



Clause-by-clause explanation of  
**ISO 14001:2015**

WHITE PAPER

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# 0. Introduction

Environmental systems are often regarded by modern business leaders as systems that provide the means to meet environmental compliance and regulatory legislation, but this outlook can prevent a properly constructed EMS (Environmental Management System) from reaching its full potential, which provides financial, economic, and reputational benefit as well as the obvious environmental benefit. Whether standing alone or integrated with another management system, such as ISO 9001 (Quality) or OHSAS 18001 (Operational Health and Safety), the ISO 14001:2015 standard provides guidance and direction on how an organization should manage and mitigate its impact on the environment. Understanding how to use the standard intelligently can bring many benefits to an organization of any size.

This handbook is designed to help employees involved in establishing and maintaining an EMS within their respective organizations. Each clause will be explained in the same order with identical clause numbers to the ISO 14001:2015 International Standard clauses themselves, and links to supplementary learning materials and an online course will also be provided in the text to help the reader.

For more details, please see our free online [ISO 14001:2015 Foundations Course](#).



# 1. Process and process approach

## 1.1 TERMS AND DEFINITIONS

**Process:** Can be defined as a series of activities and actions that can be repeated consistently to produce a transformation to a product or service from a series of inputs to a defined output.

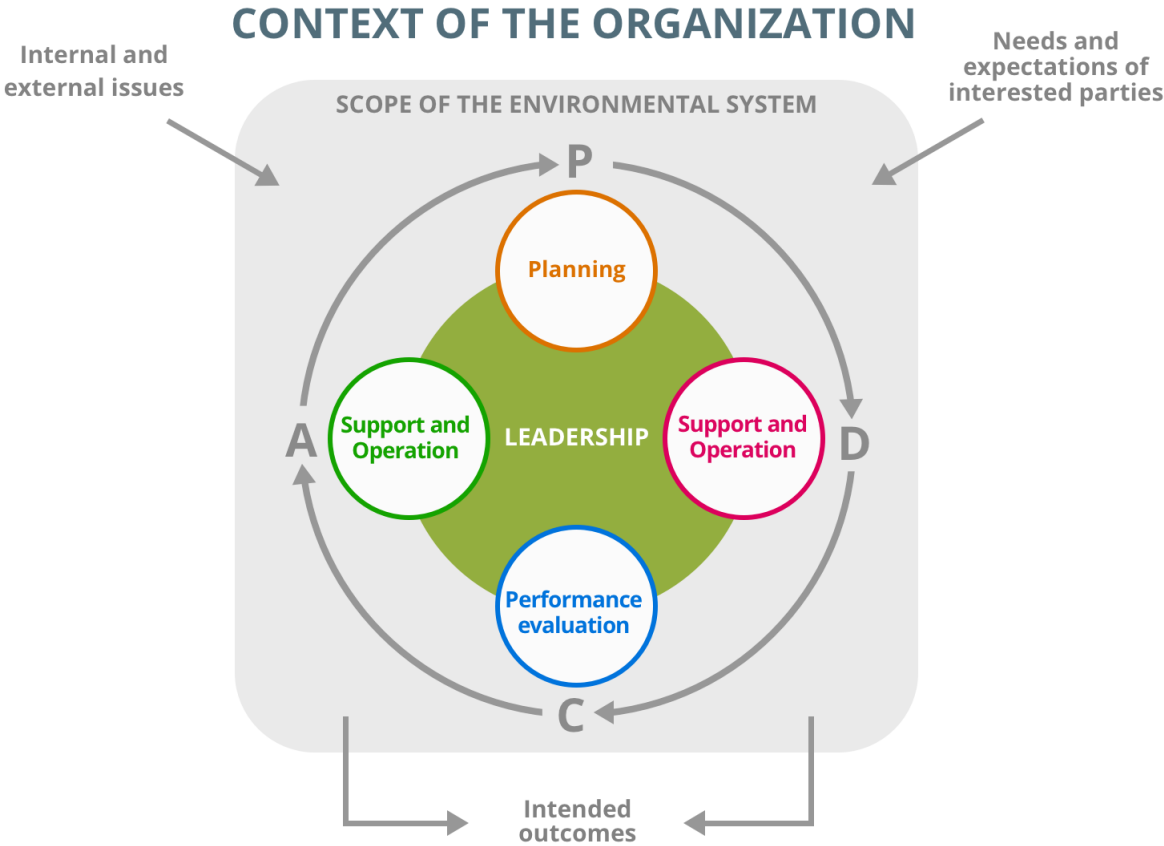
**Process Approach:** Environmental systems, similarly to other management systems, use a combination of sequences and interactions to produce a desired output. When all activities and actions are managed together with consideration towards each other and the end result, this method is known as the “process approach.” A process approach will also specify responsibility towards process owners, for example, as opposed to being considered as generic. Therefore, when a company has an EMS that is considered an active and fluid system, taking into account all variables and their effects on the objectives, this is considered a process approach.

