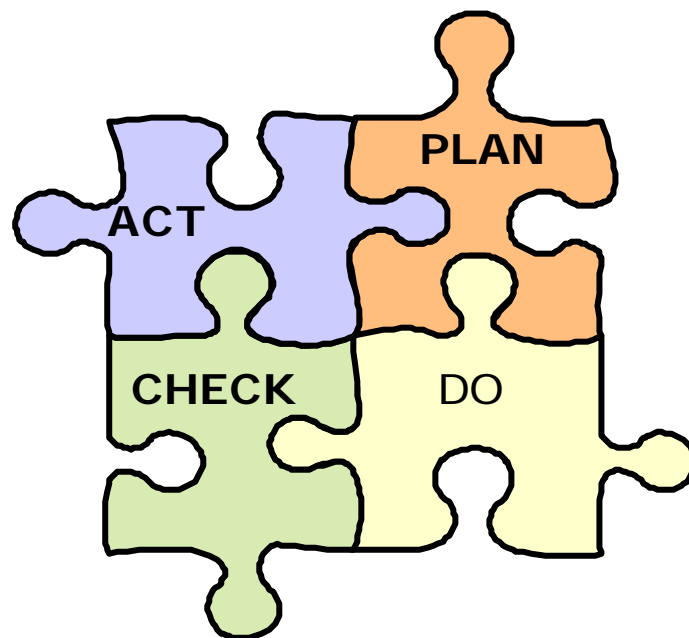


Generic ISO 14001 EMS Templates

User Manual



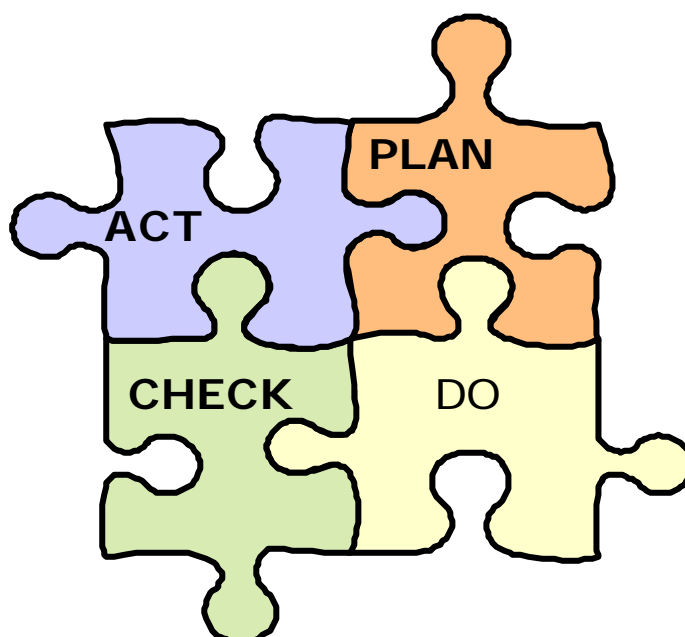
September 2004

Contents of this User Manual

ISO 14001 Environmental Management
System (EMS)
Support Package for SMEs

Environmental Management System (EMS)
PLANNING

Environmental Management System (EMS)
DEVELOPMENT AND IMPLEMENTATION



ISO 14001 Environmental Management
System (EMS)
CERTIFICATION PROCESS

Detailed Contents

I. ISO 14001 EMS Support Package for SMEs	2
A. What is this package?	2
B. Who should read what in this package?	3
C. How is this manual structured?	4
D. How to use this support package?	4
E. General tips for the Generic ISO 14001 EMS Templates	5
F. What is an Environmental Management System	5
1. International EMS Standards	6
2. Approach to EMS Development and Implementation	7
II. EMS Planning	11
A. Initial Environmental Review	11
B. Gap Analysis	12
III. EMS Development and Implementation	14
A. Management Commitment	16
1. Environmental Policy	16
2. EMS Manual	17
B. Plan	19
1. Environmental Aspect Identification	19
2. Legal and Other Environmental Requirements	25
3. Objectives, Targets and Programme	27
C. Do	30
1. Resources, Roles, Responsibility and Authority	30
2. Competence, Training and Awareness	32
3. Communication	34
4. Environmental Management System Documentation	35
5. Control of Documents	36
6. Operational Control	37
7. Emergency Preparedness and Response	39
D. Check	40
1. Monitoring and Measurement	40
2. Evaluation of Compliance	42
3. Nonconformity, Corrective and Preventive Action	43
4. Records	44
5. Internal Audit	45
E. Act	47
1. Management Review	47
F. Keys to Successful Implementation	48
IV. ISO 14001 EMS Certification Process	50

List of Appendices

Appendix 1.	Comparison of ISO 14001:1996 with ISO/DIS 14001 (Date: 9 July 2003)
Appendix 2.	Sample Guidance Questions for Gap Analysis
Appendix 3.	EMS Implementation Checklist
Appendix 4.	List of ISO 14001 Certification Bodies in Hong Kong

List of Figures

Figure 1.	“Plan, Do, Check, Act” model.	5
Figure 2.	ISO 14001 Overview.....	6
Figure 3.	Approach to EMS Development and Implementation	7
Figure 4.	The Four-level EMS Documentation Structure.....	14
Figure 5.	Workflow of Environmental Aspect Identification and Evaluation.....	22
Figure 6.	ISO 14001 Certification Process	52

List of Tables

Table 1.	List of Trades Provided with Practical Examples of ISO 14001 EMS in this Support Package.	3
Table 2.	Comparing the PDCA cycle to the ISO/DIS 14001 (Date: 9 July 2003) Standard.....	7
Table 3.	Phased EMS Implementation Flow	9
Table 4.	List of Generic ISO 14001 EMS Templates	15
Table 5.	Environmental Aspects : Things to Consider	21
Table 6.	Criteria and Scores for Evaluation of Environmental Aspect Significance.....	21
Table 7.	General steps toward ISO 14001 Certification	50

Chapter

I

ISO 14001 EMS Support Package for SMEs

- A. What is this Package?
- B. Who should read what in this package?
- C. How is this manual structured?
- D. How to use this support package?
- E. General tips for using the Generic ISO 14001 EMS Templates
- F. What is an Environmental Management System?

I. ISO 14001 EMS SUPPORT PACKAGE FOR SMEs

A. What is this package?

More and more companies are implementing Environmental Management Systems (EMS) to reduce their environmental impacts, improve their efficiency, comply with legislation and demonstrate to clients their commitment to environmental protection. Many companies have chosen to obtain independent certification of their EMS to the international standard ISO¹ 14001. Due to copyright laws, the ISO 14001 Standard could not be provided in this package. Meanwhile, the ISO 14001 could be purchased through various sources².

The Business Environment Council and Environmental Protection Department, HKSAR have developed a Small and Medium Enterprises (SMEs) support package for ISO 14001 EMS implementation, in order to :

- i) provide assistance to local SMEs (with manufacturing activities in Hong Kong and/or in Shenzhen) to stay competitive in the environmentally-conscious world business market;
- ii) help the local SMEs to get prepared for future supply chain pressure in ISO 14001 EMS; and
- iii) enhance the environmental performance of local SMEs

This EMS support package is designed to help local SMEs to implement an effective EMS. The support package, provided in English and Chinese, comprises:

- **Generic ISO 14001 EMS Templates** – to be used as a basis of an EMS by companies, which can tailor them to suit their specific needs.
- **User Manual** – with easy-to-use guidance on how to apply the Generic ISO 14001 EMS Templates in your company and work progressively towards successful EMS implementation.
- **Practical Examples of ISO 14001 EMS** – with practical document examples and procedures for typical companies in the electrical / electronic and construction sectors for further guidance.

This User Manual and Generic ISO 14001 EMS Templates are designed to be of assistance to any SME in any sector. Additional Practical Examples of ISO 14001 EMS are also provided for SMEs in various trades of the electrical / electronic sector and the construction sector. The trades covered by the Practical Examples of ISO 14001 EMS are listed in Table 1.

¹ International Organization for Standardization

² The Standard can be purchased through the Product Standards Information Bureau of the Innovative and Technology Commission, the Hong Kong Special Administrative Region Government (www.info.gov.hk/itc/psis/), local certification body agencies, or online purchasing through ISO (www.iso.ch).

Table 1. List of Trades Provided with Practical Examples of ISO 14001 EMS in this Support Package.

Trade	Document Examples	Location
Electrical and Electronic Sector		
Electroplating for watch cases and belts	Case 1 – Hong Kong Green Electroplating Company	Hong Kong
PCB for computers, telecom equipment, automotive and industrial control	Case 2 – Hong Kong Green Printed Circuit Board Company	Hong Kong
Manufacture of electronic calculators	Case 3 – Hong Kong Green Electronics Assembly Company	Hong Kong
Manufacturing of electrical shaver and vacuum cleaner	Case 4 – Hong Kong Environmental Electrical Appliance Company	Hong Kong
Electroplating for screws and metal parts	Case 5 – Shenzhen Environmental Electroplating Company	Hong Kong / Shenzhen
Manufacture of PCB for mobile phones	Case 6 – Shenzhen Environmental Printed Circuit Board Company	Hong Kong / Shenzhen
Manufacturing of photocopying machines	Case 7 – Shenzhen Environmental Assembly Company	Hong Kong / Shenzhen
Manufacturing of home appliances	Case 8 – Shenzhen Environmental Electrical Appliance Company	Hong Kong / Shenzhen
Construction Sector		
Construction	Wan Bao Construction Company	Hong Kong

B. Who should read what in this package?

An effective EMS requires the involvement of all staff in your organisation, from top management to the workshop floor. Although an “EMS Manager” or “Coordinator” will be nominated to take day-to-day responsibility, other staff will be involved in various ways. Different parts of this support package should be read by the relevant people as follows :

Responsibility	Which part to read	What will you learn
<i>Top Management</i>	<i>User Manual</i> (Introduction, and sections on policy and EMS manual)	<ul style="list-style-type: none"> • General perspectives on ISO 14001 • The resources needed for a successful EMS
<i>EMS Manager / Coordinator</i>	This <i>User Manual</i> , the <i>Generic ISO 14001 EMS Templates</i> , and <i>Practical Examples of ISO 14001 EMS</i>	<ul style="list-style-type: none"> • How to develop tailored EMS documentation • How to implement an effective EMS • How to achieve ISO 14001 certification or self-declaration
<i>Department Heads</i>	<i>User Manual</i> and <i>Practical Examples of ISO 14001 EMS</i>	<ul style="list-style-type: none"> • How your functions need to support the EMS
<i>Frontline Staff</i>	<i>Practical Examples of ISO 14001 EMS</i>	<ul style="list-style-type: none"> • The environmental impacts related to your daily working activities, and how they can be controlled.

C. How is this manual structured?

Section I : ISO 14001 EMS Support Package for SMEs	Describes this package and how it should be used. Summarises ISO 14001 EMS concepts, with an overview of the development and implementation approach.
Section II : EMS Planning	Describes the process for planning an EMS, including guidance on how to undertake an “Initial Environmental Review” as the first step.
Section III : EMS Development and Implementation	Provides detailed guidance on how each element of the EMS should be designed and documented, and describes how to use the Generic ISO 14001 EMS Templates to develop and implement your own EMS.
Section IV : ISO 14001 EMS Certification Process	Explains the general ISO 14001 certification process and steps involved leading to ISO 14001 certification.

