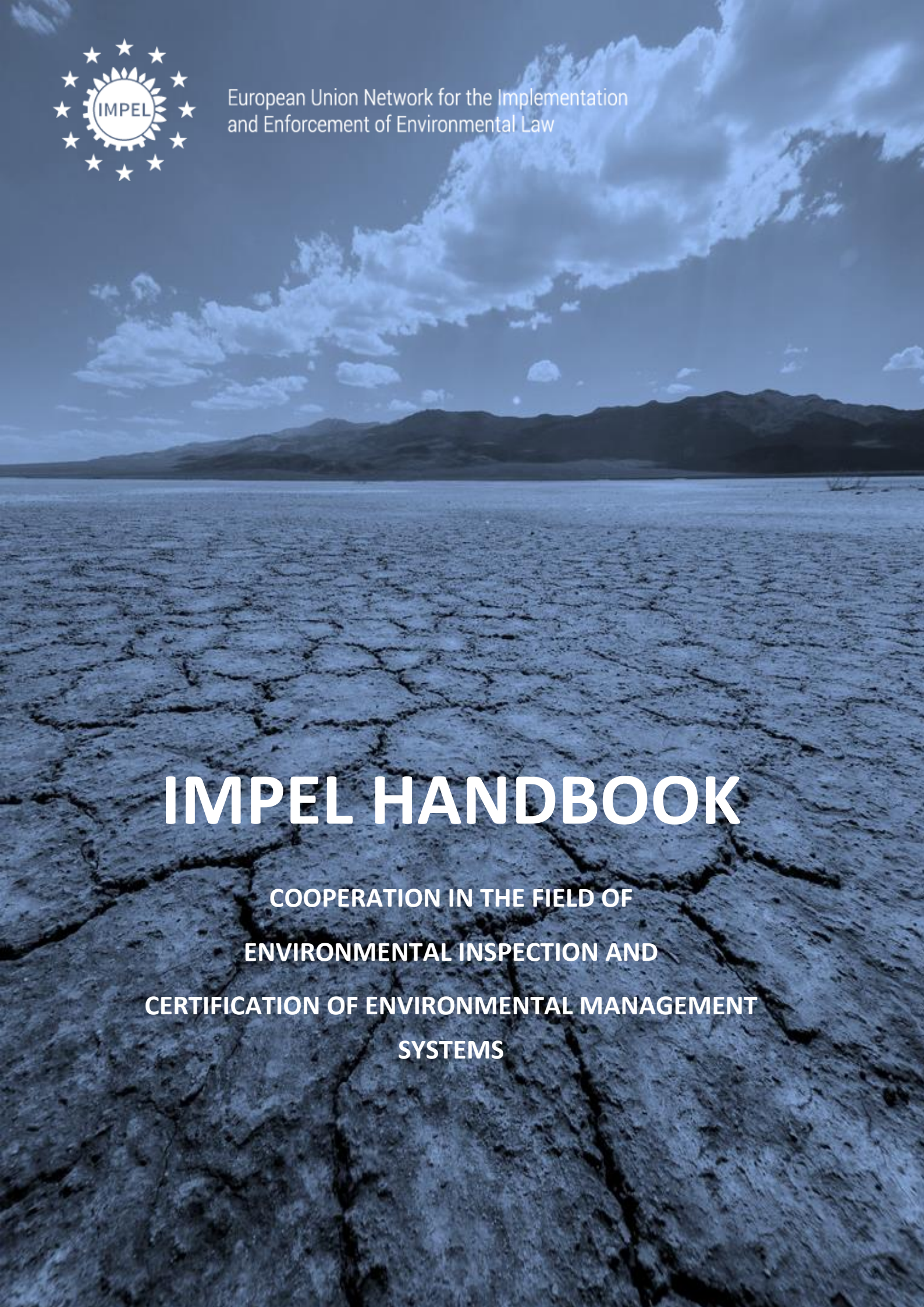

European Union Network for the Implementation and Enforcement of Environmental Law

IMPEL HANDBOOK

COOPERATION IN THE FIELD OF ENVIRONMENTAL INSPECTION AND CERTIFICATION OF ENVIRONMENTAL MANAGEMENT SYSTEMS

This handbook has been produced as the end result of project 5 under the IMPEL Climate Emergency Programme. The handbook has been produced and edited by a special interdisciplinary team consisting of the following members:

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European Union Network for the Implementation
and Enforcement of Environmental Law

IMPEL HANDBOOK

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CONTENT

ABSTRACT

The climate emergency as well as an increasing awareness of the impact of plastic, biodiversity decline and now the impacts of a global pandemic & potential green recovery are having a profound impact on policy, how we regulate and on those that we regulate. The pressures to contribute to the reduction of greenhouse gases, the reduction of carbon or supporting green recovery are increasing. We are confronted with huge challenges. The effect and impact of inspections can be increased by the use of private assurance. It's not the intention to replace inspection by private assurance but to use the results of the private assurance process. A side effect is that this approach will stimulate organisations to improve the private assurance processes. It becomes more and more clear that traditional public regulation can only provide part of the answer to the challenges as it has several limitations like restricted capacity which forbids them to be present 24/7 and 365 day per year, knowledge gaps and limited access to relevant information.

At the same time, there is a substantial capacity within private companies and other regulated organisations to self-regulate. Many companies have discovered the use of environmental Management Systems (EMSs) as a tool to achieve their environmental goals. In the EU there are about 82,000 organisations with an ISO 14001 certificate and about 3,500 with an EMAS registration. There is an extensive infrastructure for accreditation and certification of environmental management systems following widely used standards like ISO 14001 and EMAS. Most ISO 14001 certificates are granted after certification by an accredited certifying body. Accreditation is done by accreditation bodies that supervise certification bodies via expert, impartial and independent supervision.

The value of EMSs is also recognized by the EU in several directives and regulations, of which the Industrial Emission Directive is the most explicit example. To provide support in audits for the certification bodies the European Co-operation for Accreditation have issued the EA-7/04. This document clarifies how regulatory compliance should be assured within an ISO 14001 certified EMS and must be followed by every certification body accredited in Europe for ISO 14001.

So, on one side there are vast challenges of public supervision and on the other there is the potential for self-regulation. From this, the notion to look for more synergy between public regulation and private accredited certification of EMSs presents itself as a logical opportunity. Although this notion seems very obvious, there are a number of pitfalls in relying too heavily on self-regulation.

One of the important pitfalls is the risk that organisations decouple formal policies from actual practices. This behaviour is also sometimes indicated as greenwashing or window dressing. More specifically, decoupling can occur between the following levels:

1. Goal - system decoupling
   This means that the company declares to strive for environmental protection, but this goal is not operationalized adequately in measures like procedures, protocols, plans, instruction (we call this the 'system').
2. System – practice decoupling
   This means that the system is not carried out in practice.
3. Practice - outcome decoupling
   This means that the efforts of the organisation in practice do not result in the desired outcome (i.e. environmental protection).

A second pitfall is that public inspectors are sometimes focused on compliance of specific requirements in-stead of the goal this rule aims to serve. Additionally, a related and deeper issue is that inspectors and representatives from companies really think differently, whereas the inspectors tend to go by the book of rules and companies tend to look at risks rather than the letter of the law. The existence of these pitfalls imply that the public regulator cannot take a passive stand and should actively engage in understanding and engaging in processes regarding self-regulation in general and certification in particular.

The ambition of this handbook is to bring together these two different world together in a synergetic collaboration with wins for all sides. To be able to achieve this regulators/Inspectors should understand the difference between output/outcome and assurance and be able to assess quality of assurance. Certification bodies in their turn should address inconsistencies between formal policy and actual practices and outcome and be equipped with more teeth for effective intervention.

The good thing for inspectors about private assurance backed by accredited certification is that it may encourage companies to comply with environmental law spontaneously. The difficulty for environmental inspectors is that the quality of private assurance differs per company. This means that if inspectors want to make use of the private assurance of companies, they will have to understand how it works and how its effectiveness could be tested. This requires the inspector to assess the private assurance on a systems level rather than a case-by-case level. The inspector should be able to judge to what extent the private assurance backed by certification, is effective by looking at the consistency between goals, management system, practice (real conduct) and outcome.

As the world becomes more complex and just complying with the rules is increasingly less effective given the challenges we are facing, it is fair to say that we need both public regulation and private assurance to be able to make a difference. In other words, environmental protection and goals regarding climate change can only be achieved if both public regulation and private assurance are seen as a means to these higher goals. The gap between these two means can be bridged by focusing on mainly one question: how effectively does this regulated company assure and achieve a desired environmental outcome? A joint effort of both private certification and modern public

supervision is able to provide the answer. This handbook gives both the theoretical backgrounds as the practical means and tools including a self-assessment questionnaire and a process flow chart to help inspectors, certification bodies and regulated companies to implement the proposed approach.

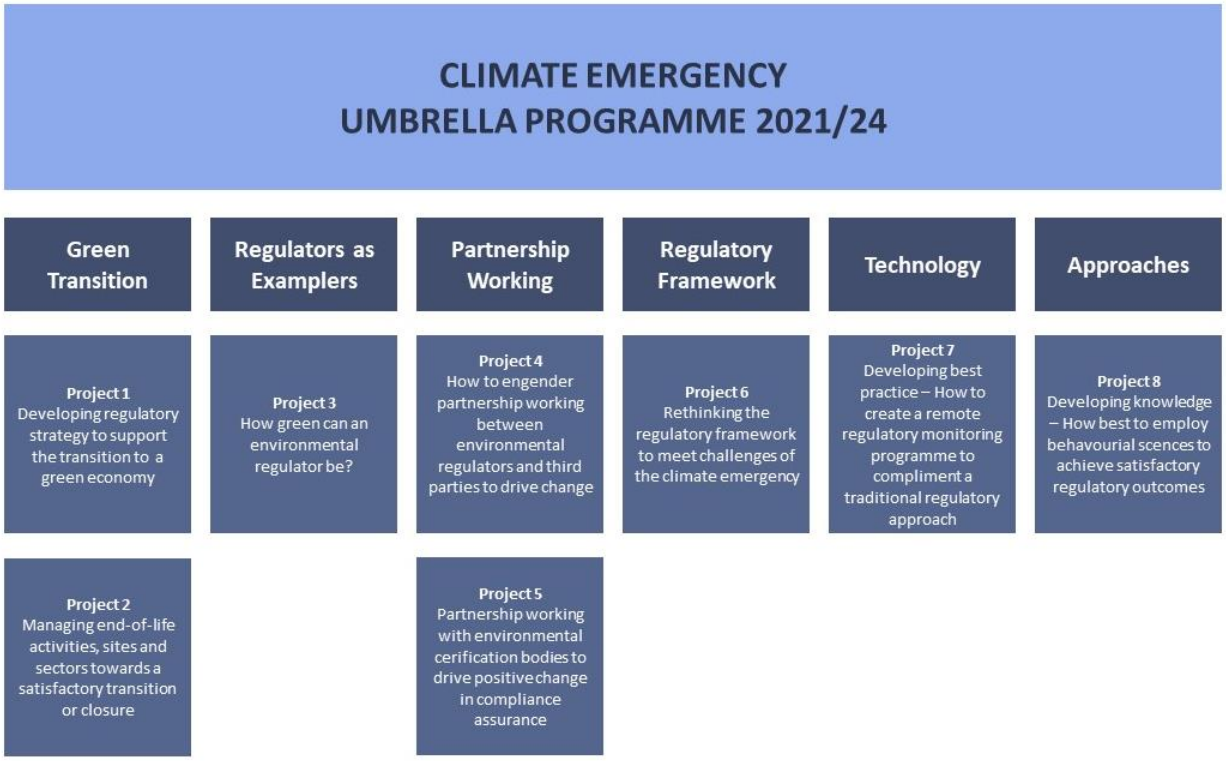
Chapter 1 INTRODUCTION

1.1 IMPEL and the Climate Emergency Programme

The declaration of a climate emergency (as well as an increasing awareness of the impact of plastic, biodiversity decline and now the impacts of a global pandemic & potential green recovery) are having a profound impact on policy, how we regulate and on those that we regulate. That is the reason why IMPEL started its Climate Emergency Program in 2021. The pressures to contribute to the reduction of greenhouse gases, the reduction of carbon or supporting green recovery are increasing yet few regulators have the correct tools to begin to tackle with these issues. This programme hopes to tackle these issues by designing tools and approaches that regulators can use to meet these emerging challenges. Research, development and design of new tools and approaches for regulators to use to meet policy goals driven by the climate emergency (& green recovery).

The programme is organised in six interrelated themes (Figure 1-1).

Figure 1-1 The IMPEL Climate Emergency Programme



Project 5: Partnership with certification bodies

Project 5 builds on a series of compliance management system projects that ran from 2011 to 2015. This project pulls together the lessons learnt from those projects[1] and subsequent collaboration and

[1] See https://www.impel.eu/projects/compliance-assurance-through-company-compliance-management-systems/

aims to deliver a practitioner's handbook. These IMPEL projects have recognised the importance of collaborating with non-public actors like accreditation bodies, certification bodies and regulated companies. In our view, it is simply undoable to counter the challenges we are facing regarding environmental protection in general and climate change in particular if we do not join effort.[2] This notion resonates with the idea on which the umbrella program is based upon. Working together with these parties, the project has generated several tools and policy papers about how this collaboration could look like.

1.2 Purpose of handbook

The purpose of this handbook is to provide insights, strategies and tools to encourage collaboration between public environmental inspectorates and inspectors and parties involved in accredited certification of environmental management systems in order to reach a higher degree of environmental protection and countering climate change. Following this purpose, the handbook provides:

- Information about environmental regulation and inspections related to environmental management systems
- Information about private accredited certification of environmental management systems
- An explanation of how public environmental inspection can benefit from private accredited certification of environmental management systems
- Practical strategies and tools to help the collaboration be implemented in day to day work
- A glossary to explain the most commonly used terms

1.3 Key audience

This handbook is primarily meant for those directly involved in the management and execution of public environmental inspections, certification bodies, auditors and accreditation bodies. Also, the handbook could help companies, legislators and officers involved in environmental permits to design strategies using the insights and tools provided.