**Inputs:** The collection of elements that may be required to feed a process, for example – resources, raw material, and machinery.

**Outputs:** The result of a process, whether goods or services or undesirable outputs, such as wastage or pollution. It should be noted that an output is not always a final element, but may only be the input into the next process in a chain.

# 2. Process approach impact

Using the process approach is a critical part of compliance and certification to the ISO 14001:2015 standard, but it doesn't guarantee environmental or financial benefit in isolation. However, as we can see from the diagram, a process-based Environmental Management System is a useful tool that provides continuity through operations, creating a link between policies, requirements, performances, objectives, and actions, and thereby reducing environmental impact.



The process approach, therefore, becomes the most effective method of managing and mitigating environmental risks and impacts, given that it allows a more analytical and systemic view of process interactions and their effects, rather than focusing on more local problems that arise within the process. The management of the EMS by a system that has been developed with a full understanding of the relationship of the interacting processes and their effects will yield more short-and long-term benefits to the organization seeking to implement and maintain ISO 14001:2015.

# 3. The Plan-Do-Check-Act cycle

The “Plan-Do-Check-Act” cycle (PDCA) is critical to the operation of the Environmental Management System as specified by ISO 14001:2015, in terms of achievement against set objectives and continual improvement. It can be described as follows:

**Plan:** the establishment of objectives, and processes that may deliver them, in harmony with the environmental policy established by the organization

**Do:** the implementation of the planned processes

**Check:** the monitoring and measuring of results versus the environmental policy, including all commitments, objectives, and criteria, and the reporting of them

**Act:** the consequent actions taken to ensure continual improvement

It should be noted that the PDCA cycle is a recognized management system methodology that is used across various business management systems, but its use is both compulsory and highly beneficial within ISO 14001:2015.

Tip: For more information on the PDCA cycle, see the article [PDCA in the ISO 14001 Standard](#).





## 4. Context of the organization

### 4.1 Understanding the organization and its context

This clause is significantly more prescriptive than in the 2004 version of the standard, and requires the organization to determine all internal and external issues that may be relevant to the achievement of the objectives of the EMS itself. This includes all elements which are, and may be capable of, affecting these objectives and outcomes in the future.

Tip: For more information on this topic, see the article [Determining the context of the organization in ISO 14001](#).

### 4.2 Understanding the needs and expectations of interested parties

The standard now requires the organization to assess who the interest parties are in terms of its EMS, what their needs and expectations may be, and consequently, if any of these should become compliance obligations.

### 4.3 Determining the scope of the EMS

The scope and boundaries of the EMS must now be thoroughly examined and defined considering the aforementioned interested parties and their needs, plus resulting compliance obligations. Also requiring consideration are the EMS functions and physical boundaries, and all products, services, and activities,

including the organization's ability to exert control on external factors, with the results of the whole definition included in the EMS and kept critically as "documented information."

Tip: For more information on this topic, please see the article [How to determine the scope of the organization according to ISO 14001:2015](#).

## 4.4 EMS

The standard indicates that an EMS should be established to achieve the outcomes by using interacting processes and using the information specified in (4.1) & (4.2) to deliver continual improvement. The ultimate objective is to improve the organization's environmental performance.