D. How to use this support package?

This support package provides practical help in developing your EMS using the following steps :

- 1) Work through this step-by-step *User Manual* and *Generic ISO 14001 EMS Templates* to see what documents and resources are required
- 2) Review the *Practical Examples of ISO 14001 EMS* to see how an effective EMS is implemented in a typical company similar to yours
- 3) Create your own EMS documents based on the *Generic ISO 14001 EMS Templates*
- 4) Launch your EMS within your company and check compliance of its implementation against the ISO 14001 requirements
- 5) Apply for ISO 14001 certification if your management decide to pursue, or make a self-declaration without third party assessment.

Linkages to download relevant documents and helpful websites are underlined in blue colour. For instance, the link to relevant Generic ISO 14001 EMS Templates and Practical Examples of ISO 14001 EMS are indicated as Download [\(Template\)](#)
Download [\(Sample\)](#).

Helpful tips are provided throughout this User Manual to give some handy and practical hints on developing and implementing a successful EMS within your company.

Case specific information in Practical Examples of ISO 14001 EMS is highlighted in red colour to help you creating your EMS documents.

E. General tips for the Generic ISO 14001 EMS Templates

The following are some **general tips** for using the Generic ISO 14001 EMS Templates to create your own EMS:

- Replace **COMPANY NAME** with your company's name in all of the Generic ISO 14001 EMS Templates.
- (*Italicised*) words in brackets are hints for the information specific to your company that should be inserted in that section.
- *Italicised words* highlighted in purple colour show the practices usually adopted by your industry, but can be changed to reflect your company's culture and practices.
- **Document number** is highlighted in green colour for easy reference and can be amended to your company's preferred numbering system.

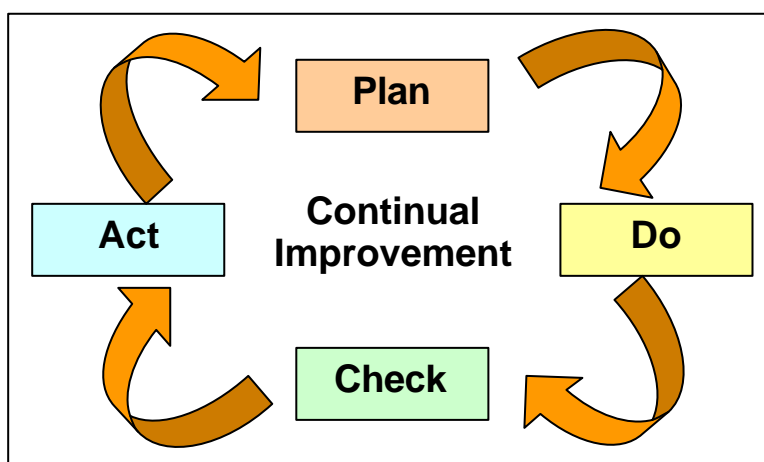
The Generic ISO 14001 EMS Templates are developed based on the ISO/DIS 14001 (Date : 9 July 2003), which is the Draft International Standard of the ISO 14001 (2004 version). The final version of ISO 14001 is expected to be issued in late 2004. Please refer to Section F-1b) for further explanation.

Since ISO 14001 shares common management system principles with the ISO 9001 Quality Management System (QMS) standard, your company may select to use its existing ISO 9001 as the basis for its EMS. You can integrate new EMS features into relevant QMS procedures already in place.

F. What is an Environmental Management System

An Environmental Management System (EMS) is a continual business cycle of planning, implementing, reviewing and improving the processes and actions that your company undertakes to meet its environmental obligations and continually improve its environmental performance. An effective EMS is developed on "**Plan, Do, Check, Act**" (PDCA) model which embodies the concept of continual improvement.

Figure 1. "Plan, Do, Check, Act" model.

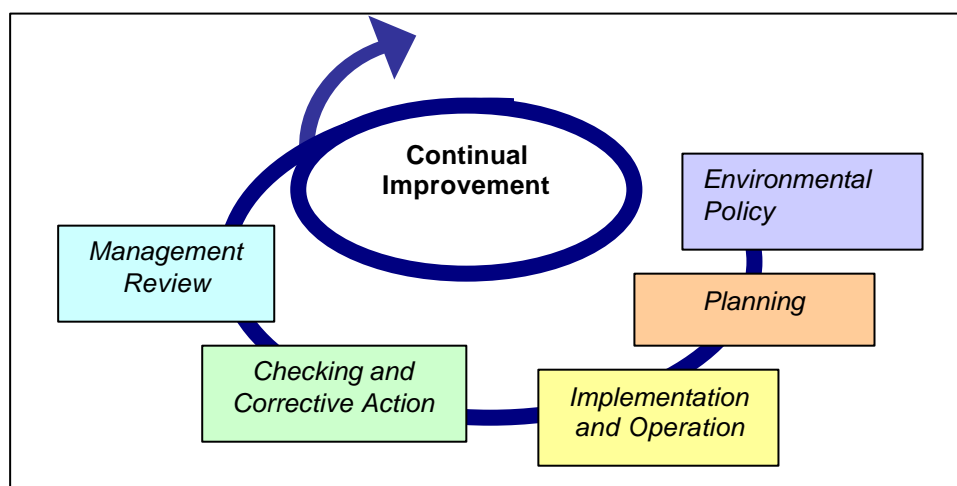


1. International EMS Standards

a) ISO 14001 Environmental management systems – Specification with guidance for use

- is an **international standard** which specifies the requirements of an environmental management system.
- provides a framework applicable to all types and sizes of organisations using the approach shown in Figure 2.
- the success of the system depends on commitment from all levels and functions, especially from top management.
- enables an organisation to establish and assess the effectiveness of procedures, to develop an environmental policy and objectives, achieve conformity with them, and demonstrate such conformity to others.

Figure 2. ISO 14001 Overview



b) The Evolution of ISO 14001

ISO 14001 EMS standard was first published in 1996 (Reference Number: ISO 14001:1996). This EMS standard is adopted worldwide by organisations for certifying ISO 14001 EMS. The standard is currently undergoing a revision process by ISO Technical Committee (TC) 207. An International Organisation of Standardisation / Draft International Standard (ISO/DIS) 14001 has been distributed in July 2003 for review and comment. It is believed that the revised version of ISO 14001 will be published in 2004. The Generic ISO 14001 EMS Templates provided in this package are developed based on **ISO/DIS 14001 (Date: 9 July 2003)**.

The comparison between the existing ISO 14001:1996 standard and new ISO/DIS 14001 (Date: 9 July 2003) standard is summarised in [Appendix 1](#) to this User Manual. This international standard is based on the Plan-Do-Check-Act (PDCA) model. The linkage of the clauses of elements in ISO 14001 Standard with PDCA is illustrated in the following table.

Table 2. Comparing the PDCA cycle to the ISO/DIS 14001 (Date: 9 July 2003) Standard

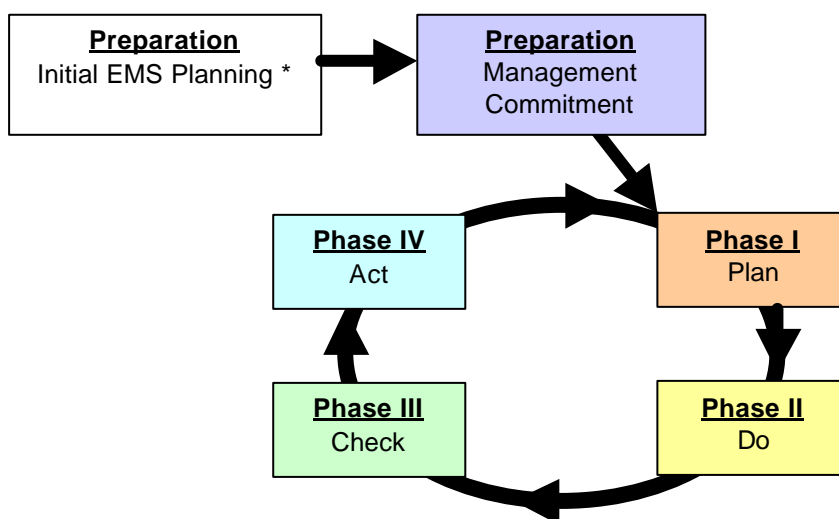
PDCA Cycle	ISO/DIS 14001 (Date: 9 July 2003) Standard
	4.2. <i>Environmental Policy</i>
Plan	4.3. <i>Planning</i> 4.3.1. Environmental Aspects 4.3.2. Legal and Other Environmental Requirements 4.3.3. Objectives, Targets and Programme
Do	4.4. <i>Implementation and Operation</i> 4.4.1. Resources, Roles, Responsibility and Authority 4.4.2. Competence, Training and Awareness 4.4.3. Communication 4.4.4. Documentation 4.4.5. Control of Documents 4.4.6. Operational Control 4.4.7. Emergency Preparedness and Response
Check	4.5. <i>Checking and Corrective Actions</i> 4.5.1. Monitoring and Measurement 4.5.2. Evaluation of Compliance 4.5.3. Nonconformity, Corrective and Preventive Action 4.5.4. Records 4.5.5. Internal Audit
Act	4.6. <i>Management Review</i>

2. Approach to EMS Development and Implementation

This support package recommends the four-step “PDCA” approach to implementing an EMS, since this is the approach taken by most ISO 14001 certified companies. When an EMS is to be initially set-up, two preparatory steps (initial planning and management commitment) are also recommended as shown in Figure 3.

Although these steps are not mandatory requirements under ISO 14001, these steps are useful to facilitate the development and implementation of the EMS in accordance with the ISO 14001.

Figure 3. Approach to EMS Development and Implementation



* Initial EMS Planning is not an ISO 14001 Standard requirement; however, it is useful preparation work to facilitate the set up and development of the EMS in accordance with the ISO 14001 Standard.

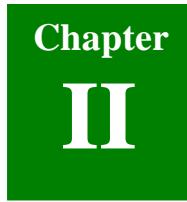
The different tasks for each phase and the relevant Generic ISO 14001 EMS Templates that you can use are shown in Table 3. In addition, Table 3 illustrates the estimated time that each phase of EMS development and implementation usually takes for a typical company. The detailed implementation of each phase is described throughout the rest of this User Manual.

Table 3. Phased EMS Implementation Flow

Approach	Tasks	Useful Generic ISO 14001 EMS Templates / Practical Examples of ISO 14001 EMS	Duration
Initial EMS Planning³	Baseline assessment	Initial Environmental Review checklist Gap analysis report	2 weeks
Management Commitment		Environmental Policy	2 weeks
PLAN	Environmental Aspect (EA) identification	Environmental Aspect Register	2 weeks – 1 month
	Identification & compliance with legal and other requirements	Legal and other requirements register	2 weeks
	Evaluating environmental aspects	Environmental aspect identification and evaluation procedure	2 weeks – 1 month
	Developing Objectives & Targets with Environmental Management Programmes	List of objectives, targets and environmental management programmes	2 weeks
DO	Developing EMS documentation	EMS Manual EMS procedures	1 month
	Developing operational control procedures	Operational control procedures and work instructions	1-2 months
	Implementation of the EMS	Organisation chart & responsibilities Training plan Training materials Guidance notes for supplier control Communication records Forms for implementing procedures	2-3 months
CHECK	Checking, audit	Monitoring plan Audit plan Audit checklist Audit report Corrective & preventive action report	1 month
ACT	Review	Management review report	2 weeks
Total			8 – 12 months
ISO 14001 Certification⁴			
OR			
Self-declaration of ISO 14001 EMS adoption			

³ Initial EMS Planning is not an ISO 14001 Standard requirement.

⁴ ISO 14001 Certification Process refers to Chapter IV in this manual.