[2] Examples of joining efforts to create added value for the environment beyond traditional regulation are the sustainable growth agreements by Scottish Environment Protection Agency (https://www.sepa.org.uk/one-planet-prosperity/sustainable-growth-agreements/) and the SeeBeyond project of the Environment Agency (https://www.gov.uk/government/news/project-launched-to-tackle-greenwashing-in-food-and-drink-sectors)

Chapter 2 PUBLIC ENVIRONMENTAL INSPECTIONS

In this chapter we focus on public environmental inspections. First, we define the goals of public environmental inspections. Second, we shed light on the risk-based approaches developed according to the better regulation principles and European risk assessment methods. Finally, we go deeper into showing how EU legislation anticipates on environmental management systems of regulated companies. We conclude with strengths and weaknesses of public inspections.

2.1 Goals

The traditional (and formal) goal of public inspections is to check whether a case or activity meets the legal requirements and intervene of this is not the case to enforce compliance. However, this limited perspective of public inspections comes with serious limitations. If we should have learned anything about regulation in recent years, it is that simply setting rules and then making companies comply is not sufficient to meet the challenges we are facing. The world is getting too complex to cling to that idea. If we want to counter the challenges with regard to the environment, climate change, energy transition and circularity we should discover new ways to make public and private parties interact in much more effective ways than the traditional command-and-control approach.

Environmental inspections should shift its focus from going by the book towards stimulating companies and civilians to take their responsibility and go beyond rules and regulations. The goal of public supervision and inspections should not only be to check compliance with the regulations. It should be stretched to stimulating companies and civilians to contribute to the best of their abilities to realizing environmental goals beyond the levels already set in legal requirements. Obviously, this requires a much broader perspective from the inspectors and its management to be able to engage in public-private interactions and collaborations aiming at the maximum result for the environment. Also, this new role demands developing and pioneering new policies and tools for which additional competencies are required. Facing complexity requires commitment, leadership and courage to go forward although there is no guarantee of being in control while continuously learning from the findings when new approaches are implemented in practice and assumptions appear to be invalid.

There is a huge potential for success regarding public inspector's achievements if focus is being shifted from regulatory requirements to environmental benefit using the company's creativity and technical knowledge. Going beyond environmental compliance is not as much a question of why and how, as it is a question on when and what to prioritise. Environmental inspectors know what is important to priority and companies could use the input to come up with a solution to achieve the results. Noise for example, can be regulated regarding the source of emission. In case a ventilator is having a higher noise level than accepted perhaps 0,3 dB – the lowering of the noise could cost 0,12 M€. At the same price, the company could reduce the noise as experienced by the closest neighbour by establishing a noise wall reducing the noise level by 10 db.

2.2 Risk based approach to environmental protection

Within environmental enforcement, the European Commission is playing a pioneering role in evidence-based enforcement. In recent decades, up to 80% of national environmental legislation has been based on European legislation and various European documents provide guidance on the development of a risk-based enforcement strategy.

Throughout the environmental acquis there is a high number of enforcement obligations and competent authorities for control at Member State level. It is therefore an important challenge to correctly identify the main enforceable obligations to protect the environment per Member State, while at the same time being able to justify this through an objective process.

There are invariably two aspects associated with a risk assessment. The first concerns the likely occurrence of violations and involves looking at the relevant categories of legal subjects and evidence of past non-compliance. The second involves looking at immediate and long-term effects on the environment and human health, as well as other factors, such as unfair competition. The effects are related to the nature, extent and persistence of the infringements. The greater the probability and the greater the effects, the more cause for concern – and need for regulatory intervention.

Focusing risk assessment on probability and effects, enables ranking of environmental risks and therefore distinguishes the most important. The assessment of the risks can be done at both an operational and a strategic level, as a result of which the level of the risk analysis varies greatly between operational and strategic. In several European countries rules and regulations such as the EVOA, REACH, post-Seveso and regulations regarding animal by-products, risk appraisal is a key element. In the Industrial Emissions Directive (IED), the link between risk appraisal and environmental management systems has been made explicit.

Risk assessment methodologies and tools in EU (IMPEL IRAM)

In 2011, IMPEL developed the IRAM (Integrated Risk Assessment Method) methodology for the systematic risk scoring of IED installations. This is a risk analysis tool in which Member States can objectively prioritize their inspections (also outside the original scope). The exponents of this method were on the one hand a 'guidance' for the use of this method as well as a web based IRAM tool that enforcement authorities can consult freely on the IMPEL website (IMPEL, 2012).

In the IRAM tool, a risk is considered as the product of the severity of the consequence (effect) and the probability that this consequence will happen (probability). The effect (impact criteria) of the consequence (environmental impact) and the probability (operator performance criteria) of its occurrence (the level of compliance with laws, regulations, permits, attitude, age of the installation) is assessed. , and so forth). A distinction is therefore made between impact criteria and operator performance criteria.

The following impact criteria are used: impact of the installation on its environment (1), emissions to air (2), emissions to soil (3), quality of reported data (4), emissions to water (5), waste output (6),

waste input (7), local environment quality (8), accident risk (9) and noise pollution (10). Weight is given to each of the criteria, as not every criteria is of 'equal' importance.

The following criteria are used for operator performance criteria: compliance behaviour (1), handling of identified environmental problems (2) and application of environmental care principles (3). Here too, a weighting of the criteria is applied.

The IED installations are scored using a set of rules, whereby their weighted impact is decisive, if corrected with their weighted performance. Implementation of EMAS (or another environmental management system?) reflects in the weighted performance score, lowering the weighted impact score after correction. The higher the total end score, the higher the inspection frequency.

2.3 Environmental Management Systems (EMS) in legislation and public policy

EU legislation including IED[3]

Industrial production processes account for a considerable share of the overall pollution in Europe due to their emissions of air pollutants, discharges of wastewater and the generation of waste.

Directive 2010/75/EU of the European Parliament and the Council on industrial emissions (the Industrial Emissions Directive or IED) is the main EU instrument regulating pollutant emissions from industrial installations. The IED was adopted on 24 November 2010. It is based on a Commission proposal recasting 7 previously existing directives (including in particular the IPPC Directive) following an extensive review of the policy (see here). The IED entered into force on 6 January 2011 and had to be transposed by Member States by 7 January 2013.

The IED aims to achieve a high level of protection of human health and the environment taken as a whole by reducing harmful industrial emissions across the EU, in particular through better application of Best Available Techniques (BAT). Around 50,000 installations undertaking the industrial activities listed in Annex I of the IED are required to operate in accordance with a permit (granted by the authorities in the Member States). This permit should contain conditions set in accordance with the principles and provisions of the IED.

The IED is based on several pillars, in particular (1) an integrated approach, (2) use of best available techniques, (3) flexibility, (4) inspections and (5) public participation.

1. The **integrated approach** means that the permits must take into account the whole environmental performance of the plant, covering e.g. emissions to air, water and land, generation of waste, use of raw materials, energy efficiency, noise, prevention of accidents, and restoration of the site upon closure.

[3] This information is partly based on https://ec.europa.eu/environment/industry/stationary/ied/legislation.htm, consulted on September 10, 2021.

2. The permit conditions including emission limit values must be based on the **Best Available Techniques (BAT)**. In order to define BAT and the BAT-associated environmental performance at EU level, the Commission organises an exchange of information with experts from Member States, industry and environmental organisations. This work is co-ordinated by the **European IPPC Bureau** at the EU Joint Research Centre in Seville (Spain). This process results in **BAT Reference Documents** (BREFs); the BAT conclusions contained are adopted by the Commission as Implementing Decisions. The IED requires that these BAT conclusions are the reference for setting permit conditions.
3. For certain activities, i.e. large combustion plants, waste incineration and co-incineration plants, solvent using activities and titanium dioxide production, the IED also sets EU wide emission limit values for selected pollutants.
4. The IED allows competent authorities some **flexibility** to set less strict emission limit values. This is possible only in specific cases where an assessment shows that achieving the emission levels associated with BAT described in the BAT conclusions would lead to disproportionately higher costs compared to the environmental benefits due to the geographical location or the local environmental conditions or the technical characteristics of the installation. The competent authority shall always document its justification for granting such derogations.
5. Furthermore, Chapter III of the IED on large combustion plants includes certain flexibility instruments (Transitional National Plan, limited lifetime derogation, etc.).
6. The IED contains mandatory requirements on **environmental inspections**. Member States shall set up a system of environmental inspections and draw up inspection plans accordingly. The IED requires a site visit to take place at least every 1 to 3 years, using risk-based criteria.
7. The IED ensures that the **public has a right to participate** in the decision-making process, and to be informed of its consequences, by having access to permit applications, permits and the results of the monitoring of releases.

Furthermore, the IED stipulates that the period between two site visits shall be based on a systematic appraisal of the environmental risks of the installations concerned. The visits shall not exceed 1 year for installations posing the highest risks and 3 years for installations posing the lowest risks. The systematic appraisal of the environmental risks shall be based on at least the following criteria:

- Potential and actual impact
- Record of compliance with permit conditions
- the participation of the operator in the Union eco-management and audit scheme (EMAS), pursuant to Regulation (EC) No 1221/2009.

Although the IED recognizes the possibility that the Commission may adopt guidance on the criteria for the appraisal of environmental risks, such guidance has not yet been provided.

Interestingly, the IED recognizes that an environmental management system (EMS) is one of the three criteria to considered for the appraisal of environmental risks. This implies that an EMS is a tool to help reduce or mitigate environmental risks. Although the formal text of the IED only mentions EMAS as a standard for EMSs, in practice

BAT and BREFs

In the BAT, the EU specifies environmental management systems by providing the following features for an EMS:

(i) commitment, leadership, and accountability of the management, including senior management, for the implementation of an effective EMS

(ii) an analysis that includes the determination of the organisation's context, the identification of the needs and expectations of interested parties, the identification of characteristics of the installation that are associated with possible risks for the environment (or human health) as well as of the applicable legal requirements relating to the environment;

(iii) development of an environmental policy that includes the continuous improvement of the environmental performance of the installation;

(iv) establishing objectives and performance indicators in relation to significant environmental aspects, including safeguarding compliance with applicable legal requirements;

(v) planning and implementing the necessary procedures and actions (including corrective and preventive actions where needed), to achieve the environmental objectives and avoid environmental risks;

(vi) determination of structures, roles and responsibilities in relation to environmental aspects and objectives and provision of the financial and human resources needed;

(vii) ensuring the necessary competence and awareness of staff whose work may affect the environmental performance of the installation (e.g. by providing information and training);

(viii) internal and external communication;

(ix) fostering employee involvement in good environmental management practices;

(x) Establishing and maintaining a management manual and written procedures to control activities with significant environmental impact as well as relevant records;

(xi) effective operational planning and process control;

(xii) implementation of appropriate maintenance programs;

(xiii) emergency preparedness and response protocols, including the prevention and/or mitigation of the adverse (environmental) impacts of emergency situations;

(xiv) when (re)designing a (new) installation or a part thereof, consideration of its environmental impacts throughout its life, which includes construction, maintenance, operation and decommissioning;

(xv) implementation of a monitoring and measurement program, if necessary, information can be found in the Reference Report on Monitoring of Emissions to Air and Water from IED Installations;

(xvi) application of sectoral benchmarking on a regular basis;

(xvii) periodic independent (as far as practicable) internal auditing and periodic independent external auditing in order to assess the environmental performance and to determine whether or not the EMS conforms to planned arrangements and has been properly implemented and maintained;

(xviii) evaluation of causes of nonconformities, implementation of corrective actions in response to nonconformities, review of the effectiveness of corrective actions, and determination of whether similar nonconformities exist or could potentially occur;

(xix) periodic review, by senior management, of the EMS and its continuing suitability, adequacy and effectiveness;

(xx) following and taking into account the development of cleaner techniques.

Specifically for the food, drink and milk sector, BAT is to also incorporate the following features in the EMS:

(i) noise management plan (see BAT 13);

(ii) odour management plan (see BAT 15);

(iii) inventory of water, energy and raw materials consumption as well as of waste water and waste gas streams (see BAT 2);

(iv) energy efficiency plan (see BAT 6a).

Regulation (EC) No 1221/2009 of the European Parliament and of the Council (3) establishes the Union eco- management and audit scheme (EMAS), which is an example of an EMS consistent with this BAT. The level of detail and the degree of formalization of the EMS will generally be related to the nature, scale and complexity of the installation, and the range of environmental impacts it may have.

BAT 2. In order to increase resource efficiency and to reduce emissions, BAT is to establish, maintain and regularly review (including when a significant change occurs) an inventory of water, energy and raw materials consumption as well as of waste water and waste gas streams, as part of the environmental management system (see BAT 1), that incorporates all of the following features:

I. Information about the food, drink and milk production processes, including: (a) simplified process flow sheets that show the origin of the emissions; (b) descriptions of process-integrated techniques and waste water/waste gas treatment techniques to prevent or reduce emissions, including their performance.

II. Information about water consumption and usage (e.g. flow diagrams and water mass balances), and identification of actions to reduce water consumption and wastewater volume (see BAT 7).

III. Information about the quantity and characteristics of the waste water streams, such as: (a) average values and variability of flow, pH and temperature; (b) average concentration and load values of relevant pollutants/parameters (e.g. TOC or COD, nitrogen species, phosphorus, chloride, conductivity) and their variability.

IV. Information about the characteristics of the waste gas streams, such as: (a) average values and variability of flow and temperature; (b) average concentration and load values of relevant pollutants/parameters (e.g. dust, TVOC, CO, NOX, SOX) and their variability; (c) presence of other substances that may affect the waste gas treatment system or plant safety (e.g. oxygen, water vapour, dust).

V. Information about energy consumption and usage, the quantity of raw materials used, as well as the quantity and characteristics of residues generated, and identification of actions for continuous improvement of resource efficiency (see for example BAT 6 and BAT 10).

VI. Identification and implementation of an appropriate monitoring strategy with the aim of increasing resource efficiency, taking into account energy, water and raw materials consumption. Monitoring can include direct measurements, calculations or recording with an appropriate frequency. The monitoring is broken down at the most appropriate level (e.g. at process or plant/installation level).

The level of detail of the inventory will generally be related to the nature, scale and complexity of the installation, and the range of environmental impacts it may have.