# 5. Leadership



## 5.1 Leadership and commitment

Again, this clause is far more prescriptive than in the 2004 version, with the user reminded that the organization and top management retain responsibility for the performance of all internal and external performance factors at all times. It therefore makes perfect sense that the environmental policy and objectives are aligned with each other, and with the strategic policies and overall direction of the business, including integration with other business systems where applicable. Provision must be made for resources to ensure the EMS can be operated efficiently, and top management must ensure that the people with responsibility within the EMS have the correct support, training, and guidance to complete their tasks effectively. Communication is also critical from a leadership perspective, and communication methods and frequencies must be defined and established for both internal and external interested parties. In summary, it is the responsibility of the leadership of the organization to show an enhanced level of leadership, involvement, and co-operation in the operation of the EMS.

Tip: For more information on this subject, please see the article [How to demonstrate leadership according to ISO 14001:2015](#).

## 5.2 Environmental Policy

Top management have the responsibility to establish an environmental policy, which is appropriate for the organization in terms of the size, scope, activities, and ambitions of the organization, and provides a formal framework for setting objectives. Obviously, the policy should include a commitment to pollution prevention, environmental protection, and all factors contextual to the organization itself. Meeting compliance and regulatory factors is obviously a key element, and a method of capturing and recording

this must be established. Finally, and vitally, the environmental policy must provide a commitment to the continual improvement of the EMS and its results. Critically, the environmental policy must be maintained as documented information, be communicated within the organization, and be available to all interested parties.

Tip: For more information on this topic, please see the article [How to write an ISO 14001 environmental policy](#).

### **5.3 Organizational Roles, responsibilities and authorities**

The standard states that it is the responsibility of top management to ensure that roles, responsibilities, and authorities are delegated and communicated effectively. The responsibility shall also be assigned to ensure that the EMS meets the terms of the 14001:2015 standard itself, and that the EMS performance can be accurately reported to top management.

For more information on this topic, please see the article [Do you need to train your whole workforce on the ISO 14001 standard?](#)



## 6. Planning

### 6.1 Actions to address risks and opportunities

This clause replaced “preventive action” in the 2015 revision of the 14001 standard. The standard states that the organization should establish, implement, and maintain the processes required to address the requirements of the whole of the planning section itself. When planning the EMS, considerations need to be made on the context of the organization (section 4.1) and the needs and expectations of interested parties (section 4.2), as well as the scope of the EMS.

Risk and opportunity must be considered in respect of these elements, as well as legal and regulatory issues, and the organization’s environmental aspects themselves. This outcome needs to ensure that the EMS can meet its intended outcomes and objectives, that any external factors that may affect performance are avoided, and that continual improvement can be achieved.

In terms of emergency situations, the organization is required to determine any situations that may occur and have a resulting environmental impact. Again, it is vital that documented information is retained concerning the risks and opportunities considered and addressed in the planning phase in order to satisfy the terms of the clause.

Tip: For additional information on this topic, click on the article [Risk and opportunity in ISO 14001:2015 – What they are and why they are important.](#)

### 6.1.2 Environmental aspects

ISO 14001:2015 asks organizations to consider, from a life cycle perspective – which includes carriage, disposal, and recycling as well as production – all environmental aspects of its products, services, and activities that are deemed to be within the organization’s control. Changes or planned future changes to services also have to be taken into account, as do any abnormal situations that may arise that are reasonable for the organization to predict – for example, if you are about to launch a new product that needs radically new packaging materials. Again, the organization needs to maintain documented information on this clause and its elements, and communication to the appropriate levels with effective frequency needs to be planned and undertaken. In terms of documented information, if you ensure that all actual and associated impacts, the criteria you use to define them, and your significant environmental impacts are documented, then you will satisfy the terms of this clause.

Tip: For more information on this topic, please see the article [How does product life cycle influence environmental aspects according to ISO 14001:2015?](#)

### 6.1.3 Compliance obligations

This is a relatively straightforward, but obviously vital part of the ISO 14001:2015 standard. The organization must decide what obligations are related to its environmental aspects and how to best access them, decide how they apply to the organization, and take them into consideration when establishing, operating, and delivering continual improvement through the EMS. Documented evidence needs to be recorded for these obligations, also.