Environmental Management System (EMS) Planning

- A. Initial Environmental Review
- B. Gap Analysis

II. EMS PLANNING

The most important elements of setting up a successful EMS are :

- gaining full commitment from your company's top management, and
- establishing your "EMS Working Team" to develop the system.

The first key task of the EMS Working Team is to undertake your "Baseline Assessment", which helps identify your current strengths and weaknesses in environmental protection. The Baseline Assessment involves an Initial Environmental Review (IER) and Gap Analysis (GA). Both are described with the Generic ISO 14001 EMS Templates and Practical Examples of ISO 14001 EMS in this section.

Although ***the IER and GA are not an ISO 14001 Standard requirement***, the benefits of conducting a baseline assessment are :

- to form the basis on which the EMS is built,
- to help establish your current level of environmental performance.
- to identify the "gaps" needed to be filled to comply with ISO 14001 requirements, and estimate the cost and manpower that will be involved.

The various steps in this Phase are detailed below.

Helpful Tips

- ❑ Get top management to visibly support the development of EMS. This could be done by giving an address at a staff meeting or by notice advising all staff.
- ❑ The EMS Working Team will be responsible for EMS planning, performing initial environmental review, and developing the EMS documentation in Phase II.
- ❑ The EMS Working Team usually includes a nominated EMS leader (manager / coordinator) and representatives from different functions of the company (e.g. administration, finance, production, etc.)
- ❑ The EMS leader should be someone in your company who :
 - ✓ has good understanding of how your company works day-to-day
 - ✓ has basic knowledge of environmental issues; and
 - ✓ has sufficient authority to get the necessary support from different departments.

A. Initial Environmental Review

Download ([Template – IER-01 Initial Environmental Review Checklist](#))

Initial Environmental Review (IER) is a preliminary review of the existing environmental programmes and systems in your company. Understanding your company's approach to environmental concerns will assist you to identify areas for improvement. In addition, you may wish to quantify baseline environmental conditions at your facility for comparison to future conditions.

This review is best conducted through discussions with different functions in your company, especially line managers and line workers. The purpose of the review is to identify the day-to-day working knowledge of your company's operations. Therefore, it is necessary to include personnel who have direct knowledge of as many relevant functions as possible.

The IER consists of 3 steps :

Step 1 : Pre-IER

- Create your IER checklist (see IER-01) to collect information

Step 2 : IER

- Fill out the checklist through site inspection, document review, interview with responsible personnel, direct labours, machine operators, etc.

Step 3 : Review

- Submit the completed checklist and back-up information to the EMS leader / IER Team to review the current environmental performance and practices of your company.

Helpful Tips for using checklist IER-01

- ❑ The italicised words under Comments are common remarks to the corresponding questions.
- ❑ Try to complete the checklist as fully as possible, or identify as NA if not applicable.
- ❑ Potential valuable sources of information:
 - ✓ Equipment manufacturers
 - ✓ Suppliers and vendors (e.g. waste disposal company)
 - ✓ Government agencies
 - ✓ Databases
 - ✓ Community groups
 - ✓ Environmental green groups
- ❑ Consider benchmarking your practices or performance against other organisations or industry associations

B. Gap Analysis

Download [\(Template – IER-02 Gap Analysis Report\)](#)

A Gap Analysis is a way to use the results of your IER to identify the “gaps” between your existing management practices, and those required by the EMS standard. The Gap Analysis is a very helpful tool for you to identify ways to improve your environmental management practices and set priorities where action is needed. To complete the provided Generic ISO 14001 EMS Templates of [gap analysis report](#) (IER-02), you should:

1. List your existing environmental practices and documents corresponding to each ISO 14001 clause in “Remarks”.
2. Compare the items in Remarks with the ISO 14001 Standard and rate your company’s position on the right column.

Helpful Tips for using checklist IER-02

- ❑ Some sample guidance questions assisting you to rate your company is provided in [Appendix 2](#).
- ❑ For example if “The Environmental Policy meets all ISO requirements” put “●●●●●”, if there is no Environmental Policy put “○○○○○”.



EMS Development and Implementation

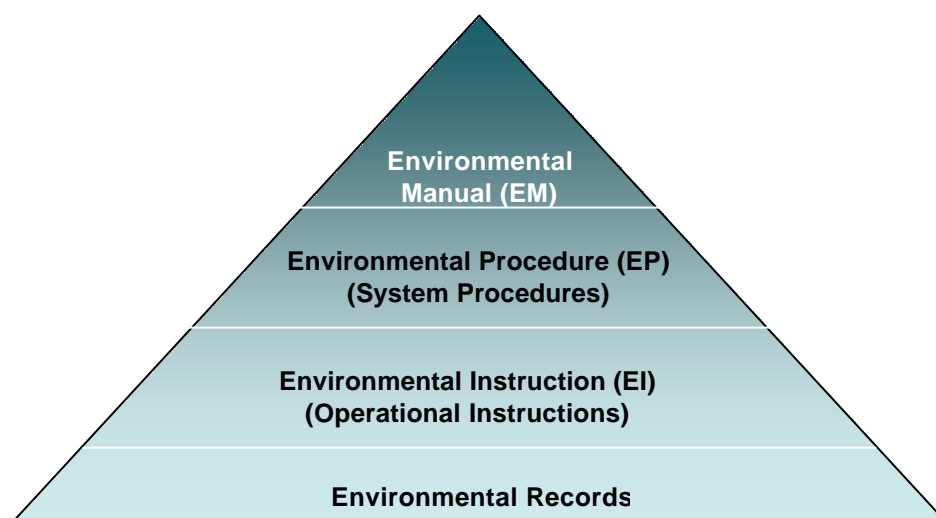
- A. Management Commitment
- B. Plan
- C. Do
- D. Check
- E. Act
- F. Keys to Successful Implementation

III. EMS DEVELOPMENT AND IMPLEMENTATION

Upon completion of Initial EMS Planning, the next step for the EMS Working Team is to develop your EMS based on the information collected and gaps identified in the baseline assessment. A fundamental requirement is to develop a set of EMS documents tailored for your company.

The Generic ISO 14001 EMS Templates in this support package are developed based on the ISO/DIS 14001 (Date: 9 July 2003) standard, using a four-level EMS documentation structure as below:

Figure 4. The Four-level EMS Documentation Structure



The 4-level EMS documentation structure is an international practice in line with the implementation of ISO 9000 Quality Management System (QMS) standards. EMS training materials delivered by internationally recognized organisations such as Institute of Environmental Management & Assessment (IEMA) and International Register of Certificated Auditors (IRCA) also adopt this 4-level documentation structure.

The full set of Generic ISO 14001 EMS Templates provided as part of this package is listed in Table 4. Each template is provided with a *Document Number* for reference.

After developing your EMS documents according to the guidelines provided in this support package, your company will need to apply the system, implement the procedures and maintain records to demonstrate compliance with the EMS requirements that you have established. This chapter describes the steps and keys for successful EMS operation and monitoring to ensure its effectiveness. An implementation checklist is provided in [Appendix 3](#) as a tool to help you to monitor your EMS implementation status.

Table 4. List of Generic ISO 14001 EMS Templates

Level	Document Number	Document Title
Manual Level	EM-01	Environmental Management System Manual (include sample of organization chart and structure)
	CP-01	Environmental Policy
	O&T-YYYY	Objectives, targets and management programmes
System Procedure Level	EP-01	Identification of Environmental Aspects and Significance Evaluation
	EP-02	Review of Legal and Other Environmental Requirements
	EP-03	EMS Training
	EP-04	Control of EMS Document
	EP-05	Environmental Emergency Preparedness and Response
	EP-06	Environmental Monitoring and Evaluation of Compliance
	EP-07	Enquiry / Complaint / Nonconformity Handling
	EP-08	Control of EMS Records
	EP-09	Internal EMS Audit
	EAR-01	Register of Environmental Aspects
Operational Level	LR-01	Register of Legal and Other Environmental Requirements
	EI-01	Environmental Office Practices
	EI-02	Green Procurement
	EI-03	Environmental Practices for Using Company's Car
	EI-04	Environmental Instructions on Waste Management
	EI-05	Environmental Instructions on Air Pollution Control
	EI-06	Environmental Instructions on Water Pollution Control
	EI-07	Environmental Instructions on Noise Control
	EI-08	Environmental Instructions on Resource Conservation
	EI-09	Handling and Storage of Chemicals
EI-XX	More instructions will be developed after reviewing the operations of the selected sectors as practical examples, e.g. Environmental Best Practices for Construction Sites Environmental Management Plan Waste Management Plan	
Record Level	EF-EP03-01	EMS Training Plan
	EF-EP03-02	EMS Training Attendance Records
	EF-EP07-03	EMS Communication Log
	EF-EP04-01	Master List of EMS Documents / Forms / External Documents
	EF-EP04-02	EMS Document Distribution Record Form
	EF-EP05-01	Emergency Drill Report
	EF-EP05-02	Accident Report
	EF-EP06-01	EMS Monitoring Plan
	EF-EP07-01	Corrective Action Report, CAR
	EF-EP07-02	CAR Status Log
	EF-EP08-01	Master List of Environmental Records
	EF-EP09-01	EMS Audit Plan
	EF-EP09-02	EMS Audit Checklist
	EF-EP09-03	EMS Internal Audit Report
	EF-EI01-01	Office Inspection Checklist
--	Sample of Management Review Minutes	
EF-XX	More forms will be developed after reviewing the operations of the selected sectors as practical examples, e.g. Inspection checklist for construction site	
Others	IER-01	Initial Environmental Review Checklist
	IER-02	Gap Analysis Report

* These documents are not required by ISO14001.

A. Management Commitment

“Management Commitment” defines the framework for your EMS through the “Environmental Policy” and the “EMS Manual”.

1. Environmental Policy

(ISO/DIS 14001 (Date: 9 July 2003) 4.2 Environmental Policy)

Download [\(Template – CP-01 Environmental Policy\)](#)

Download [\(Sample\)](#)

The first requirement of ISO 14001 is the establishment of an Environmental Policy (CP-01) which is mandated by your top management and verified during a Management Review.

The Environmental Policy (CP-01) :

- presents your top management’s declaration of its commitment to environmental protection;
- provides the EMS foundation and unified vision of your company’s environmental concerns;
- establishes your framework for setting environmental objectives and targets;
- should be understood by your staff and communicated externally
- should be signed and dated by your top management.

Helpful Tips :

- ❑ make it related to your products, services, and activities and impacts on the environment
- ❑ include a commitment to continual improvement, prevention of pollution and compliance with relevant environmental legislation
- ❑ make it simple and understandable
- ❑ if appropriate, make it integrated with your quality policy / safety policy.
- ❑ Consider addressing the following issues, where practicable :
 - ✓ sustainable development and/or product life cycle
 - ✓ adoption of “green” practices and procedures into design phase
 - ✓ Minimise of pollution, waste, and resource consumption;
 - ✓ Commitment to recovery, recycling and reuse.
 - ✓ Sharing of environmental knowledge with others
 - ✓ Encourage “green” practices in suppliers / contractors

2. EMS Manual

Download ([Template – EM-01 EMS Manual](#)) Download ([Sample](#))

Your EMS manual (EM-01) shall explain how your company's EMS is organised with reference to the requirements of the ISO 14001, which :

- Describes the core elements of your EMS (and how these elements relate to each other); and
- Provides cross-reference to related documents.

Your manual shall include a statement to address each element in ISO 14001. These statements explain how your company conforms to the particular element, and usually paraphrase the requirements of the ISO 14001 Standard. It is important to accurately describe the unique characteristics of your company and how your EMS operates. If you have a safety or quality management system, you may wish to integrate these with your EMS Manual.