EMS BAT Guidance (BAT 1) - Permit requirements for EMS

The features for EMS's can be directly used in permits for individual plants. A typical example for this is Denmark, that has simply adopted the features as permit requirements in the environmental permit of chemical companies.

It should be noted that the coverage of the IED is not needed to put requirements for EMS's in the environmental permit. In the Netherlands for example, it has been common practice to put the requirement of an ISO 14001 certificate in the license of companies working with hazardous chemicals.

2.4 Strengths and weaknesses

Public environmental supervision has a number of strengths and weaknesses. In the following table these have been explained.

Strengths of public inspections

- It is independent from commercial and political interests
- It has formal authority and coercive power to force compliance
- It is in a position to bring together several themes together and create overview
- It has broad environmental knowledge
- It can clearly see whether a policy works

Weaknesses of public inspections

- Its capacity and specific knowledge are limited
- It has little information about the causes of specific risks
- It has limited access to data and measuring results
- It suffers from a general information asymmetry vis-à-vis the regulated organisations
- Its legitimacy is limited to formal regulations while these regulations may not be effective

CHAPTER 3 CERTIFICATION OF ENVIRONMENTAL MANAGEMENT SYSTEMS

In this chapter we elaborate on private certification of environmental management systems. We start by explaining the two most commonly used standards. These are ISO 14001 and - to a lesser extent - EMAS. After this, we dive deeper in several relevant aspects of accredited certification like the process approach of ISO 14001, the content of ISO 14001, the role of accreditation and the relationship with public inspections. Finally, we explain how regulatory compliance is covered in the ISO 14001 approach for European countries and strengths and weaknesses of accredited certification.

3.1 Introduction

The internationally most widely used standard for environmental management systems is the ISO 14001 standard. This has also been used as the basis for the EMAS regulation (later in this chapter the additional requirements that EMAS sets will be discussed). The essentials of an EMS are therefore explained based on the ISO 14001 standard.

ISO 14001 and EMAS are standards covering the requirements of an environmental management system (EMS). An EMS can be implemented on its own or be integrated with other management requirements), These standards for an EMS have been written to be applicable to all types and sizes of organisations and to accommodate diverse geographical, cultural and social conditions. The success of a system depends on commitment from all levels and functions, especially from top management. The overall aim of an EMS is to support environmental protection and prevention of pollution in balance with socio-economic needs.

An EMS enables an organisation to enhance its environmental performance and to manage its environmental responsibilities in a systematic manner. This contributes to the environmental pillar of sustainability.

Consistent with the organisation’s policy, the intended outcomes of an environmental management system include:

- enhancement of environmental performance
- fulfilment of compliance obligations
- achievement of environmental objectives.

The Standard is applicable to the environmental aspects of an organisation’s activities, products and services that it can either control or influence while considering a life cycle perspective.

3.2 Most widely used standards for EMS: EMAS and ISO14001

EMAS (Eco audit and Management Scheme) was introduced in an EU regulation in 1995. Organisations can obtain an EMAS registration when the following requirements are met:

- an environmental management system has been introduced.
- an environmental statement has been drawn up (an environmental report).
- the environmental management system and the environmental statement have been verified by an accredited verifier.

EU Member States are obliged to designate one or more competent bodies that are responsible for issuing and renewing the EMAS registrations in the Member State. Before a competent body is registered with the competent authority under which the organisation falls, it is checked whether there are no objections to the registration. Objections could arise when there are violations of laws and regulations. This check is not available with ISO 14001.

At the time the first version of the EMAS regulation was drawn up, the ISO 14001 standard was still under development. The ISO 14001 standard was subsequently used in the revisions of the EMAS regulation. The text of the standard is included in the EMAS regulation and serves as the basis for the environmental management system. The regulation provides an explanation and supplement to the ISO 14001 standard on a limited number of points. The main difference with ISO 14001 is the preparation of the so-called EMAS environmental statement and the verification of the content of this environmental report. Another important difference is that the EMAS verifier has to make a statement in the declaration regarding compliance with the laws and regulations.

In the EU there are about 82,000 organisations with an ISO 14001 certificate and about 3,500 with an EMAS registration. Organisations with an EMAS registration can mainly be found in Germany, Spain, Italy and Austria. Most registrations (approximately 90%) can be found in these four countries.

ISO 14001:2015 and EMAS have many similarities, such as the focus on monitoring environmental indicators to assess environmental performance and the use of auditing to monitor environmental processes for conformance and improvement. Most importantly, both documents support continual improvement of environmental performance. While both documents give requirements for environmental management, and many of the benefits are the same for that reason, there are some differences between them.

The first difference is in the scope of the body that writes the standard. ISO 14001:2015 is issued by the International Organisation for Standardization, which is recognized internationally and is agreed upon by 163 member nations. EMAS is distributed by the European Union (EU), and although it is recognized internationally, only EU countries agree upon the requirements (EMAS is governed by European Regulation (EC) No 1221/2009).

The biggest difference when comparing the requirements is that EMAS has a stricter interpretation of how environmental processes are to be planned and managed. For instance, ISO 14001:2015 requires the organisation to identify your environmental aspects and impacts, while EMAS requires the organisation to perform an initial comprehensive environmental review of your processes. Likewise, ISO 14001 requires the organisation to define your external legal reporting based on the

needs of external parties (such as legal agencies), while EMAS requires external reporting through a regularly published environmental statement.

The EU Eco-Management and Audit Scheme (EMAS) is an alternative management instrument parallel developed to the ISO14001 by the European Commission for companies and other organisations to evaluate, report, and improve their environmental performance. EMAS is open to every type of organisation eager to improve its environmental performance. It spans all economic and service sectors and is applicable worldwide like ISO14001. Since the revision of the annexes of the EMAS Regulation, it is easier for an organisation already complying to an environmental management system such as ISO 14001 to step up to EMAS. Following the enhancement of ISO 14001, EMAS still encompasses the following unique features: a high degree of *credibility*, thanks to a track record of legal compliance, validated by Competent Bodies, a *commitment to continuous improvement* in environmental performance and *transparency*, thanks to compulsory communication through environmental statements and employee participation and commitment.

Understanding the process approach of ISO14001

The Process Improvement Model - This is the "Plan-Do-Check-Act" (PDCA) cycle which you may be more familiar with when it is applied to quality management systems. You may hear it called the PDCA cycle. You can apply it to all processes, and you can also use it to plan and implement process improvement or change. This is to make recommendations for further improvement of the system. These recommendations are incorporated through continual improvement, plans are renewed, or new plans are made, and the EMS moves forward. More on this further down in this reading.

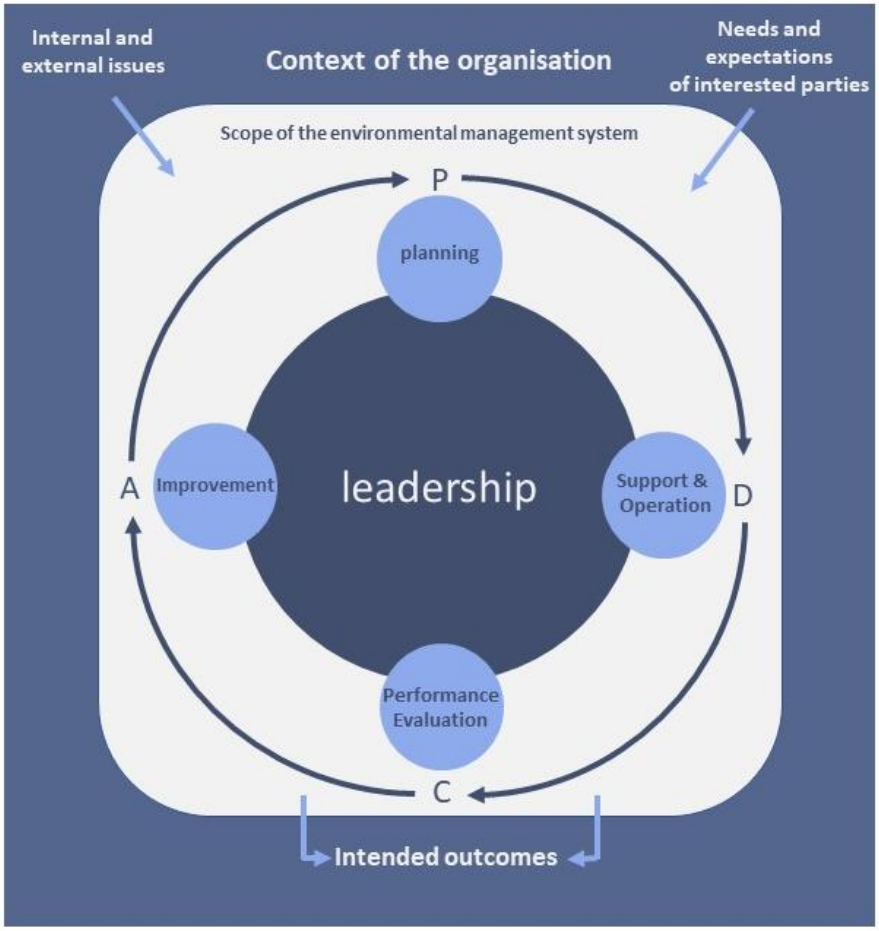
ISO 14001 promotes process thinking to environmental management. We therefor introduce some of the elements for this the Process Improvement Model, the Process Thinking and the concepts of Process Conformance and Effectiveness.

The Process – Improvement Model

This is the "Plan-Do-Check-Act" cycle (often referred to as PDCA cycle) which you may be more familiar with when it is applied to quality management systems. It can be applied to all processes and to plan and implement process improvement or change.

For example: The PDCA method can be used to manage the introduction of a new or revised environmental aspect; as part of a continual improvement project and apply it to the whole environmental aspect management process (see Figure 3-1).

Figure 3-1 The PDCA cycle



Plan

Prior to implementing ISO 14001, an initial review or gap analysis of the organisation, is recommended, including the context of the organisation, and its risks and opportunities to assist in identifying all elements of the current operation and, if possible, future operations that may interact with the environment. This review assists the organisation in establishing their environmental objectives, and processes necessary to deliver results in accordance with its environmental policy.

Do – Implement the Processes

During this stage, the organisation identifies the support and resource required and determines those members of the organisation who are / will be responsible for the EMS implementation and control. This includes establishing procedures and processes for:

- communication,
- operational planning and control,
- emergency preparedness and response,
- documented information required and
- competence and awareness.

Check – Measure and Monitor the Processes and Report Results

During the check stage, performance is monitored and periodically measured to ensure that the organisation's environmental objectives and operational controls meet policy commitments. Internal audits are conducted at planned intervals to ascertain whether the EMS meets the organisation's expectations and whether the processes and procedures are being adequately maintained, monitored and properly controlled.

Act – Take action to Improve Performance of the EMS based on Results

After the checking stage, a Management Review is conducted to ensure that:

a) the objectives of the EMS are being met,

b) the commitment to environmental performance is being met,

c) communications are being appropriately managed and

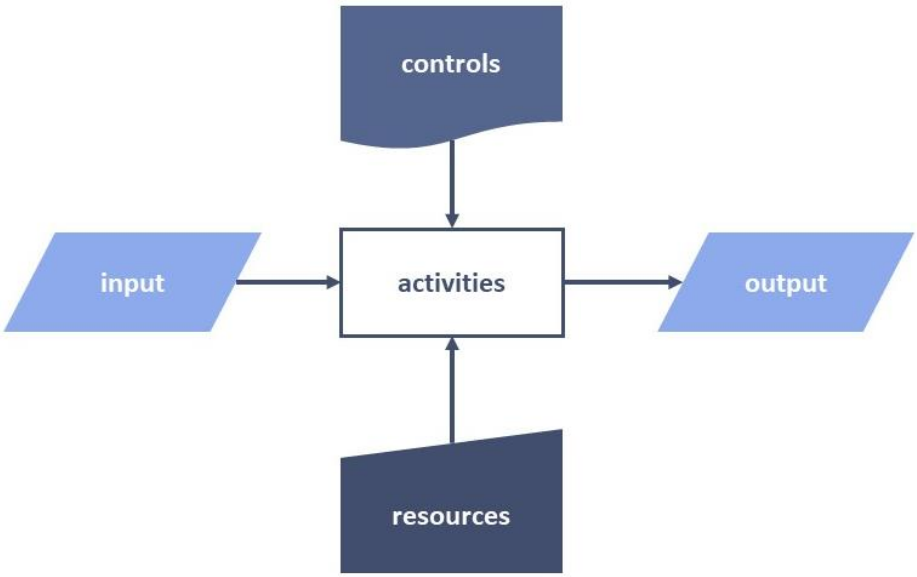
d) changing circumstances, such as within the context of the organisation, risks and opportunities and compliance obligations, are being evaluated.

Process Thinking

A process is defined within ISO 14001 as "a set of interrelated or interacting activities, which transforms inputs into outputs". These processes may be documented, or they might not be.

It is useful to be able to represent a process by a simple diagram. The process model shown below is one recognised way of illustrating a process by a simple diagram and provides a useful framework for planning and preparing a process audit (see figure 3-2).

Figure 3-2 Framework for planning and preparing a process audit



Business or organisation can be described as a collection of processes, that use resources to transform the inputs into the outputs. People and equipment are examples of resources.

A management system is a set of interrelated, interacting processes, and, rather like a jigsaw puzzle, every piece of the system needs to fit snugly with its neighbours, with no gaps, no overlaps and no spare pieces!

The purpose of an environmental management system, based on ISO 14001, is to ensure that: risks and opportunities posed to the environment are well managed, compliance obligations are met, policy commitments are delivered (such as continual improvement and prevention of pollution) and environmental objectives are met.

Using the PDCA approach, ISO 14001 requires processes to be designed, monitored and improved so they consistently meet these requirements.

Process Interaction

Processes rarely operate in isolation and can often be broken down into sub-processes. Outputs from one process are often inputs into subsequent processes or can become a control to another process.

The process approach introduces horizontal management, crossing the barriers between different functional units and unifying their focus onto the main goals of the organisation.

Process Conformance and Effectiveness

Conformity – fulfilment of a requirement.

The term conformance is used when discussing ISO management system standards in preference to the term compliance, which is used when discussing statutory and regulatory standards.

Effectiveness – extent to which planned activities are realised and planned results achieved.