Tip: To learn more about this subject, please see the article [Compliance requirements according to ISO 14001:2015 – what has changed?](#)

### 6.1.4 Planning actions

In this clause, the standard states that the organization shall plan to take actions to address its environmental aspects, risks and opportunities, and compliance obligations, all of which we have discussed above. These also need to be implemented into the organization’s EMS and associated business processes. The task of evaluating the effectiveness of these actions also must be considered, with technological, financial, and operational considerations all taken into account.

## 6.2 Environmental objectives and planning to achieve them

### 6.2.1 Environmental objectives

The standard advises that environmental objectives should be established at appropriate levels and intervals, having considered the identified environmental aspects, risk and opportunities, and compliance obligations. The characteristics of the set objectives are important, too; they need to be consistent with the organization's environmental policy, measurable where possible, able to be monitored, communicated effectively, and be such that they can be updated when circumstances require. Once more, it is mandatory that documented information is kept outlining this process and its outputs.

For more help with environmental objectives and how to plan and achieve them, please see [Environmental objectives, targets and programs](#).

### 6.2.2 Planning to achieve environmental objectives

The standard advises on the elements that need to be determined to ensure objectives can be achieved. This can be thought of in terms of what needs to be done, when it needs to be done by, what resources are required to achieve it, who is responsible for the objectives being achieved, how results are to be measured and progress ensured, and consideration on how these objectives can be implemented into existing business systems.

Tip: Click here to see an example of [Environmental objectives template](#).





# 7. Support

## 7.1 Resources

Simply put, the standard advises the organization that resources to achieve stated objectives and show continual improvement must be made available.

Tip: For more details on this topic, please see the article [Understanding resource management in the EMS.](#)

## 7.2 Competence

Employee competence must meet the terms of the ISO 14001:2015 standard by ensuring that the people given responsibility for EMS tasks are capable and confident. Related to this, it stands to reason that the experience, training, and/or education of the individual must be of the required standard, and that any training required is identified and delivered – with measurable actions taken externally or internally to ensure that this level of competence exists. Predictably, this process and its outputs need to be recorded as documented information for the EMS.

## 7.3 Awareness

Awareness is closely related to competence in the standard. Employees must be made aware of the environmental policy and its contents, any current and future impacts that may affect their tasks, what their personal performance means to the EMS and its objectives, including the positives or improved performance, and what the implications of poor performance may be to the EMS.

Tip: To learn more about this subject, see the article [ISO 14001 Competence, training & awareness: Why are they important for your EMS?](#)



## 7.4 Communication

### 7.4.1 General

Processes for internal and external communication need to be established and recorded as documented information within the EMS. The key elements that need to be decided, actioned, and recorded are what needs to be communicated, how it should be done, who needs to receive the communication, and at what intervals it should be done. It should be noted here that any communication outputs should be consistent with related information and content generated by the EMS for the sake of consistency.

### 7.4.2 Internal communication

The standard advises the organization that information should be communicated at various levels and with various frequencies as deemed suitable, and to ensure that the nature and frequency of communication allows continual improvement to result from the communication process itself.

### 7.4.3 External communication

Once again, the organization is advised by the standard to ensure that communication relevant to the EMS takes place as per the established process, with the goal of ensuring compliance obligations and objectives are met.

For more detailed information on this subject, please refer to the article [How to perform communication related to the EMS](#).

## 7.5 Documented information

### 7.5.1 General

“Documented information,” which you will have seen mentioned several times during this guide, marks another change implemented in the 2015 standard. The change is designed to allow each organization to have the ability to shape documented information to their own requirements in general, with the exception of the mandatory components mentioned specifically in the standard and, therefore, this guide. The ISO 14001:2015 standard advises us that the EMS should include all documented information that it declares mandatory, and also anything viewed as critical to the EMS and its operation. It should also be noted that the amount of documented information that an organization requires will differ according to the size, operating sector, and complexity of compliance obligations faced by the business.