The descriptions below follow the contents of the EMS Manual, providing guidance on how to modify the Generic ISO 14001 EMS Template manual into your company's EMS manual. More details of each EMS Manual section are discussed later in this guide according to the relevant ISO 14001 Standard clauses.

0.0 Terms and Definitions

- Terms and definitions included in the Generic ISO 14001 EMS Templates are based on ISO/DIS 14001 (Dated: 9 July 2003) definitions.

Helpful Tips

- ❑ These can be modified according to your company's background and culture.
- ❑ For instance, the definition of Environmental Instruction (EI) is not listed in the Generic ISO 14001 EMS Templates, but the company may define their EI as "Documenting instructions for staff to follow in their daily operational activities so that significant environmental aspects will be controlled".

1.0 General

1.1 Company Profile

- Provides background information of your company. Describe the nature and products / services of your business.

Helpful Tips

- ❑ Insert your company information to this section.
- ❑ For example, if you choose to include your quality or safety management system.

1.2 Purpose of this Manual

- This section can be modified if the function of the manual is more or less than the Generic ISO 14001 EMS Template.

1.3 Scope of EMS

- Clearly defines the coverage of your EMS and the standard (e.g. ISO/DIS 14001 (Date: 9 July 2003)) to which your company subscribes. It may include specific function(s) and/or location(s).

2.0 Policy

- Include your Environmental Policy here, briefly describing your company profile, EMS scope, and signed by top management and dated

3.0 Organisation

- Detailed description refers to Section C1 of Chapter III.

4.0 EMS Requirements

- Detailed description on each requirement under ISO 14001 Standard is presented in Sections B, C and D of Chapter III.

Appendix A

- This table presents Cross References of the ISO 14001 Requirements with your EMS Manual and Environmental Procedures (EP).

Helpful Tips:

- Change the EP Ref. No according to your company' s own numbering system.

Appendix B

- This table presents the list of your documents that are controlled by your EMS.

Helpful Tips:

- Change the list according to your company' s document numbering and titles

B. Plan

“Planning” helps you to establish the objectives and processes that are essential for delivering results in accordance with your environmental policy.

1. Environmental Aspect Identification

(ISO/DIS 14001 (Date: 9 July 2003) 4.3.1 Environmental Aspects)

Identifying and evaluating your environmental aspects (EAs) is fundamental to designing your EMS to control and minimise the environmental impacts arising from your activities, products and services. Related documents include:

- a) Section 4.3.1 of EMS Manual (EM-01)
- b) Environmental Procedure for Identification of Environmental Aspects and Significance Evaluation (EP-01)
- c) Register of Environmental Aspects (EAR-01)

a) Environmental Aspect Identification in EMS Manual (EM-01 Section 4.3.1)

Download [\(Template – EM-01 EMS Manual\)](#) Download [\(Sample\)](#)

This part of your EMS manual :

- Describes how you identify and evaluate the environmental aspects derived from your activities, products and services.

Helpful Tips:

- ❑ You can modify the approach to identifying and evaluating your environmental aspects. However, make sure that your approach is **systematic** and **comprehensive**.

b) Procedure for Environmental Aspect Identification (EP-01)

Download [\(Template – EP-01 Identification of Environmental Aspects and Significance Evaluation\)](#)

Download [\(Sample\)](#)

This environmental procedure helps you to identify and assess the environmental aspects (EAs) that your company **can control**, and over which it can **have an influence**.

Step 1 : Identify your environmental aspects

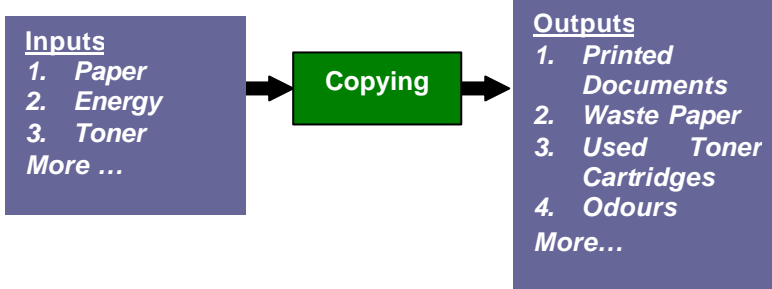
- 1) Use procedure EP-01 to define the responsibility and method of identifying your EAs, and evaluating which EAs are significant environmental aspects (SEAs).
- 2) Map your company's activities and processes
 - Production processes, work flow
 - Office operations

Helpful Tips:

- ❑ The following are typical EAs to be considered :
 - ✓ Air emissions
 - ✓ Water discharges
 - ✓ Solid and hazardous wastes
 - ✓ Noise and vibration
 - ✓ Energy use
 - ✓ Contamination of land

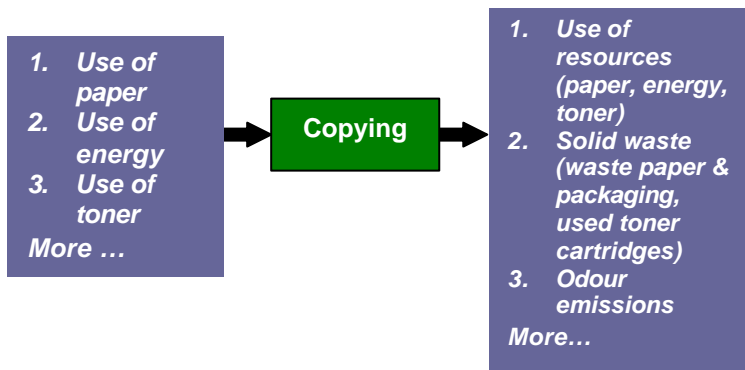
- Building facilities maintenance

3) For example, inputs and outputs are :



4) Identify the environmental aspects of your activities, and decide if you can control and influence them.

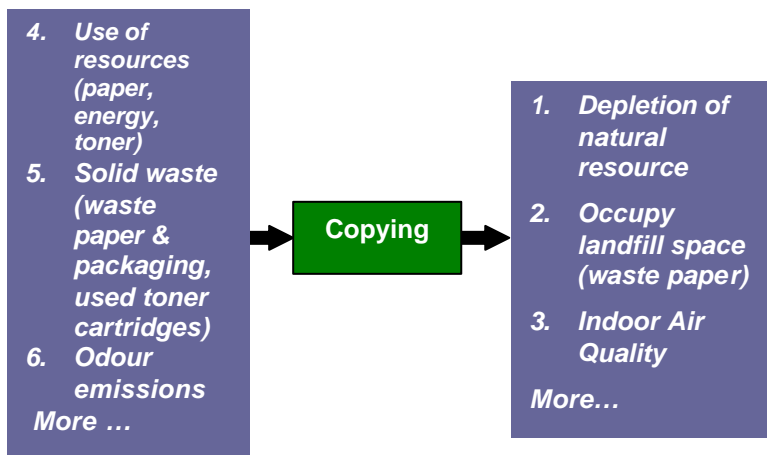
Following previous example, the EAs are :



5) Identify related environmental impacts

- Link between aspects and impacts is similar to “**cause and effect**”.

Following previous example, the environmental impacts are :



- ✓ Raw material and resource use (water, energy, etc.)
- ✓ Local issues (e.g. noise, odour, dust, traffic, etc.)
- ✓ Hazardous material storage and handling
- ✓ Hazardous material storage and handling
- ✓ Habitat disturbance
- ✓ Potential fire
- Remember to look at services as well as products, on-site and off-site operations, activities that you may control and have influence.
- EAs can be **positive** (e.g. waste recycling) or **negative** (e.g. toxic waste generated)
- EAs may result from your **past activities and emergency situations**
- EAs should be identified comprehensively and reviewed regularly to ensure that they are still appropriate (e.g. when you introduce new product lines, or build new facilities).
- Refer to the [Practical Examples of ISO 14001 EMS of EA Registers](#) for more details.

Table 5. Environmental Aspects : Things to Consider

Requirements	Technical	Environmental	Level
<ul style="list-style-type: none"> • Legislation • Permits • Customers • Complaints 	<ul style="list-style-type: none"> • Process • Storage • Transfer • Transport • Utilities • Product 	<ul style="list-style-type: none"> • Air • Water • Waste • Noise and vibration • Land and groundwater contamination • Energy consumption • Nuisance • External safety • Product • Potential fire 	<ul style="list-style-type: none"> • Site / plant • Department • Installation / equipment • Subcontractor / supplier

Step 2 : Evaluate the significance of your environmental aspects

- 1) Define the evaluation method that you will use to determine significance. There are various evaluation methods including criteria based filtering, environmental risk assessment, etc.
- 2) The Generic ISO 14001 EMS Template in the EP-01 uses a **criteria-based filtering** method which is commonly adopted by local companies, and widely accepted by certification bodies. An example is shown in Figure 5 below.
- 3) Define the criteria that you will use to determine significance. Typical criteria include legal or customer requirements, environmental consequences, and material usage. Table 6 and Figure 5 show further examples.

ISO 14001 does not specify the evaluation method and criteria for determining significant environmental aspects. It is up to the companies to decide their own methods.

Helpful Tips :

- ❑ Other types of evaluation methods are provided in the Practical Examples of ISO 14001 EMS (e.g. environmental risk assessment in Case 3)
- ❑ The Generic ISO 14001 EMS Template procedure EP-01 is self-explanatory with the evaluation method defined. You may choose to design your own methodology (e.g. scoring method, example is risk assessment method, $R=P \times S$)

R=risk, P=probability S=severity

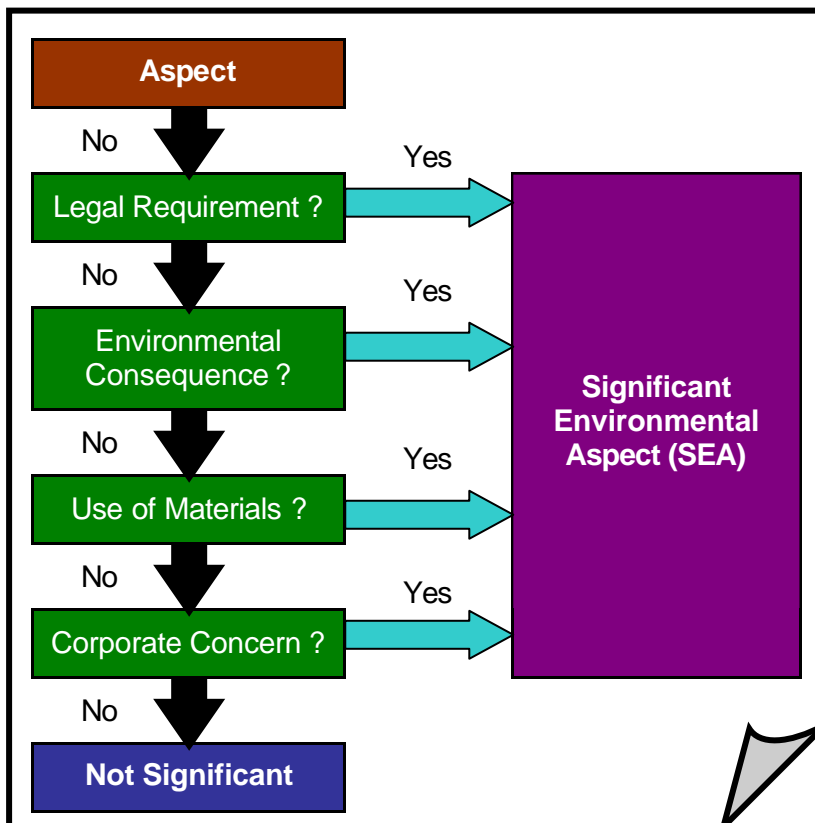
Table 6. Criteria and Scores for Evaluation of Environmental Aspect Significance