A process is conforming when carried out in accordance with planned arrangements. The planned inputs, resources and controls have been used to produce the planned output. But a conforming process is not automatically an effective process.

Checking a process has been carried out in accordance with planned arrangements is a conformance audit. Checking the results of a process meets requirements is an effectiveness audit. Auditors must consider the purpose of a process to determine its effectiveness.

For the environmental management system to be effective, it must be applied to business processes at all levels, from the top management decision-making process downward throughout the business. Those process activities that could or do create a significant impact on the environment, and / or are bound by compliance obligations, or which must function effectively in order to fulfil the organisation's environmental objectives, must be controlled within the environmental management system.

The purpose of process thinking is to enhance an organisation's effectiveness and efficiency in achieving its defined objectives. In relation to ISO 14001, this means enhancement of environmental performance, conforming to compliance obligations and fulfilment of environmental objectives.

Using the process approach in practice

This all might lead to the idea that all companies will meet their set objectives every year or their own chosen period however, this is not the case in practice. There are many circumstances which will influence the result of the objectives set by an organisation. The simplest example is the Covid-19 pandemic. This impact was not foreseen in any of the organisations at the beginning of 2020 but of course was adopted by the PDCA systematics soon after.

To clarify that for an auditor, the details around not meeting the set objectives are very important in judging the observed situation.

There are two organisations – both did not meet the set objectives for waste reduction set a year ago – but the outcome of the audit is different:

Company A – Reported in the management review and annual report that they did not meet the objectives. When asked the director and his team could not provide any relevant details on how they monitored the progress of the improvement project nor could they show any attempt to influence the end results. The auditor decided to give this organisation a non-conformance to multi criteria from the standard as the organisation does not comply.

Company B - Reported in the management review and annual report that they did not meet the objectives but also the main reasons why they have not met the objective. When asked the director and his team could provide relevant details on how they monitored the progress of the improvement project, they implemented a specific monitoring on the characteristics of the waste streams and they could show several attempts to influence the end results when from analyses it became clear they were not meeting the targets set per month. The auditor decided to give this organisation an improvement notice. The main reason for this was that some of the reasons for not meeting the objectives were laying outside the organisation and outside her control. The auditor considered that the organisations process for identifying possible factors that can influence the objectives was not robust enough but as the organisation already could show that she took the lessons learned under consideration in setting the next years objectives no further action is needed at this point in time.

ISO 14001 Contents and layout

ISO 14001 is a voluntary international standard that establishes the requirements for an environmental management system (EMS). Clauses 4 to 9 are also the requirements that the EMAS regulation imposes on an EMS, these are included in Annex II of the EMAS regulation with several points for attention. The objective of the standard is for an organisation to establish an EMS that is integrated with the overall business management process. Elements of the EMS include Environmental Policy, Planning, Implementation and Operation, Checking, and Management Review.

Integral to the model is the concept of continual improvement of the EMS. This improvement can take many forms, such as improved communications and employee awareness, improved environmental performance, and improved emergency planning and response programs. It is not necessary for all elements of the EMS to be improved simultaneously. Table 3-1 shows the relationship between stages in the PDCA process and the clauses in the standard.

Table 3-1 PDCA and clauses in the ISO 14001 standard

Stage in the process	Clause
PLAN	**1 Scope** **2 Normative references** **3 Terms and definitions**
	4 Context of the organisation 4.1 Understanding the organisation and its context 4.2 Understanding the needs and expectations of interested parties 4.3 Determining the scope of the environmental management system 4.4 Environmental management system **5 Leadership** 5.1 Leadership and commitment 5.2 Environmental policy 5.3 Organisational roles, responsibilities and authorities **6 Planning** 6.1 Actions to address risks and opportunities 6.2 Environmental objectives and planning to achieve them
DO	**7 Support** 7.1 Resources 7.2 Competence 7.3 Awareness 7.4 Communication 7.5 Documented information **8 Operation** 8.1 Operation planing and control 8.2 Emergency preparedness and response
CHECK	**9 Performance evaluation** 9.1 Monitoring, measurement, analysis and evaluation 9.2 Internal audit 9.3 Management review
ACT	**10 Improvement** 10.1 Nonconformity and corrective action 10.2 Continual improvement

A summary of the various requirements from the ISO14001 is added as annex to this document. There is also the possibility to receive more in-depth training on the standard but also on the

auditing processes itself. If you are interested find one of the local training options near you for example via www.irca.org

3.3 Certification and accreditation

The importance of accredited certification

In practice, most organisations that implement an EMS also have this assessed by an independent third party. When the requirements are met, a certificate is issued. It is important to underline that the assessor (certification body or EMAS verifier) is also supervised by an accreditation body designated by the Member State.

In the case of an EMAS registration, this is guaranteed because the competent body only accepts certificates from accredited verifiers. The certification body issuing an ISO 14001 certificate does not have to be accredited, it is therefore important to first establish that the certification body is also supervised by an official accreditation body. All EU Member States are obliged to designate a national accreditation body. Accreditation means that the certification body (or EMAS verifier) must meet certain requirements (such as the competence of auditors) and that checks are carried out by the accreditation body. This chapter discusses the requirements imposed on an accreditation body and the standards that are applied.

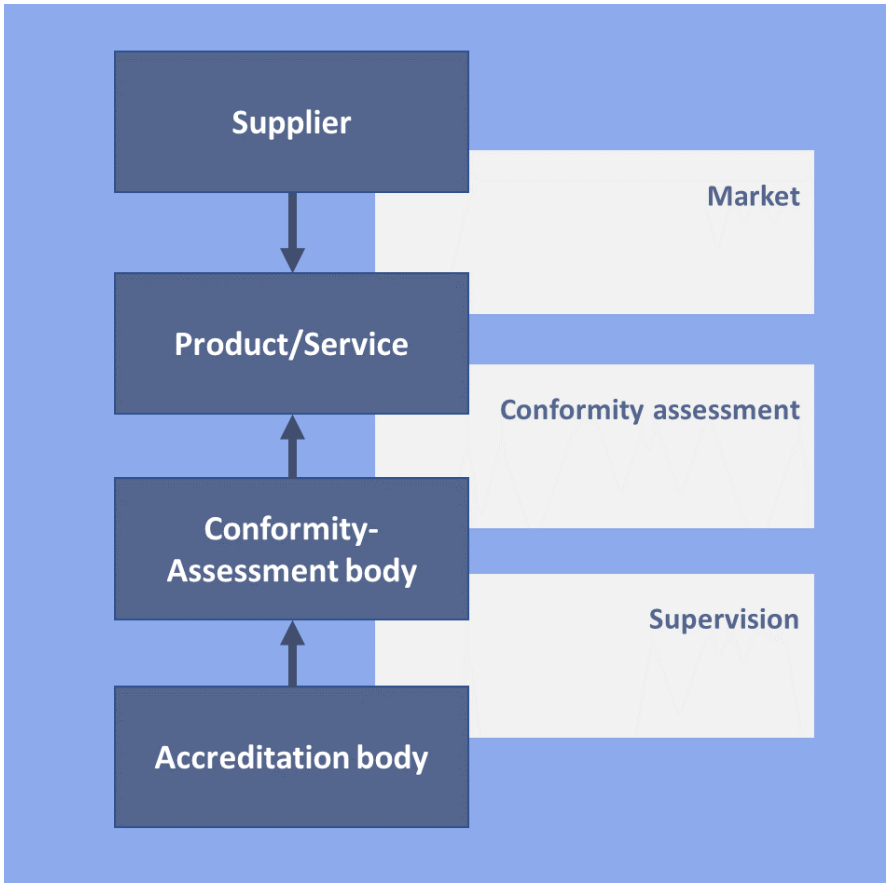
In the certification sector you will find various parties being involved. Certification represents a written assurance by a third party of the conformity of a product, process or service to specified requirements. Accreditation, on the other hand, is the formal recognition by an authoritative body of the competence to work to specified standards.

Accreditation and Certification

Accreditation literally means to give confidence. We want to be confident and able to trust that the quality of products and services is correct. For example, we want to know that the results of blood tests are correct, that meat does not contain too many bacteria, that escalators are safe to use, that electronics engineers are acting professionally. All of this is only possible when certificates and reports substantiate what is being claimed.

The work of accreditation body (further AB) is focused on underpinning this trust via expert, impartial and independent supervision: Organisations can have their products, processes and services assessed objectively by a laboratory, inspection body, certification body or verification body. And that extends to every imaginable field of work: health, environment, construction, energy, food, transport and finance, to name but a few. If a supplier meets the requirements it will be issued with a statement of conformity in the form of a certificate or report. This statement – the certificate - has the most value when the assessing body is expert, impartial and independent. The AB therefore checks whether a conformity-assessment body is competent and if the results are positive it becomes an accredited body. The AB thus forms the last link in the chain of trust. In this chain of trust, you can read for market also stakeholders, the government, the environment, the society, the neighbours, etc. (see figure 3-3).

Figure 3-3 Chain of trust



Most of the certification bodies (CB's) you will come across will be accredited by a (national) accreditation body or an accreditation body accepted by the IAF (International Accreditation Forum), which is an MLA (Multilateral Recognition Agreement) partner. If they are not you might question their quality and work methods as they are not harmonized or maybe not supervised.

The IAF (international Accreditation Forum) has the motto "one accreditation international recognition". Some certification bodies work globally and undergoing accreditation audits from local bodies in every single country in which they operate would not make sense. All IAF members (all EU countries do) recognise each other: "Accreditation body members must declare their common intention to join the IAF Multilateral Recognition Agreement (MLA) recognising the equivalence of other members' accreditations to their own.". This means that it does not matter which Accreditation Body has accredited the Certification Body. If they are part of IAF and MLA the quality and work methods of the supervision will be the same.

3.4 The certification processes

Certification to ISO standards for an organisation is simply a way of proving that an organisation does indeed comply with the relevant standard(s). It does not involve implementing extra

requirements or controls, and if an organisation has already become truly compliant, certification should be a simple next step.

Certification involves an audit being performed by an independent organisation known as a certification body. A certification body will usually perform an audit over two stages. Stage one is a high-level review of the management system, whereas stage two is used to look at the management system in much closer details to provide evidence of compliance in various areas.

A certification body and their auditors will approach the audit from a positive perspective, attempting to find evidence of conformity and are not in the business looking to "catch people out" or to deceive people.

If an organisation meets the requirements and is recommended for certification, then the certification is awarded for a period of three years. During that time the organisation must undergo annual surveillance audits. Surveillance audits are smaller than the original audit and are designed to check whether the organisation is maintaining and improving its management system. After the period of three years, a larger audit will check the validity of the certificate by evaluating again in line with the approach of the initial assessment.

The CB will complete an assessment reports to record findings, progress against the audit plan, positive comments, and points of clarification or interpretation. The CB will record assessment findings in a Findings Log and identify them as Major Nonconformity or Minor Nonconformity. In the event that non-conformities are found (by failing to fulfil requirements of the standard or the system), then agreements will be made on how this will need to be addressed, which in some cases may need a re-visit (additional investigation time means extra costs) and in others it may be acceptable to correct the non-conformity over a longer period of time.

Sanctions and penalties in the certification process

Certification to ISO14001 is in most cases voluntarily and based on the decision of an organisation intending to obtain a certificate. However, it does not mean there are no sanctions if the organisation does not for fill the requirements. Failure to meet the conditions from the standard ISO14001, the client's own system, the legal, regulatory and other requirements or the contract may result in suspension and / or withdrawal of your certificate of approval and termination of the agreement/contract between the CB and the organisation. Suspension means that the organisation can no longer claim that they are certified and cannot use the certificate. Suspension are in most cases for a limited period (3 months) to provide the organisation with the opportunity to make the needed improvements. Withdrawal means that the organisation is no longer certified.

3.5 The content of an EMAS or ISO 14001-certificate

When an inspector is confronted with a certified EMS and wants to use it for supervision, several questions are important:

1. Is the certificate issued by an accredited certification body?

As indicated earlier, this question is not important for an EMAS registration, because the competent body that took care of the registration has checked this. In the case of an ISO 14001 certificate, this is important. A certificate issued by an accredited certification body will show the logo of the AB.

2. Is the certificate still valid?
   An ISO 14001 certificate is issued for three years. The term is stated on the certificate. The validity of an EMAS registration can be verified in the database on the EMAS helpdesk website.
3. Does the certificate relate to the organisation in question?
   The certificate contains the name of the organisation that has been certified and the address with location. A certificate can relate to a main site and any subsidiary site. The subsidiary sites must be listed on the certificate (or an appendix). It must be determined whether the organisation under supervision is covered by the certificate.
4. Are all relevant activities of the organisation also covered by the certificate?
   An organisation can choose to certify certain organisationally separated parts or activities of the organisation and not all activities that take place at a site. The certificate contains a description of the field of application. It is important to establish whether all activities relevant to the regulator fall under the certified environmental management system.

3.6 Compliance assurance guidance EA-7/04

Any organisation can choose to implement a management system standard and use the standard to drive improvement and manage risk.

In order for an organisation to ensure its own continuity, it is important that it be able to ensure it is complying with legislation and regulations. Organisations are held accountable for their 'compliance behaviour' and non-compliance carries heavy risks. Management wants to know if their organisation is 'in compliance'. Proper compliance with legislation and regulations is a precondition for operating a sustainable and socially responsible business. An organisation's management can only state with conviction that it has control of its compliance when it is working on it systematically. However, this does not mean the organisation will be in full compliance. As in any organisation, mistakes can happen or unexpected problems can arise, so it must be noted that a certificate is not meant as a statement of full compliance. Compliance with legislation and regulations is one of the basic requirements of the ISO 14001 standard. The standard in fact contains all the elements of a 'compliance management system' with which compliance can be demonstrated:

- Commitment to compliance
- Identifying legislations and regulations
- Translating legal requirements into their impact on the organisation
- Ensuring that organisational and technical measures for meeting the requirements are taken

- Self-evaluation of compliance with legislation and regulations
- Internal audit
- Management review of compliance

The government's 'system supervision' assumes that an organisation has a system intended to adequately control the risks to the environment it poses. As a minimum, an organisation must achieve the level of control laid down in legislation and regulations. System supervision emphasizes evaluating the management system, instead of checking each individual requirement of legislation and regulations. An element of this – compliance management – is the systematic identification and compliance with legislation and regulations.