### 7.5.2 Creating and updating

The standard advises that documentation created by the EMS should be available and fit for purpose where and when needed, reasonably protected against damage or loss of integrity and identity, and the

processes of distribution, retention, access, retrieval, preservation and storage, control and disposition are adequately provided for. It should be noted that documented information from external sources should be similarly controlled and handled, and that viewing and editing access levels should be carefully considered and controlled.

For more information on this topic, please see the article [A new approach to documented information in ISO 14001:2015](#).

### **7.5.3 Control of documented information**

The standard advises that documentation created by the EMS should be available and fit for purpose where and when needed, reasonably protected against damage or loss of integrity and identity, and the processes of distribution, retention, access, retrieval, preservation and storage, control and disposition are adequately provided for. It should be noted that documented information from external sources should be similarly controlled and handled, and that viewing and editing access levels should be carefully considered and controlled.

To learn more about this topic, please see the article [List of mandatory documents required by ISO 14001:2015](#).



# 8. Operation

## 8.1 Operational control and planning

While the standard acknowledges that operational control will greatly depend on the size, nature, compliance obligations, and environmental aspects of an organization, the scope is given to the individual organization to plan and ensure the desired results are achieved. The methods suggested by the standard are that processes be designed in such a way that consistency is guaranteed and error eliminated, technology is used to improve control, and it is ensured that personnel are trained and competent. Processes should be performed in an agreed and prescribed manner; those processes should be measurable, and the documented information should match the requirements to ensure operational control.

Outsourced processes must also be considered and controlled. Appropriate measures must be made to define and control the competency of outsourced service suppliers, including consideration of their resources, knowledge, competence, and ability to meet objectives. Consideration must be made for the degree to which the organization and the outsourced provider share process control, and also how control can be made through established elements such as the existing procurement process. As ever, opportunities for improvement must always be considered and identified.

The standard also recognizes that the degree of control the organization has over an outsourced product or service can vary from absolute, if taking place onsite, to very little, if the activity takes place remotely. However, it is suggested that there are factors that nonetheless should be considered. As expected, compliance obligations should be considered and controlled, all direct and associated environmental

impacts should be evaluated and controlled, and risks and opportunities associated with the provision of the service itself.

Tip: For more information on this topic, please see the article [Understanding the relationship between environmental aspects and operational procedures](#).

## 8.2 Emergency preparedness and control

Emergency preparedness and control is a key element of mitigation of environmental risk. The standard informs us that it is the responsibility of the organization to be prepared, and a number of elements should be considered and planned for. Actions to mitigate incidents must be developed, as well as internal and external communication methods and appropriate methods for emergency response. Consideration of varying types of environmental incidents needs to be considered, as does root cause analysis and corrective action procedures to respond to incidents after they occur. Regular emergency response testing and relevant training needs to be considered and undertaken, and assembly routes and evacuation procedures defined and communicated. Lists of key personnel and emergency agencies (think clean up agencies, local emergency services, local environmental office or agency) should be established and made available, and it's often good practice to form partnerships with similar neighboring organizations with whom you can share mutual services and provide help in the event of an environmental incident.

For more detailed information, please see the article [How to satisfy emergency response requirements in ISO 14001:2015](#).





## 9. Performance evaluation

### 9.1 Monitoring, measuring, analysis and evaluation

#### 9.1.1 General

The organization not only has to measure environmental progress, but should consider its significant aspects, compliance obligations, and operational controls when tackling this clause. The methods established should have considerations to ensure that the monitoring and measuring periods are aligned with the needs of the EMS for data and results, the results are accurate, consistent, and can be reproduced, and the results are consistent and can be used to identify trends. It should also be noted that the results should be reported to the personnel with authority and responsibility to initiate action on the basis of the outputs themselves.

Tip: For more detail on this topic, please see the article [Environmental performance evaluation](#).

