintained/serviced?

Worksheet 2: Initial review

C: Inventory of raw materials

Completed by:			Date:	
List all major raw materials used and stored on site (including packaging materials). Also assess the adequacy of the storage of the raw material. (Is it fit for purpose? Does it leak?)				
Raw materials	**Annual consumption**	**Storage method**	**Storage location**	**Adequacy of storage**

Worksheet 2: Initial review

D: Aqueous effluents

Completed by:			Date:	
1 Major types and sources of aqueous effluent				
Description	**Source**	**Annual volume**	**Disposal route**	**Consent conditions**

2 Does the site possess an effluent treatment plant?

Details:

3 Are effluents monitored at point of discharge?

Details:

Worksheet 2: Initial review
D: Aqueous effluents (continued)

4 Annual cost of operating the effluent treatment plant
This will help to inform investment decisions.

Labour:

Power and consumables:

Water treatment chemicals:

Disposal of sludge/filter cake:

Maintenance:

Capital depreciation:

Other:

5 Annual cost of effluent discharge to sewer and/or controlled waters (see worksheet 2B-utilities)

6 What steps are taken to reduce the amount of effluent generated?

Worksheet 2: Initial review
E: Solid wastes

Completed by: **Date:**

1 Major sources and types of solid waste

Waste type	Source	Storage method	Location of storage	Adequacy of storage	Annual amount	Waste contractor	Waste carrier's licence No (with date of expiry)	Current fate

Worksheet 2: Initial review

E: Solid wastes (continued)

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2 Annual cost of waste disposal (e.g. contractor costs, transport and landfill charges).
Include any revenue from the sale of a particular waste stream. Knowing these charges can help to justify expenditure on waste minimisation projects.

Type of waste	Charges	Revenue

3 Are steps taken to reduce waste at source?

4 Are waste transfer notes held on file for all controlled waste streams? (Waste transfer notes should be held on file for at least two years).

5 Are consignment notes held on file for all hazardous waste streams? (Consignment notes should be held on file for at least three years).

6 Do all consignment and transfer notes contain the correct European Waste Codes?

7 Are waste carriers' licences held on file for all waste contractors taking waste from the site?

8 Are waste management licences held on file for all sites where the waste is treated or disposed of?

Worksheet 2: Initial review

F: Emissions to atmosphere

Completed by:			Date:

1 Major types and sources of gaseous emissions

Description	Source	Mass (tonnes/year)	Consent conditions

2 Does the site pre-treat any gaseous emissions before they are vented to air?

Details:

3 Are gaseous emissions monitored at point of release?

Details:

4 Annual cost of pre-treatment of gaseous emissions
This will help to inform investment decisions.

Labour:

Energy and consumables:

Treatment technologies:

Maintenance:

Capital depreciation:

Other:

5 Annual cost of gaseous emissions vented to air:

6 What steps are taken to reduce the amount/type of emissions vented to air?

Details:

Worksheet 3A: Environmental aspects: checklist of business areas

Use this list to ensure that each business area giving rise to environmental aspects is covered.

Business functions	Tick if covered	Office-based activities	Tick if covered
Process design/operation		Energy use	
Waste disposal		Waste disposal	
Solid waste management		Paper use	
Emissions/discharges		Water use	
Water use/discharges			
Raw materials			
Storage on site			
Transport and distribution			
Energy sources			
Product design			
Packaging			

Worksheet 3B: Register of Environmental Aspects

The table provides a simple format for setting out a Register of Environmental Aspects. It can be extended or amended to add more detail as required. Remember, aspects are deemed significant or not according to your organisation's criteria.

Process/activity	Aspect	Environmental impact	Operating conditions	Significant	Action required

Worksheet 4: Register of Legislation

Legislation/ code of practice	Applicable to which process/product	Copy held on site?	Where?	Person responsible for compliance	Related procedures (Management Manual)

Worksheet 5: Objectives and targets for an improvement programme

This table is a simple version that can be used to detail objectives and targets. A more detailed version can be used if you prefer, an example of which is on the next page.

A: Basic objectives and targets improvement programme template (NB There may be more than one target per objective).

Objective*	Target	Resources	Responsibility	Proposed completion date

*   Remember to make your objectives and targets **SMART**: **S**pecific, **M**easurable; **A**chievable, **R**ealistic and **T**ime-bound

Worksheet 5

B: A detailed objectives and targets improvement programme template

Objective*:	Date: Issue: Authorised:	Project leader: Location: Relevant aspect: Relevant procedures:

Background to objective:

Targets	Date	Key indicator	Responsible	Completion date	Progress

* Remember to make your objectives and targets **SMART**: **S**pecific, **M**easurable; **A**chievable, **R**ealistic and **T**ime-bound

Worksheet 6: Example procedure

Organisation:			
Procedure:		**Ref No:**	
Subject:		**Issue:**	
Issued by:	**Signed:**	**Date:**	
Approved by:	**Signed:**	**Date:**	

Purpose:

Related procedures:

Title	Ref	Location

Circulation list:

Related legislation:

Title	Ref	Location

Procedure:

Worksheet 7: Example form for internal audits

Audit carried out by:			Date:
Procedure/area to be audited:			No:
Section/checklist	Conforms?	Comments	Requires corrective action request (CAR)?

Worksheet 8: Example corrective action request (CAR) form

Procedure No:	CAR No:
Auditor:	Date:
Auditee:	Severity of non compliance Observation / Minor / Major

1. Non compliance

Signed: Date: (Auditee)	Signed: Date: (Auditor)

2. Agreed corrective action

Signed: Date: (Auditee)	Proposed follow up date:

3. Action completed

Signed: Date: (Auditee)	

4. Preventive action

Signed:	Date:

5. Review of existing procedure
Does an existing procedure need to be revised or a new one implemented?

Signed:	Date:

We hope that you have found this guide helpful on your route to greater resource efficiency. Don't forget that WRAP is here to help you to improve resource efficiency. Visit the website at www.wrap.org.uk or contact the WRAP Resource Efficiency Helpline on 0808 100 2040.

recycle