Several elements of the ISO 14001 standard refer directly or indirectly to compliance with legislation and regulations. The combination of these elements constitutes the compliance management system. Table 3-2 shows these elements with explicit reference to legislation and regulations. Although the 'internal audit' element does not explicitly refer to legislation and regulations, it is included below since the internal audit is an essential link.

Table 3-2 Compliance management related to requirements in the ISO 14001 standard

	Compliance management element	**Text of ISO 14001:2015**	**Clause no. ISO 14001**
1	**Understanding the needs and expectations of interested parties**	The organization must establish which of the identified needs and expectations of third parties will be its compliance obligations.	**4.2**
2	**Commitment to compliance**	Top management shall define the organization's environmental policy and ensure that, within the defined scope of its environmental management system, it includes a commitment to comply with applicable **legal requirements** and with other requirements to which the organization subscribes which relate to its environmental aspects.	**5.2 D**
3	**Compliance obligations**	The compliance obligations regarding environmental aspects must be identified and it must be clear how they apply to the organization (i.e. what concrete requirements arise from them). The compliance obligations must be considered when establishing, implementing, maintaining and improving the environmental management system. The compliance obligations must be documented in writing.	**6.1.3**
4	**Planning to take action**	The organization should plan to take actions to address its compliance obligations and plan the way in which the actions are integrated and implemented in the environmental management system, and how their effectiveness will be evaluated.	**6.1.4**

	Compliance management element	Text of ISO 14001:2015	Clause no. ISO 14001
5	**Communication**	When establishing its communication process(es), the organization must consider its compliance obligations.	**7.4.1/7.4.3**
6	**Operational planning and control**	The type and scope of the operational control measures are dependent on, among other things, the compliance obligations.	**8.1**
7	**Evaluating compliance**	The organization should determine the frequency with which it evaluates its compliance. The organization must establish, implement and maintain the process(es) needed to evaluate fulfilment of its compliance obligations. Measures arising from results of the evaluation of compliance must be taken. The organization must also maintain its knowledge and understanding of its compliance status.	**9.2.1**
8	**Internal audit**	The organization shall ensure that internal audits of the environmental management system are conducted fusing an audit programme to a) determine whether the environmental system conforms to planned arrangements, and has been properly implemented and is being maintained, and b) report the results of the audits to the relevant management.	**9.2.2**
9	**Management review of compliance**	Reviews shall include assessing opportunities for improvement and the need for change to the environmental management system, including the environmental policy and environmental objectives and targets. Input to management reviews shall include: - results of internal audits and evaluations of compliance with **legal requirements and other requirements** to which the organization subscribes, and, - changes in the needs and expectations of interested parties, including compliance obligations.	**9.3**

The elements of the standard listed in table 3-2 constitute the ‘core’ of the compliance management system. Of course, other elements are also relevant for achieving proper compliance (such as communication, monitoring and measuring, and nonconformities and corrective action).

Compliance with legislation and regulations is an important element of the EMAS (Eco Management and Audit Scheme) regulation. Under this regulation, companies can obtain the right to use a European ‘environmental logo’. To qualify, an organisation must have an environmental

management system and draw up an annual environmental report. The EMAS environmental management system is based on the ISO 14001 standard but has some additional requirements. An organisation following the plan outlined in this document will meet these requirements.

To provide support in audits for the certification bodies a European Accreditation Document has been drafted by EA. This is the EA-7/04 which is also based on the EA-7/04 guideline 'Legal compliance as a part of Accredited ISO 14001 certification'. This guideline of the European Co-operation for Accreditation must be followed by every certification body accredited in Europe for ISO 14001.

When an organisation has implemented ISO 14001, the following information is available regarding compliance with laws and regulations:

- Up-to-date overview of environmental legislation and regulations and the requirements that follow from this for the organisation;
- The results of its own assessment of compliance with legislation and regulations;
- Decisions of the management with regard to compliance with legislation and regulations and possible actions if compliance is not in order.

In addition to the components of the ISO 14001 standard related to compliance, the following requirements are of interest, among others:

- The organisation must provide valid and reliable environmental information. This means that requirements are set for the quality of the monitoring and processing of environmental information;
- The organisation must be aware of the risks and opportunities and have objectives aimed at continuously improving environmental performance. Inspectors can ask organisations about the risks and opportunities that have been identified, the (strategic) choices that have been made and the objectives that have been formulated;
- ISO 14001 requires management to be closely involved in the environmental management system. This means that it is also accountable for its performance and must ensure that the staff are also motivated to contribute to achieving the objectives. In addition, the environmental policy must be aligned with the strategic policy of the organisation.

During an inspection, an inspector could ask for the information generated by the environmental management system and make use of this in the implementation of the supervision. An additional effect of asking for this information is that the organisation is also encouraged to keep the management system up to date.

3.7 The use of a certified EMS for public inspections

The presence of an EMS based on ISO 14001/EMAS provides an inspector information that can be used in the inspection process. As a result, supervision can be carried out more efficiently (in less

time) and more effectively (through better focus). For example, the following sources of information can be used:

- Identification of the significant environmental aspects and the associated risks and opportunities. This identification must also be kept up to date and, for example, adjusted in the event of changes.
- Objectives regarding environmental performance and its improvement (and action plans to achieve them).
- Overview of applicable laws and regulations and the requirements that follow from them.
- An assessment by the certified organisation of compliance with laws and regulations.
- Results of the monitoring, analysis and evaluation of environmental performance.
- Management review in which the functioning of the EMS and the realization of the objectives is recorded with the conclusions that are attached to it.

The above information is available within the management system. In addition, the certification body (or EMAS verifier) that has assessed the EMS issues a report after each audit. This report (audit report) provides insight into the topics that have been investigated, the findings and any deviations. Any samples that the inspector wants to do can be aligned with the samples that were carried out during the certification or EMAS verification.

3.8 The exchange of information between parties involved in certification

In addition to using the audit reports of the certification body or EMAS verifier, there are more options for exchanging information. A condition for this is that all parties involved (the certified organisation, the inspector and the certification body/EMAS verifier) are also open to this. The initiative for this lies with the certified organisation.

Possible forms of exchange are:

- Inspectors can be invited in advance to indicate topics that should be given attention during an audit of the certification body.
- Inspectors may be invited to attend the opening and/or closing of the audit. It can also be agreed to attend an entire audit.
- A meeting can be scheduled to jointly discuss the results of an audit.

During an audit, a standard question will be asked about the correspondence that the certified organisation has received from inspectors. If deviations arise, the way in which the organisation has responded to this with the management system will also be discussed during an audit. The content

of the inspectorate authority's report/correspondence is therefore of great importance to the certification process.[4]

3.9 Strengths and weaknesses

Why do organisations choose for ISO 14001? Why should ISO 14001 be implemented? ISO 14001:2015 is the world's most recognized framework for environmental management system. Governments around the world encourage the implementation of ISO 14001 and it has been adopted as a national standard by many countries. It is part of ISO 14000 family of standards that are designed to be mutually supportive, but also used independently. Organisations implement this structured system in order to have a better control of the environmental impacts and performance caused by the environmental aspects of various activities, services and products. In addition, the ISO 14001:2015 emphasizes the importance of aspects and impact of product "life cycle". However, the main driver for environmental improvement is the pressure received from the supply chain. Some suppliers understand that the dedication to improve the environmental performance will ensure their presence on suppliers' lists.

Reasons why organisations adopt ISO14001 certification, are for example:

- Reduce environmental impact and protect the environment – quantify, monitor, and control the environmental impact of your operations including prevention of pollution and specific commitments relevant to your organisation.
- Cost savings – through better energy management, efficient use of resources such as water and reduced waste.
- Legal compliance – comply with regulations and avoid fines and sanctions against your business.
- Control suppliers – ISO 14001 prevents your good work being undone by suppliers with poor environmental performance.
- Win more business – certification is increasingly a requirement when bidding to win work with the public sector or larger corporations.
- External parties - Auditors keep the organisation sharp; this stimulates improvement of the system and the performance. However, auditors are independent and are not to be considered advisors. This is forbidden by their accreditation.

There are many reasons why an organisation should take a strategic approach to improving its environmental performance. Users of the standard have reported that ISO 14001 helps:

- Demonstrate compliance with current and future statutory and regulatory requirements

[4] SCCM published a document to further explain in detail the compliance cycle within the EMS standards it can be found at: https://www.sccm.nl/sites/default/files/BM28-SCCM_N170215_Infoblad_milieuwetgeving_ENG_20Feb17_0.pdf
The EA-7/04 document can be found at: https://european-accreditation.org/wp-content/uploads/2018/10/ea-7-04-m-rev03-may-2017-2.pdf

- Increase leadership involvement and engagement of employees
- Improve company reputation and the confidence of stakeholders through strategic communication
- Achieve strategic business aims by incorporating environmental issues into business management
- Provide a competitive and financial advantage through improved efficiencies and reduced costs
- Encourage better environmental performance of suppliers by integrating them into the organisation's business systems
- Providing a framework for a systematic and integrated approach for environmental management which allows the EMS to become part of the fabric of the organisation's business.
- Making the EMS "system" dependent and not "person" dependent.
- Promoting sound environmental management which becomes a means of doing business and not an end in and of itself.
- Positioning the organisation as an environmental leader and providing a framework by which to respond to environmental inquiries from customers, stockholders, and other interested parties.
- Creating a learning organisation that uses their management system to grow and further improve not only for their own good (profit) but also for the environment.

Does having an EMS Guarantee the Performance of an Organisation?

The Standard does not establish absolute requirements for optimal environmental outcomes. The application of ISO 14001 can differ from one organisation to another due to the context of the organisation. Thus, two organisations carrying out similar activities but having different compliance obligations, commitments in their policy, environmental technologies and environmental performance goals may both conform to its requirements.

The adoption and implementation of a range of environmental management techniques in a systematic manner can contribute to optimal outcomes for all interested parties. The success of an environmental management system depends on the commitment from all levels and functions within the organisation, led by top management. The degree of improvement of the environmental performance depends on the ambition of the organisation and can therefore differ while the certificate is the same.

Does the presence of an EMS mean that the organization complies with all laws and regulations?

The management of the ISO 14001 certified organization is required to be committed to complying with laws, regulations and other requirements. with laws, regulations and other requirements. A certification body assesses the management system, part of which is compliance management. During an audit, the system is primarily assessed (the completeness and actuality of the register of

requirements; the own assessment of compliance and the measures taken. Specific requirements will be examined on the basis of random checks. Although compliance with laws, regulations and other requirements is required, certification is not a compliance assessment. It is possible that an organisation still violates laws and regulations.

Does a violation mean that the certificate will be withdrawn immediately?

When deviations are found during certification, the organisation is given the opportunity to rectify the deviation. The term an organisation is given depends on the seriousness of the deviation. In the case of a serious abnormality, it must be repaired more quickly. Any deviations are not visible on the certificate. A certificate means that the system of the organisation works, but this does not exclude that there are points that are being worked on to improve it. The audit report provides insight into these points.

A certification body (just like a government inspection) has a certain time available for the execution of audits. This means that choices must always be made with regard to the subjects that receive more or less attention and it must be accepted that not everything can be seen.

How independent is a certification body?

Ensuring independence is an important requirement of the ISO 17021 standard that certification bodies must meet. Certification bodies work on behalf of the organizations to be certified; these also pay the bill. This financial relationship could stand in the way of independence. For this reason, various safeguards are built into ISO 17021, for example:

- The certification body should be aware of the financial dependence on customers and the potential threat to independence. Commercial, financial or other pressures must be excluded. A risk assessment must be made, and measures taken.
- The decisions of a certification body must be based on objective evidence.
- The legal status must be such that the certification body has no links (organizational or financial) with other organizations that can influence the independency.
- A certification body may not provide advice or conduct internal audits at organizations that are being certified.
- Personnel (including the auditors) must not have (or have had) links with organizations that are being certified.
- A certification body has the right to carry out interim investigations at a certified organization, whereby the costs are paid by the certified organization.
- The certification body must have complaints procedures in which third parties can also respond to a certificate issued.

During the supervision by the accreditation body, much attention is paid to the various requirements related to independency. An additional safeguard is that doubts about independence are harmful to the reputation of a certification body. The moment this reputation is at stake, this will also negatively affect the position of the certification body in the market.

How much time does a certification body have to perform an audit?

Time allocation is determined based on international guidelines (IAF MD5). Certification bodies are obliged to use these, accreditation bodies will check the right application of IAF MD5. Time allocation is based on a combination of different criteria. The most important are the severity of the environmental risks involved (complexity) and the number of employees. In addition, there can be several factors that increase or decrease the number of days spent. For example, the maturity of the system; combination of management systems; sites with similar activities).

After the initial audit, there is a reassessment after three years. The reassessment is approximately 2/3 of the time of the initial audit and the surveillance audits in the intermediate years are approximately 1/3 of the initial audit time (with a minimum of 1 day). As an indication: for an organization with 100 employees, the number of initial audit days in a highly complex organization is 16 audit days and 4 days in a low complex organization (this does not include any corrections). In audits, choices will therefore have to be made about the subjects that are audited more or less in-depth.

CHAPTER 4 BRINGING TOGETHER CERTIFICATION AND ENVIRONMENTAL INSPECTIONS

In this chapter we bring together the world of certification and environmental inspections. We explain how the two might meet and how private certification and public inspections may help each other. We start with explaining what benefits may be achieved when the two collaborate. Then, we clarify what we mean by private assurance[5] and then we explore why both private assurance, even supported by certification and public inspections are not without failures. We end this chapter with an overview of the interests of the players involved, their expectations and conditions for working together.

4.1 Benefits for sustainability and environmental protection

The collaboration between certification and environmental inspection may serve several benefits that all clearly relate to the sustainable development goals (SDG's) as developed by the United Nations.

- Benefits for the environmental authority

  Better environmental performance and compliance: The Environmental Authority has an impact on companies' ISO 14001 / EMAS systems, including the action plans that companies choose to prioritize. These action plans often work across environmental parameters and extend into the company's management system. The result of these measures is a better environmental performance in terms of installations (focus on machines, equipment, raw materials, etc.). Overall, good operation of facilities will lead to good environmental compliance of the company as a whole.