Evaluation criteria	Conditions	Score
Legal requirement	The aspect is legally and contract regulated.	1
	The aspect is not legally regulated.	0
Environmental consequence	Expected release of pollutants of severe environmental consequence	1
	Unexpected situation such as emergency may cause uncontrolled released of pollutants, or serious damage to flora, fauna or historical heritage.	1
	The aspect does not have potential environmental impacts of severe consequence.	0

Evaluation criteria	Conditions	Score
Use of materials	Large consumption of materials with significant potential to reduce, reuse and recycle.	1
	Consumption of materials that are hazardous in nature and can be replaced by more environmentally benign alternatives.	1
	Consumption of materials that originate from environmentally sensitive sources.	1
	Consumption of materials that have little or no potential for reduce, reuse, recycling, replacement, and are not from environmentally sensitive sources.	0
Corporate concerns	The Company has received valid, justifiable complaints for similar situations previously.	1
	The aspect concerns suppliers or contractors' activities and can potentially be influenced by the Company.	1
	The aspect is about selection of suppliers or contractors	1
	The aspect is a corporate concern that can be reflected from the environmental policy	1
	None of above	0

Note : 1 = Yes, 0 = No

Figure 5. Workflow of Environmental Aspect Identification and Evaluation



Step 3 : Documentation

- 1) Compile the EAs that you have identified and their significance evaluation in your Register of Environmental Aspects (EAR-01).

c) Register of Environmental Aspects (EAR-01)

Download ([Template – EAR-01 Register of Environmental Aspects](#))

Download ([Sample](#))

The Register of Environmental Aspects compiles the environmental aspects derived from your activities, products and services. The register also denotes the significance of your environmental aspects and your respective operational controls for significant aspects.

How to use Generic ISO 14001 EMS Template EAR-01?

1) *Activities*

- Each excel sheet represents a common business activity in your company, these may include: office, facility maintenance, each production process, warehouse, etc.

2) *Column A : Ref Number*

- Define a reference number for each EA identified for easy reference.
- Numbering format can be OF-01 for office, CA-01 for car-using activities, etc.

3) *Column B : Environmental Aspects*

- List the EAs identified for each activity (e.g. use of chemicals).

4) *Column C-I : Potential environmental impacts*

- Place “x” to mark the environmental impacts that may be generated from such aspect (e.g. air, water, etc).

5) *Column J-M : Evaluation of Significance*

- Based on the criteria and evaluation method defined in EP-01, mark either “1” or “0” as a score for significance.

6) *Column N : SEA*

- Place “Y” if the environmental aspect is evaluated to be a Significant Environmental Aspect (SEA); otherwise place “N”.

7) *Column O : Operational Control / O&T reference*

- You will need to have an operational control for all of your SEAs. You can implement your operational controls either through environmental procedures / instructions (EP / EI) or setting environmental objectives and targets (O&T).

8) Reviewed and Approved signatures

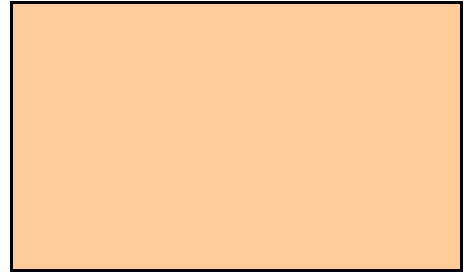
- To be signed by responsible personnel (e.g. Top Management, Environmental Management Representative (EMR), etc.)

Helpful Tips :

- ❑ For some cumulative environmental aspects such as use of electricity, water consumption, etc. which can be controlled by single operational measure, they can be singled out in a separate excel table for easier reference. For instance, “Use of electricity” is a cumulative EA and its impact shall be controlled by “EI-08 Resource Conservation” which includes some best practices for energy saving.
- ❑ Company may maintain a single register for all activities of the corporation; or maintain separate registers for corporate level / site level / department level / project level, etc.
- ❑ Additional column is found in Practical Examples of ISO 14001 EMS in this package for easy cross reference of legally regulated EAs with the relevant legislation in LR-01.

based on what you have defined in the roles and responsibility (refer to Section C1) and control of documents (refer to Section C5).

ISO 14001 does not specify the format of Registers of Environmental Aspects, the companies can decide their own format to present information.



2. Legal and Other Environmental Requirements

(ISO/DIS 14001 (Date: 9 July 2003) 4.3.2 Legal and Other Environmental Requirements)

Identifying and complying with legal and other environmental requirements is a key to the success of your EMS. This includes all relevant regulations (local and international, particularly if you deal with overseas clients) and other self-imposed requirements (e.g. codes of practice, client requirements, etc.). Related documents include:

- a) Section 4.3.2 of EMS Manual (EM-01)
- b) Environmental Procedure for Legal and Other Environmental Requirements (EP-02)
- c) Register of Legal and Other Environmental Requirements (LR-01)

a) Legal and Other Environmental Requirements in EMS Manual (EM-01 Section 4.3.2)

Download ([Template – EM-01 EMS Manual](#)) Download ([Sample](#))

This section of your EMS manual:

- Describes how you identify and update your relevant legal and other requirements.

Helpful Tips:

- ❑ You can modify the approach for identifying your legal and other environmental requirements. However, make sure that your approach is **systematic** and **comprehensive**.

b) Procedure for Legal and Other Environmental Requirements (EP-02)

Download ([Template – EP-02 Review of Legal and Other Requirements](#)) Download ([Sample](#))

This environmental procedure is established and maintained by your company to identify, have access to and understand all legal and other requirements relevant to the environmental aspects of your activities. Legal and other requirements include but are not limited to :

- 1) Legal requirements – Ordinances, Regulations
- 2) Other environmental requirements – voluntary principles or codes of practice, non-regulatory guidelines, technical circulars, company-specific codes, contract requirements, etc.

Step 1 : Identify requirements

- Generic ISO 14001 EMS Template LR-01 presents a general framework for your reference to develop the register of legal and other environmental requirements tailored for your business nature and operations.
- The procedure describes how your company

Helpful Tips:

- ❑ **Environmental Regulations in Hong Kong** – Websites of Environmental Protection Department www.epd.gov.hk and Bilingual Laws Information System of HKSAR Government www.justice.gov.hk provides

identifies the requirements of these regulations and their applicability.

- The procedure describes how you plan to comply with relevant requirements and maintain records as requested.

Step 2 : Access and communicate

- The procedure describes how you seek how you can access those requirements (e.g. through internet or purchase of relevant documents)
- The procedure describes how you communicate these requirements to employees, on-site contractors and others, as needed.

Step 3 : Review and update

- The procedure describes how you will regularly review and update any changes of legal and other requirements.

updated statutory environmental information in Hong Kong for public access.

- ❑ Other relevant business / contract requirements will also need to be identified.

c) Register of Legal and Other Environmental Requirements (LR-01)

Download ([Template – LR-01 Register of Legal and Other Environmental Requirements](#))

Download ([Sample](#))

This register compiles the legal and other requirements (legislation, codes of practice, regulatory and non-regulatory guidelines, contract requirements, etc.) that are applicable to your company.

How to use Generic ISO 14001 EMS Template LR-01?

- Review each regulation in Practical Examples of ISO 14001 EMS to determine its applicability to your company.
- Determine if the regulation is applied to your company directly, and/or to the responsibility of your contractors / suppliers.
- Define the area of applicability of specific regulations. For example, Air Pollution Control (Motor Vehicle Fuel) Regulation is applied to vehicles owned by your company or contractors.
- Review the documents listed under “Licenses / Compliance Records Required” which demonstrates your legal compliance status to particular regulation, and ensure that this list is updated accordingly.
- Refer to [Practical Examples of ISO 14001 EMS](#) for easy reference.

Helpful Tips:

- ❑ Define clear responsibility to maintain and provide regular update for your Register of Legal and Other Environmental Requirements.
- ❑ Additional column is found in Practical Examples of ISO 14001 EMS in this package for easy cross-reference of environmental legislation with the relevant Environmental Aspects in EAR-01.

3. Objectives, Targets and Programme

(ISO/DIS 14001 (Date: 9 July 2003) 4.3.3 Objectives, Targets and Programme)

Objectives, targets and programmes (O&T) are one way in which your EMS can control your significant environmental aspects and impacts. (The other is through operation controls, described in Section C6.) Related documents include:

- a) Section 4.3.3 of EMS Manual (EM-01)
- b) Objectives, Targets and Management Programmes (O&T-YYYY)

To comply with ISO 14001 you need to :

- Describe the responsibility and mechanism to establish, review and monitor the environmental objectives, which are ways to demonstrate continual improvement.
- Also describe the responsibility and mechanism to establish environmental management programme to achieve objectives.

Helpful Tips:

- It can be modified based on company's preference.
- Use O&T when it is possible to improve performance;
- Use Operational Controls (EIs) when it is not possible to improve at this time, but the aspect still needs to be managed.
- You can modify the approach to identifying your objectives, targets and programmes. However, make sure that your approach is **systematic** and **comprehensive**.

a) Objectives, Targets and Programmes in EMS Manual (EM-01 Section 4.3.3 and O&T-YYYY)

Download ([Template – EM-01 EMS Manual](#)) Download ([Sample](#))

Download ([Template – O&T-YYYY Objectives, Targets and Management Programmes](#))
Download ([Sample](#))

This section of your EMS manual describes how you establish and review your objectives, targets and environmental management programmes.

Objective is a company goal that is consistent with the company's environmental policy, significant environmental aspects and impacts, and applicable environmental regulations.

Target is a more detailed performance requirement related to and supporting a specific objective.

Environmental Management Programme should be linked directly to your environmental objectives and targets (O&Ts) and describe how your company will translate its goals and policy commitments into concrete actions so that environmental O&Ts are achieved.

The method to develop and track O&Ts and their Environmental Management Programme is briefly described in EM-01 Section 4.3.3. It can be modified according to your company's needs.

Use the Generic ISO 14001 EMS Template O&T-YYYY, to establish your O&Ts and Environmental Management Programme for year YYYY.

How to develop and maintain your O&T?

- 1) Your O&Ts should be developed by the people in the functional area involved, since they will be best positioned to establish, plan for, and achieve these goals.
- 2) Areas to consider in developing O&T
 - SEAs identified in processes and activities (e.g. reduce waste, prevent pollution, conserve resources, product design),
 - regulatory requirements,
 - communications with interested parties (neighbours, staff, community group, same business sectors, contractors / suppliers)
- 3) Communicate O&Ts and their progress across your company.

Helpful Tips:

- ❑ Objective should be **specific**, and targets should be **measurable**, where practicable.
- ❑ Be **flexible** in your objectives, and keep them **simple**. Allow the responsible staff to determine how to achieve the O&T.
- ❑ Factors to consider while developing O&T :
 - ✓ Reasonable, realistic
 - ✓ Technologically feasible
 - ✓ Consistent with company's policy
 - ✓ Affordable
- ❑ Operational staff can be the best candidates to propose O&Ts as they will be eventually responsible for performance.

How to develop and maintain your Environmental Management Programme?