#### 9.1.2 Evaluation of compliance

The standard recognizes that evaluation requirements will vary from organization to organization based on factors such as size, compliance obligations, sector worked in, past history and performance, and so on, but suggests that regular evaluation is always required. If the result of a compliance evaluation reveals that a legal requirement is unfulfilled, the organization needs to assess what action is appropriate, possibly up to contacting a regulatory body and agreeing on a course of action for repair. This agreement

will now see this obligation become a legal requirement. Where a non-compliance is identified by the EMS and corrected, it does not automatically become a non-conformity.

Tip: For more practical assistance with compliance evaluation, see this template for [Compliance Evaluation Record](#).

## 9.2 Internal Audit

### 9.2.1 General

Internal audits and auditors should be independent and have no conflict of interest over the audit subject, the standard reminds us, and it should be noted that non-conformities should be subject to corrective action. When considering the results of previous audits, the results of previous internal and external audits and any previous non-conformities and resulting actions to repair them should be taken into account.

For more related information, see details on our free online [ISO 14001:2015 Internal Auditor Course](#).

### 9.2.2 Internal audit program

The 14001:2015 standard refers us to ISO 19011:2011 for the internal audit program, but when you are establishing your program there are several rules you can subscribe to in order to ensure your program is effective. Base your internal audit frequency on what is reasonable for your organization in terms of size, sector you operate in, compliance obligations, and risk to the environment from your activities. Decide what is reasonable for you, whether that is bi-annual, quarterly, or whatever you deem suitable. Keep in mind that this schedule can be changed, preferably through management review and leadership guidance in the event of changes that necessitate extra internal audit activity.

Tip: Please click [ISO 14001:2015 Internal Audit Toolkit](#) to have more details about internal audit process.

## 9.3 Management Review

It should be noted that, contrary to popular belief, the management review need not be done all at once; it can be a series of high-level or board meetings with topics tackled individually, although it should be of a strategic and top management level. Complaints from interested parties should be reviewed by top management with resultant improvement opportunities identified. It should be remembered that the management review generally is the one function that must be carried out accurately and diligently to ensure that the function of the EMS and all resulting elements can follow suit. It goes without saying that all details and data from the management review must be documented and recorded to ensure the EMS can follow the specific requirements and general strategic direction for the organization detailed there.

Tip: For more details on this topic, please see the article [The importance of the management review in the ISO 14001:2015 process](#).





# 10. Improvement

## 10.1 General

Outputs from management reviews, internal audits, and compliance and performance evaluation should all be used to form the basis for improvement actions. Improvement examples could include corrective action, reorganization, innovation, and continual improvement programs.

For more detail on this subject, please take a look at the article [How to achieve continual improvement of your EMS according to ISO 14001:2015](#).

## 10.2 Nonconformity and corrective action

Prevention of incidents is a key facet of the EMS, and this is specifically addressed in the definition of organizational context (4.1) and assessing risks and opportunities (6.1).

Tip: Click here to see a template for [Procedure for the management of non conformities and corrective actions](#) to help you with this process.

# Conclusion

ISO 14001:2015 provides organizations with guidance to mitigate environmental risk and reduce impacts with the ultimate goal being environmental protection, but delivering all of the clauses of the standard and truly understanding them can benefit your organization, as well as the greater environment, in many ways. Accreditation and compliance can bring reputational, motivational, and financial benefits to your organization through improved efficiency and reductions in waste, along with improvements in your supply chain. All of these elements are closely related to your organization's ability to deliver satisfaction to your customer, and fulfill the expectations and wishes of your stakeholders, while protecting the environment for future generations. Bearing all this in mind, can your organization afford not to have ISO 14001:2015?

Why not use our free [Gap Analysis Tool](#) to gauge where your organization and EMS stand against formal requirements?

# Sample of documentation templates

You can also download a free preview of [ISO 14001 Documentation Toolkit](#) or [ISO 9001 & ISO 14001 Integrated Documentation Toolkit](#). This will allow you to see sample of policies and procedures used in the integrated implementation of ISO 14001:2015.

# References

14001 Academy: <http://advisera.com/14001academy/>

International Organization for Standardization: <http://www.iso.org/iso/home.html>



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