- Benefits to the accreditation

  Increased interaction between the auditor and the environmental authority, will give more value to the certification audit, the audit becomes more focused. The result of this interaction will be a better audit process because the competent forum now will be evaluating the environmental performance of the company ex. By discussing difference between formal policies and practices. Furthermore, the value of the audit will be greater if there is an involvement of the environmental authority since both auditor and inspection can recognize the audit.

- Benefits for the company

  Efforts to ensure environmental compliance: The environmental authority recognizes frequent communication between company and authority on environmental compliance.

[5] Obviously, there are several forms of private assurance. In this handbook, we focus on private assurance based on accredited certification.

Through the involvement of environmental authorities in the system, the company provides an assessment of the environmental performance of the environmental agency. This information is useful for better installation performance. Better management of installations is important to avoid interruptions and breakdowns of process and production. A company with a good environmental performance has a better image and can maintain a good relationship with their customers and the environment. In addition, good performance can lead to lower insurance costs.

- International interaction

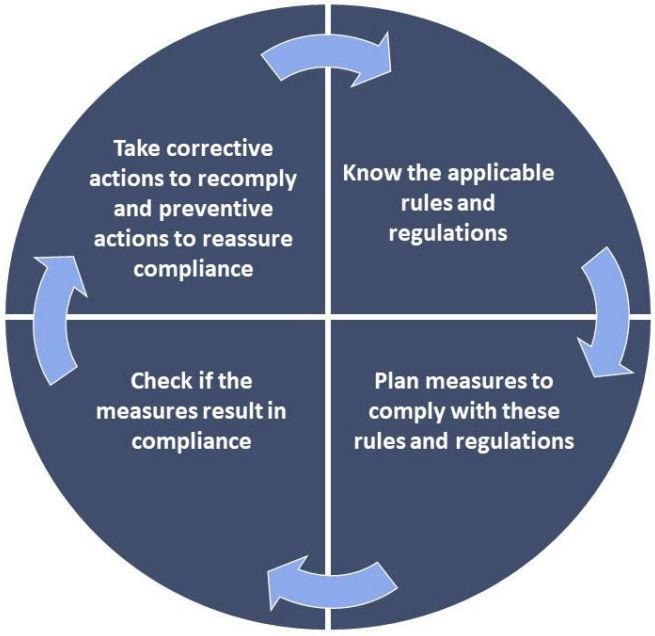
  Overall benefits for all partners: Environmental authorities, auditors and companies will gain from increased interaction between partners. In particular, the international component of the project makes this international interaction for all collaborates extra interesting and valuable. An environmental authority in country x can learn from country y. All partners are with this interaction part of a learning cycle, a learning cycle across borders.

4.2 What is private assurance?

As explained earlier in this handbook, regulated companies have a certain ability and willingness to assure regulatory compliance. This so called private compliance assurance managed by regulated parties may be effective if these parties keep up to date with and know the applicable rules, take measures to comply, check for compliance, take corrective actions to correct any violations and take preventive actions to prevent recurrence of violations with the aim of achieving sustainable compliance by the supervised parties.

This private assurance is illustrated in figure 4-1.

Figure 4-1 Basic elements of private assurance



The good thing about private assurance for inspectors is that it may cause companies to comply with environmental obligations and requirements with less regulatory intervention. The difficulty for environmental inspectors is that the quality of private assurance differs per company. This means that if inspectors want to make use of the private assurance of companies, they will have to understand how it works and if it is effective.

Compliance management is a way to organize private assurance and means that a regulated company assures compliance with the rules by taking all kinds of measures in its organisation, such as arrangement to monitor changes in rules, risk management regarding environmental harm, procedures, internal audits to check if the procedures are followed and measuring its own level of compliance. We call such a set of organisational measures a compliance management system. For environmental regulatory requirements is compliance management an integrated part of the ISO 14001-standard (see chapter 3). So this compliance management system is the means that companies may use to assure regulatory compliance. Such a compliance management system should consist of the following elements:

a) Risk management

The system should include a process for the identification, analysis and control of environmental risks. It should ensure that risks are kept at or below a minimum, acceptable level by implementing effective measures to control and prevent harm to the environment which are triggered by reaching or exceeding the minimum levels.

(b) Registration of legal requirements

The system should include a systematic process for the identification, registration and analysis of regulatory requirements including permit requirements. The company should actively monitor any changes in legal requirements and anticipate these changes so that measures for compliance can be taken in time.

(c) Senior Management commitment

Senior management should give priority to compliance and promote a culture in which being compliant is part of the overall management of the company.

(d) PDCA compliance

The system should include a full plan-do-check-act cycle for compliance. This implies that the company makes adequate plans to ensure compliance, executes those plans, actively measures its own compliance level and take measures to correct failures and errors (violations) and prevents these from occurring again.

(e) Internal control

The system should include an effective internal control function with the explicit task to actively check to what degree the company is complying. This function should be carried out by competent persons with adequate responsibilities and resources available and should be able to operate as independently from the operational part of the organisation as possible.

(f) Competencies, knowledge and experience

The company should have employees with the appropriate competencies for their jobs.

Compliance management is meant to reach a point where the regulated company is intrinsically motivated to comply with the rules. However, this idealistic image does not hold for a number of reasons:

- Companies have goals that conflict with environmental protection like maximizing profit;
- Companies sometimes tend to easily promise to behave in a socially and environmentally responsible manner, while its real conduct is different;
- Companies may not have sufficient knowledge of the rules and the risks regarding environmental harm;
- Companies also sometimes tend to decouple the 'paper' side of organisation (policy statements, procedures, codes of conduct, etc.) from the actual conduct (practice on the shop floor and real outcome in terms of environmental protection) see next explanation in the orange box;
- Last, but perhaps most importantly:

Figure 4-2 Explanation of decoupling

DECOUPLING

Companies (and other organisations) typically try to realize their goals by a four step process:

(a) Goal setting: What do we want to achieve?
Hopefully, environmental protection is an important goal

(a) System: What do we have to do to make this happen?
This means they have to organize who is doing what, when and how (procedures & instructions)

(a) Practice: What happens really?
Do we execute our procedures & instructions and if these do not help achieving our goal in this situation, is the feedback used to improve the system?

(a) Outcome: What have we actually achieved?
Did we really make it happen and what can we learn to improve?

However, there can be gaps (decoupling) between each of these steps. This may mean that (1) the goals are not adequately translated into procedures & instructions or (2) procedures & instructions are not adequately applied or (3) all this effort does not deliver the desired outcome in the real world (model from De Bree & Stoopendaal 2020).

Obviously, each of these gaps may be caused from different underlying problems. (1) may stem from a lack of knowledge or capacity whilst (2) may originate from a poor culture. (3) basically means that assumptions about the effectiveness of the measures taken may not be valid.

4.3 Limitations of inspections

Not only private assurance with the use of a compliance management system has shortcomings, traditional environmental inspections have several limitations too:

- A company can only be physically inspected during a very limited amount of time;
- The inspectorate has at its best only a snapshot of (often only a limited part) of the company. Inspectors have problems keeping up with technological changes in the area of the inspected company;
- Training resources are limited, so competencies of inspectors tend to erode instead of the needed improvement;
- The bottom line is that the level of traditional physical inspections is roughly negligible;
- Traditional supervision is built on identifying offences (what goes wrong) and punish the violating company. It typically does not look at how to prevent offences. Even popular strategies like responsive regulation are based on supervisory action as a reaction to offences;
- Last, but most importantly:

Environmental inspections are not perfect because:

No system is without failures

In the light of the approach in this handbook, public regulators expect companies to behave responsibly, take a pro-active stand towards compliance management and be transparent to their stakeholders including regulators. Both parties should consider trust as an option, and seek dialogue.

The result could be reduction of risks for the environment, transparency and a learning atmosphere. If companies perform well managing their compliance and can demonstrate that, both authorities and companies can save a lot of time and money. Many companies are open to productive engagement with regulatory authorities. Therefore, making use of this potential opens new ways of leveraging supervision policies. Prerequisites are that the inspectorate and the company both are consistent and reliable partners and that the interests of third parties like public and NGOs are considered. At the strategic, tactical and operational level, there is an analogy between what companies and inspection organisations should accomplish (figure 2-1). If an inspection organisation requires a certain level of assurance from a regulated company, it should itself reflect this required level of assurance its own organisation. Without doing that, the professional level of the inspection organisation itself may become the limiting factor in optimizing compliance assurance.

In bringing together environmental inspections and private certification there are three important players, namely inspectorates, certification bodies and regulated certified companies. Collaboration between these players can be a success if we recognize the interests of these players, the expectations they may have from the collaboration and if they meet necessary conditions. These are illustrated in table 4-1.

Table 4-1 Interests, expectations ad conditions of the main parties

	Public inspectorate	Certifying bodies	Companies
INTERESTS	• Risk control environment & regulatory compliance • Effective inspections supporting broad SDG* goals • Efficient inspections and performance • Legitimacy	• Return on investment & continuity • Satisfied customer (certified company) • Reputation • Value of the certificate	• Being in control • Acquiring a certificate • Reputation • Relation with inspectorate • Limited regulatory burden
EXPECTATIONS	• Good CMS doesn't mean that risk or violations are 0 • Good CMS means pro-active, self-corrective and learning behaviour • Certification isn't a plug & play solution, but requires input from inspectorate	• Adequate control by accreditation • Constructive feedback public inspectorate • Recognition of inspectorate if system is adequate	• Relevant rules, supervision & enforcement • Room for own professionality ad initatives • Recognition of inspectorate if system is adequate
CONDITIONS	• Leave black/white thinking and too formal attitude • Constructive contribution to effectivity certification by relevant feedback • Support for the process, also when not everything is perfect	• Professional, transparent and objective certification • Critical assessment of CMS: (a) decoupling 7 (b) weigh intrinsic motivation • Contribute to improvement of certification process, self-critical	• Effective risk management and compliance assurance: (a) Intrinsic motivation (b) Adequate compentencies (c) Implemented CMS (d) Pro-active conduct

*SDG goals = sustainable development goals as defined by the UN.

In the next chapter we will explain how certification can be integrated in the arrangements of public inspectorates and how problems can be countered.

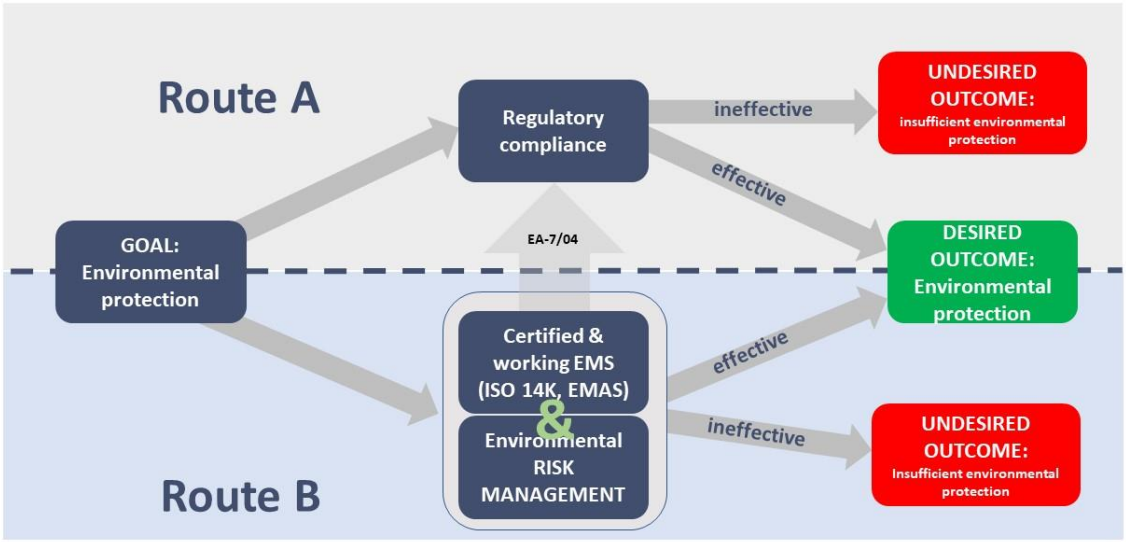
CHAPTER 5 HOW TO USE CERTIFICATION FOR PUBLIC INSPECTIONS?

In this chapter we bring the world of certification and environmental inspections together. First, we explain how certification of environmental management systems (EMS) can contribute to public value in general and environmental protection in particular. Then, we demonstrate how the two can work as communicating vessels for the benefit of the parties involved. After that, we propose a practical working routine for environmental inspections on certified companies. Finally, we discuss potential problems and risks and how to avoid or mitigate them.

5.1 Bringing the two together

Basically, there are two ways to achieve the desired goal, that is environmental protection. One is by complying with the rules assuming that the rule maker has done a good job in making effective rules. The other one is if the company itself organizes environmental protection using an effective EMS and adequate environmental risk management. These two routes are visualized in figure 5-1. Of course, the two ways are not fully independent. As the company is formally obliged to comply with the rules, the EMS will also be a means to assure regulatory compliance. However, in route B the company can use its own knowledge and insights in its specific situation to assure environmental protection in the most effective and efficient way.

Figure 5-1 Two roads leading to Rome

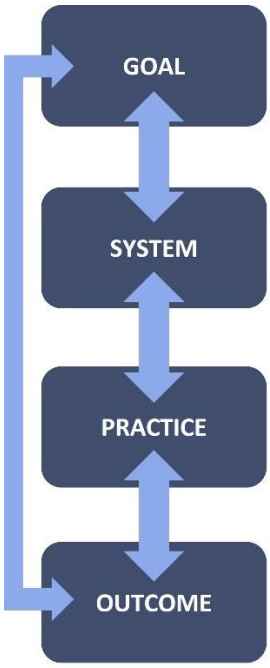


As the ultimate goal of the environmental inspectorate is to achieve environmental protection, the role of the inspector in Route B comes down to assessing the effectiveness of the EMS and risk management.

5.2 Bridging the gap

The auditing of environmental management systems for the cause of ISO 14001 certification or EMAS registration is aimed at the assessment of the design and effectiveness of such systems. This would ideally imply that during the certification process, the consistency between goal, system, practice and outcome as explained in figure 4-2 are adequately tested and judged (Figure 5-2).