- 1) Define :
 - **Responsibilities** for achieving goals
 - **Means** for achieving goals
 - **Time frame** for achieving those goals
- 2) Modify your program if :
 - O&Ts are modified or added;
 - Relevant legal requirements are introduced or changed;
 - Major progress in achieving your O&T has been made (or has not been made); or
 - Your products, services processes, or facilities change or other issues arise

Helpful Tips:

- ❑ Build on plans and programs that are existing for other management systems.
- ❑ Keep it simple and focus on continual improvement of the program over time.
- ❑ Communicate expectations of the EMS and O&T together with the responsibilities to those individuals who can affect environmental aspects.
- ❑ Cost savings can be achieved through the coordination between Environmental Management Programme and other managements programs

How to use Generic ISO 14001 EMS Template O&T-YYYY?

- 1) Numbering
 - Assign a number for each Objective for easy reference.
- 2) Relevance to Environmental Policy

Helpful Tips:

- ❑ Refer to the Practical Examples of ISO 14001 EMS to develop your own O&Ts
- ❑ It is not a "must" to develop

- Indicate how the specific Objective is linked to your company's Environmental policy
- 3) Objective
 - A simple description on your objective.
 - 4) Target
 - A brief explanation on the measurable target(s).
 - 5) Environmental Management Programme
 - A concise action plan on how to achieve each Target.
 - 6) Responsible Staff
 - The responsible personnel for achieving each target.
 - 7) Start Date / End Date
 - The time frame for achieving each target.
 - 8) Actual Results
 - To report the progress in achieving individual targets.

your O&T with direct association with your policy, but a reference to demonstrate the connection between your O&T in line with your policy

More than one target can be involved to achieve an Objective.

Develop your SMART O&T:

✓ S – Specific

✓ M – Measurable

✓ A – Achievable

✓ R – Realistic

✓ T – Time-bound

C. Do

The goal of “Do” is implementing the processes identified during “Plan” phase.

1. Resources, Roles, Responsibility and Authority

(ISO/DIS 14001 (Date: 9 July 2003) 4.4.1 Resources, Roles, Responsibility and Authority)

All staff in your company should clearly understand their environmental roles and responsibilities, as well as understand the importance of the environmental objectives and targets that they can affect. Related documents include:

- a) Section 3.1, 3.2, and 4.4.1 of EMS Manual (EM-01)

To comply with ISO 14001 you need to :

- Define and communicate EMS job responsibilities and authorities.
- Nominate an Environmental Management Representative (EMR) and deputy for your company.
- Refer to Generic ISO 14001 EMS Template EM-01 Section 3 for more detailed requirements.

Helpful Tips

- Be flexible in your organisation structure.
- Communicate to people what their roles are.

a) Organisation Chart in EMS Manual (EM-01 Section 3.1)

Download ([Template – EM-01 EMS Manual](#)) Download ([Sample](#))

This part of your EMS Manual :

- Presents your Company Organisational Chart which clearly define the EMS organisation structure.
- Identifies major staff and their role in EMS development and implementation.

Helpful Tips

- Insert your company information into this section.
- The structure shall be as flexible as possible, while ensuring that it is comprehensive.

b) Responsibility in EMS Manual (EM-01 Section 3.2)

Download ([Template – EM-01 EMS Manual](#)) Download ([Sample](#))

This part of your EMS Manual :

- Defines the duty and responsibility of each responsible personnel under EMS.
- Defines which position is your Top Management (e.g. *Chief Executive Director*), EMR (e.g. *Environmental Manager*), DEMR (e.g. *Administration Manager*), and member of your EMS Committee (e.g. *all departmental*

Helpful Tips

- Responsibilities may combine both environmental functions and others, such as quality, safety functions.

managers, safety officer).

- Defines the members involved in management review and the period of the management review.

Job descriptions provided in the Generic ISO 14001 EMS Templates can be changed according to your preference.

c) [Resources, Roles, Responsibility and Authority in EMS Manual \(EM-01 Section 4.4.1\)](#)

Download ([Template – EM-01 EMS Manual](#)) Download ([Sample](#))

This part of your EMS Manual describes how your company determine the resources (e.g. finance, staff), organisational roles, and personnel responsibility for your EMS. It is very important to clearly define as they relate to the achievement of environmental objectives and targets, and the overall operation of the EMS.

Helpful Tips

- ❑ Communicate the EMR's roles and responsibilities to all staff.

2. Competence, Training and Awareness

(ISO/DIS 14001 (Date: 9 July 2003) 4.4.2 Competence, Training and Awareness)

The ultimate goal of training is to explain the importance of the EMS to staff, and to explain their responsibilities for EMS operations. Related documents include:

- a) Section 4.4.2 of EMS Manual (EM-01)
- b) Environmental Procedure for EMS Training (EP-03)

a) Competence, Training and Awareness in EMS Manual (EM-01 Section 4.4.2)

Download ([Template – EM-01 EMS Manual](#)) Download ([Sample](#))

This part of your EMS Manual describes how you identify the training needs of your staff, and plan and evaluate training your employees regarding EMS and related matters.

Helpful Tips:

- It can be modified based on company's preference.
- You can modify the approach to identify your training. However, make sure that your approach is **systematic** and **comprehensive**.

b) Procedure for EMS Training (EP-03)

Download ([Template – EP-03 EMS Training](#)) Download ([Sample](#))

Every staff and function in your company has a role to play in your EMS. Every employee has potential impacts on the environment and can also suggest ideas to improve the environmental performance of your company. Therefore, competency for key roles should be established and appropriate training provided to ensure the performance of your EMS. Competence is also based on a combination of education, training, and experience.

The training provided to each person in your company should include the following :

- 1) **Environmental policy**,
- 2) **Significant environmental aspects and impacts** of their work activities,
- 3) Key EMS **roles and responsibilities**,
- 4) **Procedures** that are applicable to their work, and
- 5) The importance of **conformance** with EMS requirements.

Helpful Tips:

- When to train?
 - ✓ New or changed environmental regulations
 - ✓ New or changed EMS aspects / O&T / procedures / process
 - ✓ Corrective action records the failure to follow instructions
 - ✓ New employee hire
 - ✓ Unacceptable performance
- Establish competency for various key tasks clearly.

Step 1 : Identify training needs and requirements

- Review your existing training programmes. Other training (e.g. safety) may also satisfy the EMS requirements.
- Consider both *general* and *specific* needs
- Develop an EMS training package for new employee orientation
- Review the qualifications and training needs of your trainers (both internal and external).

Helpful Tips:

- ❑ Don't forget to consider the training needs for temporary or contract staff, contractors and/or suppliers.
- ❑ Develop other "job-aids" (e.g. posted guidelines on site) as a supplement for establishing competency.
- ❑ If your company has an ISO 9001 Quality Management System in place, this part of EMS can be integrated using the same procedure with additional EMS features.

Step 2 : Training Staff

- Identify training needs and prepare training plan according to the training procedure (EP-03).
- Develop your EMS training materials.
- Train your EMS core team members on EMS requirements.
- Conduct EMS awareness training with all staff to ensure them to be aware of environmental policy, objectives, relevant significant environmental aspects, EMS responsibilities and emergency procedures, etc. as appropriate.
- Conduct EMS job specific training to ensure relevant staff understand the identification and control of significant environmental aspects (SEAs) (EP-01).

Helpful Tips : keeping records

Refer to the Generic ISO 14001 EMS Templates and Practical Examples of ISO 14001 EMS for the followings :

- ❑ Training plan
- ❑ Training attendance records

3. Communication

(ISO/DIS 14001 (Date: 9 July 2003) 4.4.3 Communication)

Effective communication is vital for a company to motivate staff, tell them what actions they should be taking for the sake of environment, confirm their roles and procedures, monitor environmental performance, and as a channel for identifying any potential for improvement. Related documents include:

- a) Section 4.4.3 of EMS Manual (EM-01)
- b) Environmental Procedure for Enquiry / Complaint / Nonconformity Handling (EP-07)

a) Communication in EMS Manual (EM-01 Section 4.4.3)

Download ([Template – EM-01 EMS Manual](#)) Download ([Sample](#))

This section of your EMS Manual :

- Describes the communication channels for environmental issues in your company.
- Highlights how effective **two-way internal** and **external** communication promotes environmental awareness.
- Sets out your handling procedures for any enquiry or complaints (internal or external) which are related to the environmental procedure [EP-07 Enquiry / Complaint / Nonconformity Handling](#).

Helpful Tips

- ❑ Identify your key audiences (for internal and external) and develop a communication mechanism(s) with individual groups of audiences.
- ❑ Make use of existing communication channel such as : **Internal methods** (newsletters, intranet, staff meetings, daily briefing sessions, notice boards, training, etc..), **external methods** (website / e-newsletter, annual reports, progress meetings, informal discussions, etc..)

How to initiate the communication?

- Hold EMS committee meetings with core team members to communicate EMS organisation and individual responsibilities, and establish EMS implementation plan.
- Define the *Effective Date* for the EMS implementation and announce the kick-off of the EMS.
- Distribute the EMS documents to relevant staff (refer to Control of EMS Documents EP-04)

Helpful Tips : keeping records

- ❑ Records include
 - ✓ Organisation chart and documented responsibilities, EMS committee member list, meeting minutes
 - ✓ Memo / minutes to announce the EMS effective date
 - ✓ Document distribution records, etc.

4. Environmental Management System Documentation

(ISO/DIS 14001 (Date: 9 July 2003) 4.4.4 Documentation)

The Generic ISO 14001 EMS Templates in this support package are developed based on the ISO/DIS 14001 (Date: 9 July 2003) standard. The four-level EMS documentation structure consists of :

- 1) **Environmental Manual** : includes EMS Manual, Policy, Objectives and Programs
- 2) **Environmental Procedures** : 9 procedures complying with ISO/DIS 14001 (Date: 9 July 2003) Standard, including associated Registers for Environmental Aspects and Legal and Other Requirements.
- 3) **Environmental Instructions** : operational procedures or environmental instructions describing how activities are performed to manage your significant environmental aspects.
- 4) **Environmental Records** : standard forms, checklists and reports for recording environmental performance to demonstrate compliance with EMS requirements.

Related document include:

- a) Section 4.4.4 of EMS Manual (EM-01)

a) Environmental Management System Documentation in EMS Manual (EM-01 Section 4.4.4)

Download [\(Template – EM-01 EMS Manual\)](#) Download [\(Sample\)](#)

This section of your EMS manual describes the EMS documentation structure and how the pieces fit together.

Helpful Tips

- The documentation structure may refer to your existing quality / safety management system if in place.

5. Control of Documents

(ISO/DIS 14001 (Date: 9 July 2003) 4.4.5 Control of Documents)

ISO 14001 requires that you provide a clearly defined source of documents for employees who should be aware of and understand all relevant environmental significant procedures and practices. Related documents include:

- a) Section 4.4.5 of EMS Manual (EM-01)
- b) Environmental Procedure for Control of EMS Documents (EP-04)

a) Control of Documents in EMS Manual (EM-01 Section 4.4.5)

Download ([Template – EM-01 EMS Manual](#)) Download ([Sample](#))

This section of your EMS manual :

- Describes the requirements on control mechanism on your EMS documents to ensure that everyone works with the right tools.
- Links to procedure EP-04 Control of EMS Documents.

Helpful Tips:

- ❑ Your control of EMS documents may integrate or make reference to your existing quality management system if applicable.

b) Procedure for Control of EMS Documents (EP-04)

Download ([Template – EP-04 Control of EMS Documents](#)) Download ([Sample](#))

This procedure ensures that each person in your company is working with the proper EMS documents. The procedure presents how your company :

- Reviews existing document control system, modify it to adopt EMS elements for easier development.
- Numbers EMS documents, and assigns the designated personnel for approval and review (specific documents should be revised accordingly under your company's culture).
- Highlights changes on any revised documents for easier understanding of other readers.