Figure 5-2 Consistency between goal, system, practice and outcome[6]



As explained in chapter 3, the standards of both ISO 14001 and EMAS include clear and adequate requirements for Environmental Management Systems (EMS) with regard to regulatory compliance assurance. This means, the standards provide a model for companies to organize compliance assurance in their own organisations. In addition, the EA-7/04 provides specific *"information on the relationship between an organisation's accredited Environmental Management System (EMS)*

[6] Model from Bree, MA de, Stoopendaal (2020) De- and recoupling and public regulation, *Organization Studies, 41*(5).

certification according to ISO 14001:2015 and that organisation's degree of compliance with applicable environmental requirements".

The interest of the inspector is to assess whether the regulated company is assuring environmental protection effectively. The model we have proposed reflects the critical levels that should be aligned in order to achieve such assurance. So ideally, the certification process covers the whole model (figure 5-2). This means that the certification process should critically assess the following basic questions:

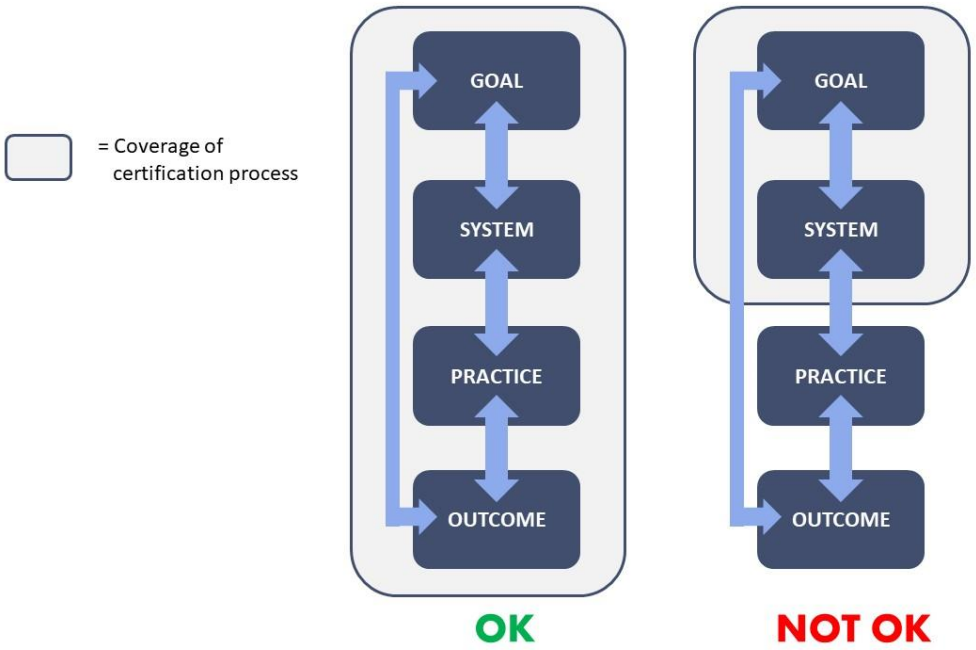
(a) Has the goal of environmental protection been adequately translated into procedures, instruction and protocols (goal - system)?

(b) Are the procedures, instructions and protocols carried out right in practice? And if the execution of the system does not result in environmental protection in a specific case, is adequate action taken to correct this? (system – practice)

(c) Does all the effort really result in environmental protection in the real world (practice – outcome)?

If the certification process does not adequately assess the consistency between goal and system, system and practice and practice and outcome, the process has less value for the inspector. This may happen if the certification process is too unilaterally focused on the paper side of the EMS and less on the proper practical implementation and real outcome. These two situations are shown in figure 5-3.

Figure 5-3 Certification should cover proper implementation of EMS in practice



Practical working routine

In general, the environmental inspector can critically ask a number of questions about whether the EMS has been designed well and is doing what is supposed to do. In table 5-1 questions are suggested to use for this purpose. It should be noted that most of the questions are expected to be covered by the certification audit. This is particularly true for the question on the goal and system level (green questions). This means that the inspector should focus on the questions related to the practice and outcome levels (red questions).

Roughly, we can say that certification bodies adequately check the consistency between goal and environmental management system (EMS), covering the questions next to goals and system in table 5-1. The main reason for this is that the ISO 14001 standard assures a good translation of environmental protection into requirements for the system. Furthermore, certification bodies usually check the design of the system critically against this standard. More specifically, the compliance assurance function of the ISO 14001 certified system is covered by the EA-7/04 document.

Sometimes however, the implementation of the EMS into practice and practice into desired outcome (environmental protection) is not always that critically assessed. There are several reasons for this. Although implementation formally is a serious point of interest for the certifying auditor, guidance for the auditor is much weaker. Secondly, the auditor has not much time to check proper implementation due to tight scheduling. Thirdly, the rather vague requirements for implementation leave room for bias. The same reasons are valid for the assessment of the real outcome. And clearly, this is a potential issue because we know from research and experience that some organisations tend to easily create a paper reality that is not put into practice for whatever reason.

Resuming, in terms of decoupling, accredited ISO 14001 certification typically implies an EMS that is well designed on paper. However, the translation into actual behaviour in practice and the desired results is less certain.

Table 5-1 Questions to be used by the inspector to verify the effectiveness of the ISO 14001 certified/EMAS registered EMS

Main items	Questions
Goals	1. Has the company explicitly included environmental protection in its objectives? 2. Has the company explicitly included compliance with legal requirements in its objectives? 3. Is everyone really motivated to achieve these goals?

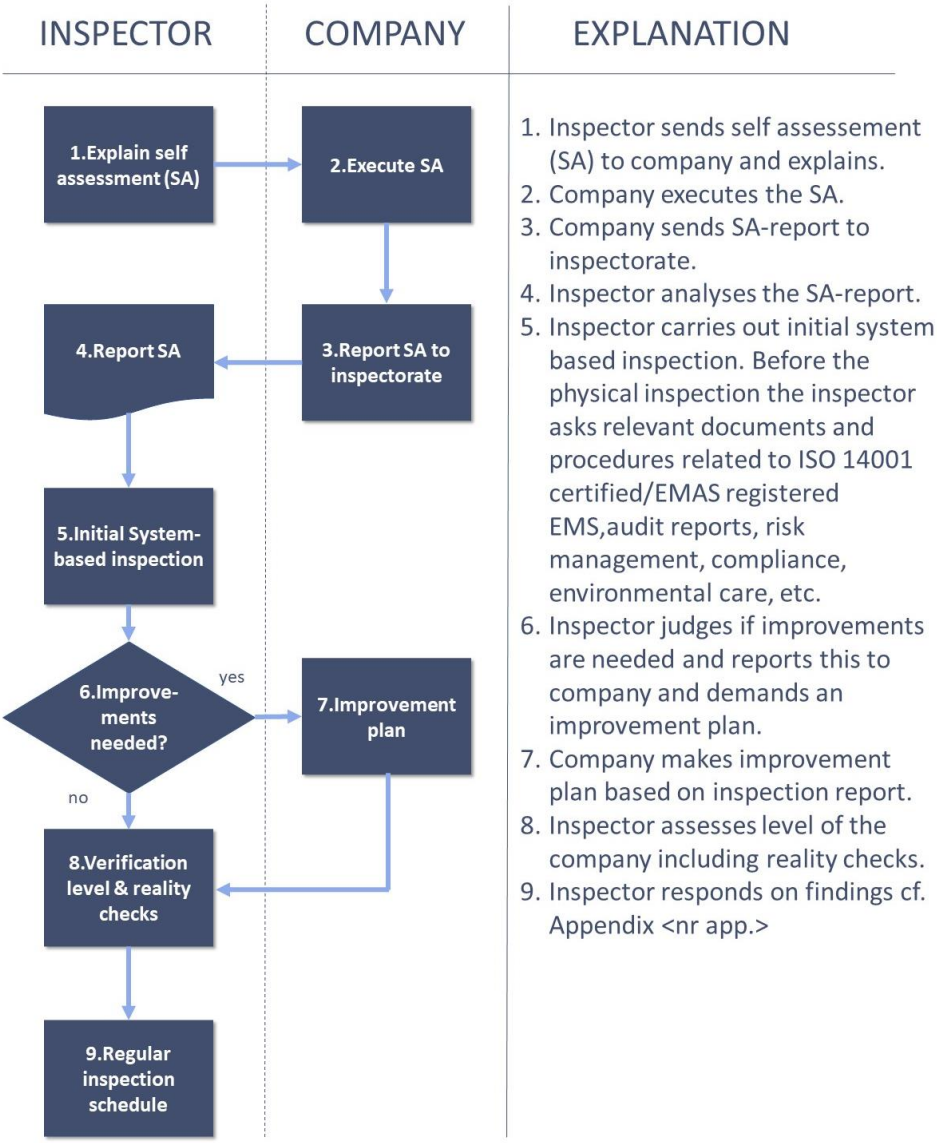
System	1. Has the company taken measures that can reasonably be expected to lead to environmental protection? 2. Is it properly arranged that the environmental risks are adequately identified, analyzed and where necessary mitigated? 3. Is the degree of internal control in line with the company's risk profile? 4. Are the relevant procedures clearly described? 5. Are tasks and responsibilities in the field of environmental protection clearly and structurally defined? 6. Is there an effective internal policy of punishment and reward for compliance with procedures and rules? 7. Is the internal control of the implementation well organised? For instance with a separate department with trained people who check whether things are going well and have the powers to intervene?
Practice	1. Are the measures and procedures, as detailed on paper, properly implemented and are the necessary facilities present and working? 2. Does the company have an adequate internal control process to determine this? 3. Is the company culture focused on doing the right things with regard to the environment? 4. Are ineffective procedures being discussed and adjusted where necessary? 5. Does the company take its own agreements, procedures and rules seriously? 6. Has the company budgeted resources to achieve the objectives regarding environmental protection?
Outcome	1. Is risk management regarding the environment in order? 2. How does the company perform in the field of environmental protection? (Compared to similar companies, compared to past) 3. Is the company's environmental performance evaluated at the highest level? 4. Are lessons learned from this evaluation for improvement and are they actually followed up?

Of course, the questions in table 5-1 are quite generic. It will be useful to dig deeper and ask more specific questions depending on what you find. For example, question 4 about practice is “Are ineffective procedures being discussed and adjusted where necessary?”. It would make sense to ask

the company for documents to actually see how the process goes and whether deviations are actually discovered and followed up in a way that improves the system.

It is recommendable to use the questions of table 5-1 for self-assessment by the company. In this way, the company is focused on the subjects that will be considered during the system-based inspection. Also, using a self-assessment form is very efficient and provides a first substantial stimulus for the company to improve. It may help to use a flow chart to guide the inspectorate's work. An example of such a flow chart is given in figure 5-4.

Figure 5-4 Process of system-based inspection



Inspection to complement certification

The above means that the environmental inspector should focus mainly on the adequate implementation and desired outcomes of the EMS. Below, a number of examples are given to illustrate how these checks can be done.

Example 1 Working according to the procedure

Let us suppose that the certified company has a procedure as a part of its EMS to keep the environmental regulations up to date. The Health, Safety & Environment (HSE) Manager has been appointed to monitor all relevant changes in legislation, permits and other relevant rules the company has to comply with. The inspector can check whether this procedure is carried out correctly by looking at the changes made in the register of regulations the company is keeping and checking whether this register is kept to up to date by the responsible official within the company.

Maybe the inspector concludes that the company is lagging behind in keeping this register up to date. In that case the inspector may try to find out what the reason behind this is. Maybe the HSE Manager does not have enough time or lacks the required knowledge.

NB: The fact that the register is not up to date does not necessarily mean that the company is not in compliance. However, for assuring regulatory compliance adequately, one of the most basic preconditions is to know what the rules are. So, here is a chance to improve the working of the system in a fundamental way.

Another interesting question is whether the certification auditor has noticed this deviation in the working of the system and if so, what action has been taken since. If not, why did he/she notice? Obviously, granting a company a certificate without the company knowing what the rules are is certainly problematic.

Clearly, further actions in different directions could be taken from here including a critical discussion with the companies' management and maybe also a complaint at the Accreditation Body about the certifying body to help prevent these deviations in the future.

Benefits

If regulated companies receive feedback on the design and working of its EMS from both the certifying body and the inspector, most companies will use that to improve their systems and their working. The reason for this is that we know companies and their managers do not like to be confronted with inconsistencies between what they tell and what they actually do. Also, we know that such feedback supports the officials within the company who are charged with the task to check regulatory compliance and conformity (e.g. SHEQ managers, internal auditors, compliance officers etc.). Often, these officials are not always the most popular colleagues just because of this responsibility. The feedback from outside supports them in their argument towards the management to achieve improvements in regulatory compliance.

The bottom line is, that if such feedback is right and delivered in a reasonable and clear way, it can fuel awareness and set in motion a significant sustainable improvement of the company's performance. The ultimate result may be a self-monitoring, self-correcting and learning company. Table 5-2 shows the desired situation based on meta-regulation.

Table 5-2 Division of tasks (based on Sparrow 2012

	TASKS INSPECTOR	TASKS COMPANY
Traditional regulation	1. Risk identification 2. Risk analysis 3. Risk control 4. Compliance assurance	1. Compliance
Meta-regulation	1.Hold company responsible 2.Assess compliance assurance & risk management 3.Stimulate improvement of compliance assurance & risk management	1. Risk identification 2. Risk analysis 3. Risk control 4. Compliance assurance

5.3 Pitfalls

There are two major things that we must keep in mind when engaging in environmental management systems. As explained above, the paper system may not reflect actual practice. So, in working with EMSs it is of key importance that one way or another, it must be checked if the system (on paper) and the actual practice are consistent.

The second pitfall has to do with expectations. We earlier explained that no system is perfect in terms of without any failure at all. **This means that if an inspector discovers a breach, this does not necessarily mean that the EMS is not working properly. The other way around: the absence of breaches of failures does not mean that the EMS is working properly**. This is important because it demands that the inspector may be reluctant to intervene in case of a breach when he observes the company taking care of that itself (discovering, correcting, learning). But also, it may require intervention from the inspector if there is no breach, but the company is taking unacceptable risks. *Note that this counter-intuitive response requires that the management of the inspectorate agrees with this policy*!