Helpful Tips:

- ❑ Suggested elements of document control:
 - ✓ Issue / revision / effective date
 - ✓ Approval (i.e. signature)
 - ✓ Revision number
 - ✓ Document number
 - ✓ Copy number
 - ✓ Cross-references
- ❑ Limited distribution of documents can make job easier.
- ❑ Maintain EMS documents electronically for ease of updating and controlling, if feasible.
- ❑ If your company has an ISO 9001 Quality Management System in place, this part of your EMS can be integrated using the same procedure with additional EMS features.

6. Operational Control

(ISO/DIS 14001 (Date: 9 July 2003) 4.4.6 Operational Control)

Operational Controls are one of the means through which your EMS can control your SEAs. (The other way is by setting O&Ts and Environmental Management Programmes, as described in Section B3). Related documents include:

- a) Section 4.4.6 of EMS Manual (EM-01)
- b) Environmental Instructions for various operational control (EI-xx)

a) Operational Control in EMS Manual (EM-01 Section 4.4.6)

Download ([Template – EM-01 EMS Manual](#)) Download ([Sample](#))

This section of your EMS Manual describes how your EMS :

- Builds environmental performance into your operations and activities.
- Manages your company's Significant Environmental Aspects (SEAs), ensures legal compliance, and achieves environmental objectives.
- Links to Environmental Instructions (EI-XX) for controlling your SEAs.

Helpful Tips:

- Develop controls based on your existing procedures / instructions
- Consider proper controls on your suppliers / contractors and their effects on your environmental performance.

b) Operational Control – Environmental Instructions (EI-xx)

Download ([Template – Environmental Instructions](#)) Download ([Sample](#))

Your EMS will consist of several different procedures which can help your company to manage its SEAs, ensure regulatory compliance and achieve environmental objectives. Determining which operations should be covered by documented procedures and how those operations should be controlled is a key step in developing an effective EMS.

In determining which operations / activities need to be controlled, look beyond routine production or service. Activities such as equipment maintenance, management of on-site contractors, and services provided by suppliers or vendors could also affect the environmental performance of your company.

How to develop your EI?

- **Step 1** : identify operations and other activities that are related to SEAs and/or legal requirements
- **Step 2** : define the controls implemented at certain processes of each operation / activity.
- **Step 3** : draft the instructions and review them with the people who are responsible for their implementation to ensure these instructions are appropriate, realistic and practical.

The following Generic ISO 14001 EMS Template documents are included in this package to provide

Helpful Tips:

- Activities that might require operational controls :
 - ✓ Management / disposal of wastes
 - ✓ Approval of new chemicals
 - ✓ Storage & handling of raw materials and chemicals
 - ✓ Equipment servicing
 - ✓ Wastewater treatment
 - ✓ Operation of plant / equipment

some direction on developing your EI. For more details on individual EIs, you may refer to the practical samples :

- 1) [Environmental Office Practices \(EI-01\)](#)
- 2) [Green Procurement \(EI-02\)](#)
- 3) [Environmental Practices for Using Company's Car \(EI-03\)](#)
- 4) [Waste Management \(EI-04\)](#)
- 5) [Air Pollution Control \(EI-05\)](#)
- 6) [Water Pollution Control \(EI-06\)](#)
- 7) [Noise Pollution Control \(EI-07\)](#)
- 8) [Resource Conservation \(EI-08\)](#)
- 9) [Handling and Storage of Chemicals \(EI-09\)](#)

- ✓ Management of contractors
- ❑ Understand existing processes and build on informal procedures with a flow chart.
- ❑ Focus on steps needed for consistent implementation
- ❑ Review draft procedures with employees that will have to implement them.
- ❑ Keep procedures simple and concise.
- ❑ Ensure employees are trained on these procedures.

How to Implement your EPs, EIs, O&Ts?

- Implement your EMS procedures (EPs), instructions (EIs) and management programmes (O&T-XXXX) to control SEAs, for example :
 - green office practices
 - green purchasing
 - waste handling, storage and disposal
 - air, noise, water pollution control
 - chemical handling and storage
 - material conservation and good housekeeping
 - energy saving program
- Implement emergency procedures, conduct drills and maintain preventive measures, etc., using [EP-05 Environmental Emergency Preparedness and Response](#).
- Communicate with suppliers, contractors and interested parties related to your environmental policy and relevant EMS requirements as necessary, and assess their environmental performance (e.g. through questionnaire surveys or site visits).

Helpful Tips : keeping records

- ❑ Records arising from operational control procedures, e.g.
 - ✓ waste disposal / recycling records,
 - ✓ wastewater treatment plant operation records,
 - ✓ purchasing records,
 - ✓ inspection records, etc.
- ❑ Records arising from emergency procedures, e.g.
 - ✓ fire drill records,
 - ✓ fire facilities inspection records,
 - ✓ accident reports, etc.
- ❑ Communication records, guidance notes for supplier control, etc.

(refer to Generic ISO 14001 EMS Templates and Practical Examples of ISO 14001 EMS for above records)

7. Emergency Preparedness and Response

(ISO/DIS 14001 (Date: 9 July 2003) 4.4.7 Emergency Preparedness and Response)

You will need to implement emergency preparation and procedures to respond to unplanned events in order to mitigate, reduce, and/or eliminate the environmental health and safety impacts. Related documents include:

- a) Section 4.4.7 of EMS Manual (EM-01)
- b) Environmental Procedure for Environmental Emergency Preparedness and Response (EP-05)

a) Emergency Preparedness and Response in EMS Manual (EM-01 Section 4.4.7)

Download ([Template – EM-01 EMS Manual](#)) Download ([Sample](#))

This section of your EMS Manual :

- Describes your approach to minimising the impacts of uncontrolled events; and
- Links to procedure EP-05 for Environmental Emergency Preparedness and Response.

b) Procedure for Environmental Emergency Preparedness and Response (EP-05)

Download ([Template – EP-05 Environmental Emergency Preparedness and Response](#))

Download ([Sample](#))

This environmental procedure sets out how effective preparation and response will help your company reduce injuries, prevent or minimise environmental impacts, protect employees and neighbours, reduce asset losses and minimise downtime.

Step 1 : Identify potential accidents and emergencies, for example

- Fire
- Chemical spillage
- Flooding
- Shutdown (e.g. wastewater treatment plant)

Step 2 : Mitigate the impacts of these incidents.

- Use the Generic ISO 14001 EMS Template EP-05 as a basis to define appropriate mitigation measures for all the potential incidents identified.
- Define mock drills requirements wherever practicable.

Step 3 : Communicate relevant procedure with everyone in your company

- Include contractors / suppliers and visitors

Helpful Tips:

- ❑ Post copies of the emergency plan around the site with phone numbers for on-site emergency coordinator / fire officers and local fire department, local police, hospital, and others as appropriate.
- ❑ Integrate your existing safety plan to include environmental issues.

D. Check

“Check” is the series of processes that you use to measure and monitor the effectiveness of your environmental policy, objectives, targets, legal and other requirements, and report the results to interested parties.

1. Monitoring and Measurement

(ISO/DIS 14001 (Date: 9 July 2003) 4.5.1 Monitoring and Measurement)

Measuring and monitoring is required to ensure that the EMS objectives and targets are being achieved. Related documents include:

- a) Section 4.5.1 of EMS Manual (EM-01)
- b) Environmental Procedure for Environmental Monitoring and Evaluation of Compliance (EP-06)

a) Monitoring and Measurement in EMS Manual (EM-01 Section 4.5.1)

Download ([Template – EM-01 EMS Manual](#)) Download ([Sample](#))

This section of your EMS Manual :

- Describes the requirements on monitoring the effectiveness of the control on significant environmental aspects (SEAs) and achievement of objectives.
- Links to procedure EP-06 for Environmental Monitoring and Evaluation of Compliance.

b) Procedure for Environmental Monitoring and Evaluation of Compliance (EP-06)

Download ([Template – EP-06 Environmental Monitoring and Evaluation of Compliance](#))

Download ([Sample](#))

Monitoring and measurement help to evaluate your environmental performance, analyse the root causes of problems, assess compliance with legal requirements, identify areas requiring corrective action, and improve performance and efficiency.

Step 1 : Identify your needs

- Define what kind of information is meaningful and should be collected. For instance :
 - key process characteristics
 - regulatory compliance
 - operational performance (effectiveness of operational controls of SEA)
 - progress on meeting objectives

Step 2 : Review existing monitoring systems

- Determine if current systems are sufficient, and identify any additional monitoring or measurement if needed.

Helpful Tips:

- Keep monitoring requirements limited to KEY process characteristics.
- Procedure to **calibrate** your equipment which truly affects your environmental performance is required.
- Use the Generic ISO 14001 EMS Template for the environmental monitoring plan to establish your environmental monitoring programs

Step 3 : Develop measurement programmes

- Ensure your programmes are simple, flexible, consistent, ongoing, produce reliable data and communicate results.

Step 4 : Monitoring and Checking

- Establish environmental management plan according to procedure EP-06.
- Carry out monitoring to ensure legal compliance, achievement of objectives and effective operational control.
- Implement corrective and preventive actions when non-conformances are identified during monitoring or operation. (Refer to EP-07).

Step 5 : Communicating performance

Provide relevant monitoring results to staff will raise their awareness on your company's environmental performance.

- Monitoring frequency and parameters should be defined based on legal requirements, company objectives and procedure requirements, wherever applicable

Helpful Tips : keeping records:

- Environmental monitoring plan
- Maintain permits and monitoring records, e.g.
 - ✓ wastewater discharge permit and test reports,
 - ✓ noise monitoring records,
 - ✓ green office inspection records,
 - ✓ electricity consumption records, etc.
- CAR (corrective action report)

2. Evaluation of Compliance

(ISO/DIS 14001 (Date: 9 July 2003) 4.5.2 Evaluation of Compliance)

Related documents include:

- a) Section 4.5.2 of EMS Manual (EM-01)
- b) Environmental Procedure for Environmental Monitoring and Evaluation of Compliance (EP-06)

a) Evaluation of Compliance in EMS Manual (EM-01 Section 4.5.2)

Download ([Template – EM-01 EMS Manual](#)) Download ([Sample](#))

This section of your EMS Manual :

- Describes the mechanism on the regular legal compliance evaluation.
- Links to procedure [EP-06 Environmental Monitoring and Evaluation of Compliance](#) (refer to Section D1b).

Helpful Tips:

- ❑ You may choose to integrate or make reference to the elements with your existing quality management system if applicable.
- ❑ You can modify the approach for evaluation of compliance. However, make sure that your approach is **systematic** and **comprehensive**.

3. Nonconformity, Corrective and Preventive Action

(ISO/DIS 14001 (Date: 9 July 2003) 4.5.3 Nonconformity, Corrective and Preventive Action)

The results of monitoring and measurements, evaluation of compliance, audit findings and other systemic reviews should be documented and reviewed, and must lead to corrective actions which are intended to fix and avoid EMS problems in the future. Related documents include:

- a) Section 4.5.3 of EMS Manual (EM-01)
- b) Environmental Procedure for Enquiry / Complaint / Nonconformity Handling (EP-07)

a) Nonconformity, Corrective and Preventive Action in EMS Manual (EM-01 Section 4.5.3)

Download ([Template – EM-01 EMS Manual](#)) Download ([Sample](#))

This section of your EMS Manual :

- Describes how your EMS will fix and avoid problems in the future.
- Links to procedure EP-07 Enquiry / Complaint / Nonconformity Handling.

Helpful Tips

- Your EMS may choose to integrate or make reference to the element with your existing quality management system if applicable.

b) Procedure for Enquiry / Complaint / Nonconformity Handling (EP-07)

Download ([Template – EP-07 Enquiry /Complaint / Nonconformity Handling](#))

Download ([Sample](#))

The procedure defines how your EMS analyses nonconformities to detect patterns or trends so that the same deficiency can be prevented in the future. Any enquiries or complaints received internally or externally by your company are treated as problems of your company and are also handled by this procedure.

- Step 1 :** Define the responsibilities to investigate root causes.
- Step 2 :** determine corrective and preventive action
- Step 3 :** implement action
- Step 4 :** verify the effectiveness.

Helpful Tips

- If your company has an ISO 9001 Quality Management System in place, this part of your EMS can be integrated using the same procedure with additional EMS features.

4. Records

(ISO/DIS 14001 (Date: 9 July 2003) 4.5.4 Records)

Environmental records are required to demonstrate compliance with your EMS and show that it is functioning properly. Related documents include:

- a) Section 4.5.4 of EMS Manual (EM-01)
- b) Environmental Procedure for Control of EMS Records (EP-08)

a) Records in EMS Manual (EM-01 Section 4.5.4)

Download ([Template – EM-01 EMS Manual](#)) Download ([Sample](#))

This section of your EMS Manual :

- Describes the requirements on maintaining records, which are the evidence demonstrating the EMS is working as intended.
- Links procedure EP-08 Control of EMS records.

Helpful Tips

- ❑ Your EMS records may integrate or make reference to your existing quality management system if applicable.

b) Procedure for Control of EMS Records (EP-08)

Download ([Template – EP-08 Control of EMS Records](#)) Download ([Sample](#))

Records demonstrate the EMS developed and implemented in your company is effective.

Step 1 : Identify records to be kept

- Records may include (but are not limited to) those demonstrate your EMS implementation and required by various legal requirements.

Step 2 : Determine the retention time, location, responsible personnel, etc.

Step 3 : Define the disposal method after the retention time.

Helpful Tips

- ❑ If your company has an ISO 9001 Quality Management System in place, this part of EMS can be integrated using the same procedure with additional EMS features.
- ❑ May maintain your records electronically for easier retrieval and access control.

5. Internal Audit

(ISO/DIS 14001 (Date: 9 July 2003) 4.5.5 Internal Audit)

Internal audit should determine a company's compliance with the ISO 14001 EMS. Related documents include:

- a) Section 4.5.5 of EMS Manual (EM-01)
- b) Environmental Procedure for Internal EMS Audit (EP-09)

a) Internal Audit in EMS Manual (EM-01 Section 4.5.5)

Download ([Template – EM-01 EMS Manual](#)) Download ([Sample](#))

This section of your EMS Manual :

- Describes your approach to conducting internal audits to determine the effectiveness of your EMS implementation and conformance with ISO 14001 requirements.
- Links to procedure EP-09 Internal EMS Audit.

Helpful Tips

- ❑ Internal audits may integrate or make reference to your existing quality management system if applicable.

b) Procedure for Internal EMS Audit (EP-09)

Download ([Template – EP-09 Internal EMS Audit](#)) Download ([Sample](#))

A proactive and objective approach identifies and resolves EMS deficiencies. The results of your internal audits should be linked to corrective and preventive actions (EP-08) for continual improvement.

Step 1 : Frequency of the Audit

- Consider the nature of your operations and activities, SEAs / their impacts, results of monitoring processes, results of previous audits, etc..
- Should be at least annually for the whole company, can be at once or broken down into discrete elements for more frequent audits

Step 2 : Appoint Auditors

- Select and train auditors (at least 2 auditors)
- Auditors should be independent of the activities being audited.

Step 3 : Internal Audit

- Select auditing team members and arrange internal auditor training.
- Establish internal audit plan and conduct internal audit according to procedure EP-09.

Helpful Tips

- ❑ If your company has an ISO 9001 Quality Management System in place, this part of EMS can be integrated using the same procedure with additional EMS features.
- ❑ Audits should
 - ✓ Focus on objective evidence of conformance
 - ✓ Review identified problems
 - ✓ Assess how well your system operates

- Prepare audit report and review audit results to identify areas for improvement.

Step 4 : Audit Results Management

- Identify trends or patterns in EMS problems following EP-08.
- Communicate results

Helpful Tips : keeping records:

- Auditor training certificates
- Internal audit plan
- EMS Audit checklist
- Corrective Action Report
- Internal audit report

(refer to the Generic ISO 14001
EMS Templates and Practical
Examples of ISO 14001 EMS for
above records)

E. Act

“Act” means taking actions to continually improve the performance of your EMS.

1. Management Review

(ISO/DIS 14001 (Date: 9 July 2003) 4.6 Management Review)

Your Management review is an essential portion of the continual improvement of your company's EMS. Related document include:

a) Section 4.6 of EMS Manual (EM-01)

a) Management Review in EMS Manual (EM-01 Section 4.6)

Download ([Template – EM-01 EMS Manual](#)) Download ([Sample](#))

This section of your EMS Manual :

- Describes the requirements for conducting management review.
- Determines the management review frequency (and as the rule of thumb, at least annually).
- Requires that meeting minutes record issues discussed, decisions made, and action items selected; and should be documented appropriately.
- Ensures that someone will follow-up the progress on action items until completion.

Helpful Tips:

- ❑ Consider your company's structure to define the responsibility and personnel involved in your management review.
- ❑ The management review may integrate or make reference to your existing quality / safety management system if applicable.

Review for Improvement

- Your EMS committee (or EMS core team members) conduct regular meetings to discuss and review the implementation of EMS and areas for improvement.
- Your top management will need to conduct periodic management reviews to ensure the overall effectiveness and continual improvement of the EMS, allocate sufficient resources and identify on-going improvement objectives.

Helpful Tips : keeping records

- ✓ meeting minutes
- ✓ follow-up actions (e.g. action plans, correspondence, etc.), wherever necessary

F. Keys to Successful Implementation

The following obstacles to implementation are commonly faced, especially for SMEs, that should be remembered and overcome during EMS implementation.

1. Lack of management commitment

The success of an ISO 14001 EMS is highly dependent on top management commitment and support. Commitment can be difficult to obtain when there is lack of understanding of the standard and the benefits. In order to secure commitment, top management should be provided with training that raises the importance of ISO 14001, highlights the benefits associated with an EMS, simplifies the steps associated with ISO 14001 implementation, and the possibility of integrating with other management systems.



Tip: It is especially useful to demonstrate the value of an EMS by bringing senior management attention to environmental risks and liabilities, supply chain pressure and market trend.

2. Lack of understanding and proper expertise

An important consideration in the development, implementation and maintenance of an ISO 14001 EMS is the need to ensure complete understanding of the standard by core personnel. The misunderstanding of requirements and wrong usage of the standard can be avoided by ensuring that ISO 14001 expertise is consulted throughout the process.



Tip: Remember that structural and operational system changes should always be preceded by the appropriate support and training.

3. Misconceptions about the standard creating too much paper work

An ISO 14001 EMS requires an organisation to have in place procedures, documentation and records. All procedures, documentation and records are developed to meet specific ISO 14001 Standard requirements to ensure functionality of the system.



Tip: Avoid unnecessary procedures, documentation and records. Keep it simple! Integrate to existing management systems if applicable.

4. Lack of a well informed and involved workforce

Successful implementation of an EMS requires the input and action of all employees across the organisation. Responsibilities and roles of each function and level need to be clearly defined and well communicated. Employees should be encouraged to adopt environmental practices and understand the benefits.



Tip: Communicate with all levels of staff and let everyone know the EMS direction of the company. Arrange incentive programs to initiate employees' input.



ISO 14001 Certification Process

IV. ISO 14001 EMS CERTIFICATION PROCESS

Third-party certification is performed by a registered external auditing organisation, normally referred to as a Certification Body (CB). An expert third-party audits the EMS for compliance with all elements of ISO 14001. Third-party certification of an organisation's EMS can help to establish credibility and inspire greater confidence in external stakeholders (e.g., customers, the public, regulators, governments, and other organisations) because of the perception that third-party certifiers act independently and audit an organisation's EMS in an unbiased manner.

This Section details the typical ISO 14001 certification process in line with the requirements of ISO/IEC Guide 66 (General requirements for bodies operating assessment and certification/registration of environmental management systems). The certification process is a multi-stage process as shown in Figure 4, which is based on the requirements of ISO/IEC Guide 66 and common practices of certification bodies in Hong Kong, however there may be some variation in practice between certification bodies. Organisations planning for certification must appoint a CB ahead of time and provide usually 3 months of implementation evidence before certification.

The cost for certification can be varied among companies with different size and risks to the environment, and also among CBs. As a reference, the average manday rate for certification is about \$7,000 and the total cost for SMEs can be ranging from \$20,000 to \$50,000, based on the year of 2004 estimate, depending on the scope and nature of the organisation. For further enquiry on the cost for certification, please consult individual CBs as listed in [Appendix 4](#).

Table 7 briefs the general steps toward ISO 14001 certification and certification requirements.

Table 7. General steps toward ISO 14001 Certification

<p>Step 1 : Select Certification Body</p>	<p>Select your Certification Body (CB), a list of Certification Body common in Hong Kong is provided in Appendix 4. Some CBs will pay an initial visit to clients to explain their certification process and to understand the potential clients' activities on site in order to give the client an accurate quotation for the certification.</p>
<p>Step 2 : Complete Questionnaire and Establish Contract</p>	<p>When applying for ISO 14001 certification, it is necessary to complete a questionnaire to allow CB to assess the nature, scale and complexity of your organisation. This will determine the skill and time allocation required to carry out a comprehensive and efficient assessment. From this a quotation will be produced confirming the cost of certification, ongoing surveillance and re-assessment. Following acceptance of the quotation, the CB will arrange certification schedule for your organisation.</p>
<p>Stage 3 : Document Review</p>	<p>CB will ask you to provide your organisation's EMS document for auditor review. The purpose of document review is to check that the documented EMS fully reflects all necessary requirements and is capable of delivering full compliance with ISO 14001.</p>

<p>Stage 4 : First Stage Assessment</p>	<p>The first stage assessment (FSA) consists of a site tour and system overview to establish that your EMS relates to your environmental aspects. A detailed plan is provided in advance of the visit and a full report produced on-site, together with a plan for the certification assessment. Any non-conformance identified at this stage will require a corrective action plan.</p>
<p>Stage 5 : Certification Assessment</p>	<p>The certification assessment, which normally follows approximately one month after the FSA, is a review of the effectiveness of the implemented EMS against ISO 14001 Standard and your organisation's own requirements. A full report is prepared at the end of the audit. This is reviewed with you at a closing meeting, and a recommendation for registration will be made if there is no major non-conformance found. Where necessary you will be requested to provide a corrective and preventive action plan or follow-up visit before a recommendation is made.</p>
<p>Stage 6 : Award Certification</p>	<p>If satisfactory, an independent review will be conducted on the report. Following a satisfactory review, CB will award certification. Certificates are valid for three years, subject to satisfactory surveillance visits.</p>
<p>Step 7 : Surveillance Visit</p>	<p>Following certification, routine surveillance is carried out on a six to twelve month basis. The final visit in the certification cycle is termed a renewal visit.</p>
<p>Step 8 : Renewal Assessment</p>	<p>A recommendation is made from this review on certificate renewal, together with any adjustment required to the ongoing surveillance plan. The renewal package is then reviewed independently and if satisfactory, certification is renewed for another three-year period.</p>

Figure 6. ISO 14001 Certification Process