In case of a breach, the most interesting questions are:

- Did the company discover the breach itself (by applying its EMS)?
- If they did, what did they do to correct it?
- If they did, are the authorities informed about the breach (if required)?

- If they did, what did they change in their system to prevent this from happening again?

Phases in the implementation of the 'working together' approach

The goal of inspection is in the end the equal to that aimed for by certification: the continuous improvement of the environmental protection. By following the approach in this handbook, the content of the inspection on company level will change in time. In the first phase it is important to build confidence in the quality of the private assurance process and to improve this process. In the next phase the priority in inspections can shift gradually from the assurance process and the EMS to the continuous improvement of the environmental performance beyond the legal requirements. As already earlier argued, this is a very important point as we need the effort of the private parties to counter the challenges we are facing with regard to climate change, circular economy, sustainability and environmental protection in general.

It is still important to have attention for the function of the EMS but the focus in the inspection can be redirected from possible violations to possible improvements. This means that inspectors may want to discuss the possible improvements in for example the raw materials used (for example chemicals), change of energy sources, sustainable production methods etc. and stimulate organizations to take action.

CHAPTER 6 FEASIBILITY AND PRACTICAL TOOLS

Using EMSs for public inspections can be interesting and helpful in achieving public value. However, not all situations are suitable for applying this approach. Whether or not using EMSs is useful depends on a number of conditions. In this chapter we will go through the main conditions that are decisive. Furthermore, we present and explain some practical tools.

6.1 Maturity of EMSs

First of all, not all EMSs are mature enough to provide accurate assurance. This has to do with the fact that EMSs are usually initiated by developing procedures and documents that are meant to form a management system. If a EMSs is not yet fully developed and mature, a number of flaws may stand in the way of acceptable effectiveness.

- The system may not yet be complete to cover all the relevant topics;
- The system may not yet be integrated so the documents are not adequately connected and aligned;
- The system may not yet be communicated to the people who are supposed to use it;
- The system may not yet be grown and improved by learning from the practical issues that arise in practice.

Obviously, the certification audit by the auditor of the certifying body is the first check of the EMSs' maturity. Of the system passes the audit and the certificate is granted, this proves a certain maturity. However, as explained in the earlier chapters, sometimes EMSs can comply with the ISO standard and still be poorly implemented.

6.2 What do we need?

Basically, there are four conditions to be met when applying the approach proposed in this handbook.

First of all, inspectors need to understand what private assurance is and how they can value it. Also, they need to have the competencies to assess whether or not the private assurance performed by regulated companies is effective given the pitfalls regarding decoupling of formal and actual behaviour as explained in chapter 5. Finally, inspectors should be aware that a single incident does not mean that the assurance is flawed. No system is perfect. However, what can be expected from an effective private assurance is that the system identifies incidents, reacts to end the incidents and learn from them to improve the system.

Second, the management of the inspectorate should also understand the above, be committed to it and support inspectors when they make decisions about the quality of private assurance. The latter is important because the assessment of private assurance is always at least partly based on qualitative data and leaves room for interpretation.

Third, regulated and certified companies should be willing and able to assure environmental protection to the best of their abilities. If companies have to be forced this approach is not likely to be effective. With the will and creativity of companies however, environmental protection can be improved beyond regulatory frameworks.

Fourth, it is important that other relevant stakeholders are supportive to the approach. Most relevant may be certifying and accreditation bodies that play an important role in continual organisational learning and countering ineffective EMSs. Other stakeholders like private federations, NGO's and public/private bodies may also be able to provide significant support.

6.3 Mind set of public inspectorates

One of the most important points is that the inspectorate is aimed at achieving the original goal of environmental regulations, namely protection of the environment. The problem is that many environmental regulations, especially the regulations that prescribe certain means, do not fit every specific situation. Also, regulations sometimes do not cover all the threats to the environment, for example in case of yet unknown chemical substances. So the inspectorate should primarily focus on environmental protection and the risks that may endanger the environment rather than general rules.

A second relevant point is that the inspectorate should have an open mind to engage with companies in order to achieve results beyond regulatory compliance. Cooperation with companies can bring in a way that considers the pitfalls of capture and greenwashing, is the way to go forward if challenges are to be countered.

6.4 How to assess de- and recoupling of formal and actual reality

As explained earlier, in order to assess the level of assurance within regulated companies, the inspector should focus on the degree of coupling. This means that the inspector should assess if goal, management system, practice and real outcome are consistent. Decoupling can occur between

(a) goal and system,
For example: a company declares that they want to minimize the level of hazardous waste produced (goal), but fails to have plans in place (system) how to do that.

(b) system and practice,
For example: a company has procedures to measure air emissions (system), bit fails to execute them due to lack of capacity (practice).

(c) practice and real outcome.
For example: a company checks whether soil contamination is prevented (practice), but fails to check on the right parameters with the consequence of soil contamination with parameters not included in the analysis (real outcome).

Obviously, every company or site has its own specific risk for the environment. So the questions the inspector asks should be tailored to the specific relevant risks or issues in that situation. Company A

may have main issues with air pollutants, whereas company B may produce vast quantities of polluted water.

NB: it is important to verify as much as possible. Asking questions (Table 5-1) is not enough but should be backed by reality checks. For example, if a company answers that is has a risk management procedure, you should ask to see this procedure and judge whether or not the content is adequate, and the procedure is actually used in practice. The latter again backed by evidence from practice.

6.5 Assessment policy and auditing questions

The assessment policy has two main goals:

- The first goal of the assessment is to determine assurance of environmental protection is that the regulated company achieves. This is done by evaluating the level of coupling or consistency between goals and system, system and practice and practice and real outcome (real environmental performance). This assessment results into a level of private assurance (Annex 3).
- The second goal of the assessment is to stimulate the regulated company to improve its assurance by presenting the assessment results and discussing these. Being confronted with inconsistencies between goal, system, practice and outcome will in most cases encourage the company to correct these inconsistencies.

Given these goals the auditing questions should be chosen in such a way that the inspectors understanding of the level of private assurance is adequate. It is recommended to use the questions presented in Table 5-1 and add tailored specific sub questions depending on the situation to be able to get a good answer to each of these questions.

It is recommended that the draft report of this assessment and the concluded level of private assurance is presented to the company and left pen for comments from the company in case collected data is not sufficient or missing.

A very efficient way to assess the level of assurance and the EMSs effectiveness is based on asking the company to fill in a self-assessment questionnaire (Annex 2). This points the company's management to the relevant questions the inspector has about the level of private assurance. If the inspector checks the same points used in the questionnaire independently from the self-assessment process, the two can be compared and form the basis for a dialogue.

Also, this method may contribute significantly to the effectiveness of inspections, as this dialogue may trigger the company to improve inconsistencies found during the process.

A pro forma process chart is given in Figure 5-4.

6.6 Interviewing and auditing techniques

It is clear that assessing the level of private assurance and the level of de- and recoupling within regulated organizations requires specific competencies. Although it is not the aim to double the work of private certification auditors, the way inspectors look at the company is quite similar. Both should try to understand whether the environmental management system meets certain requirements and is adequately implemented. Also, the approach is primarily based on the attempt to improve.

As explained earlier, the most critical aspect the inspector should concentrate on, is the degree of actual implementation of the management system in practical behaviour and outcomes. The reason being is that the certification audit covers most of the question regarding goal-system decoupling. This means the main focus of the inspector should be on answering questions like:

- are procedures carried out in practice?
- How does the company verify correct implementation of the EMS?
- Does the effort of the company deliver the desired results in terms of environmental performance?
- How convincing is the management of environmental risks?
- Does the company learn from failures by correcting them and analysing them for adjusting its processes?

GLOSSARY

This glossary provides the meaning of the most often used words and terms.

Accreditation	third-party attestation related to a conformity assessment body conveying formal demonstration of its competence to carry out specific conformity assessment tasks.
Accreditation body	a national accreditation body appointed pursuant to Article 4 of Regulation (EC) No 765/2008 which is responsible for the accreditation and supervision of environmental verifiers (Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS).
Auditor	an individual or group of individuals, belonging to an organisation itself or a natural or legal person external to that organisation, acting on behalf of that organisation, carrying out an assessment of, in particular, the environmental management system in place and determining conformity with the organisation's environmental policy and programme, including compliance with the applicable legal requirements relating to the environment (Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS).
BAT	Best Available Techniques
BREF	BAT reference documents developed in the European Union to describe industrial processes, emission and consumption levels of applied techniques, and best available techniques for integrated prevention and control of pollution from industrial activities.
Certificate	a written statement of an independent party to declare the conformity of an organization, product or service with a certain standard.

Certification body	a Conformity Assessment Body (CAB) that performs conformity assessment services against ISO 14001:2015.
Compliance	a state of conformity or identity between an actor's behaviour and a specified rule.
EA-7/04	Legal Compliance as a Part of Accredited ISO14001:2015 Certification, European co-operation for Accreditation, 2017.
EMAS	Union eco-management and audit scheme (EMAS), pursuant to Regulation (EC) No 1221/2009.
Enforcement	the state's actions to detect violations, to stop them and to prevent further violation from occurring in the future.
Environmental inspection	all actions, including site visits, monitoring of emissions and checks of internal reports and follow- up documents, verification of self-monitoring, checking of the techniques used and adequacy of the environment management of the installation, undertaken by or on behalf of the competent authority to check and promote compliance of installations with their permit conditions and, where necessary, to monitor their environmental impact.
Environmental management system	the part of the overall management system that includes the organisational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy and managing the environmental aspects.
Environmental regulation	a set of laws and rules designed to eliminate or reduce the risk posed by environmental hazards on individuals and the ecosystem.
Environmental verifier	a conformity assessment body as defined in Regulation (EC) No 765/2008 or any association or group of such bodies, which has obtained accreditation in accordance with this Regulation; or (b) any natural or legal person, or any association or group of such persons, which has obtained a licence to carry out verification and validation in accordance with this Regulation (Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November

	2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS).
Greenwashing	the superficial or insincere display of concern for the environment.
IED	Industrial Emission Directive 2010/75/EU of the European Parliament and the Council on industrial emissions
IMPEL	European Union Network for the Implementation and Enforcement of Environmental Law
Inspection	an organized examination or formal evaluation exercise.
IPPC	Integrated Pollution Prevention Program; Directive 2008/1/EC[1] of the European Parliament and of the Council of 15 January, 2008.
IRAM	Integrated Risk Assessment Method as developed by the IMPEL network dealing with risk assessment questions.
ISO	International Standard Organization.
Management system	the framework of documented processes, procedures and instructions used by an organization to ensure that it can fulfil all the tasks required to achieve its objectives.
Organisation	a decided order, including one or more of the elements of membership, hierarchy, rules, monitoring, and sanctions.
Permit	a written authorisation to operate all or part of an installation or combustion plant, waste incineration plant or waste co-incineration plant (IED).
Regulation	a specific form of governance: a set of authoritative rules, often accompanied by some administrative agency, for monitoring and enforcing compliance.
Requirement	expression in the content of a document conveying criteria to be fulfilled if compliance with the document is to be claimed and from which no deviation is permitted.

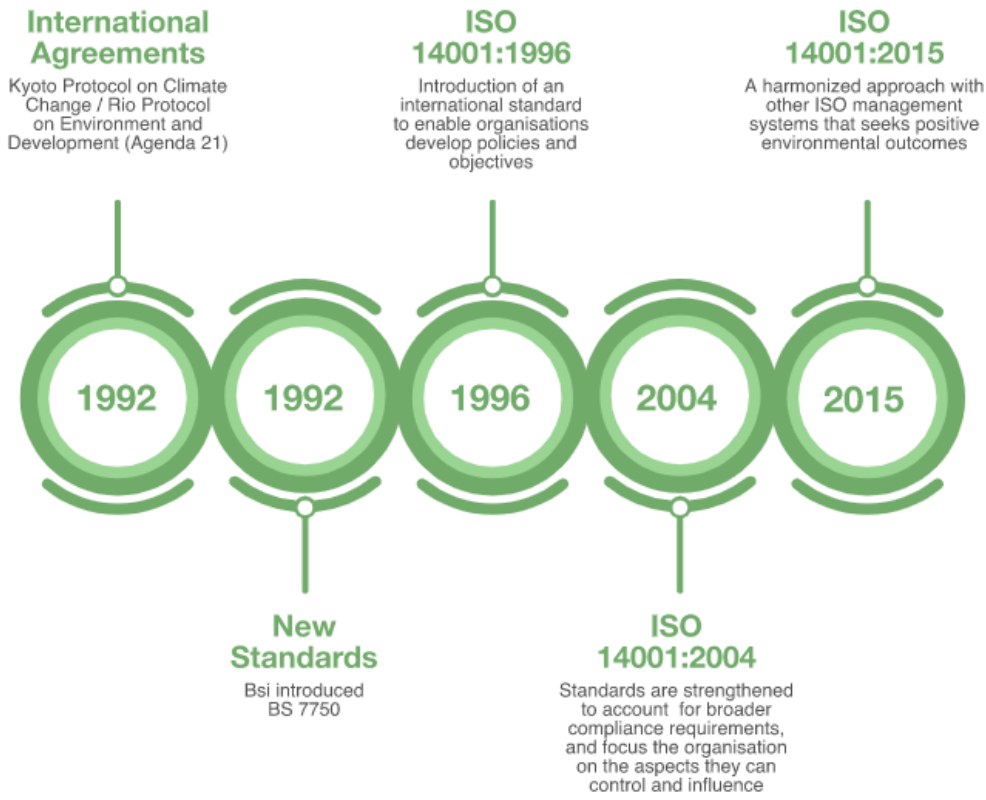
SDG's	Sustainable Development Goals as defined by the United Nations.
Standard	document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context.
Supervision	collecting information about the question of whether an act or matter meets the requirements set for it, then forming an opinion about it and possibly intervening in response thereto.
Sustainability	the tripartite pursuit of economic, ecological, and social performance, which is also referred to as the triple bottom line of the organization.
Trust	the intention to accept vulnerability based upon positive expectations of the intention or behaviour of another.
Verification	the conformity assessment process carried out by an environmental verifier to demonstrate whether an organisation's environmental review, environmental policy, environmental management system and internal environmental audit and its implementation fulfils the requirements of this Regulation (Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS).

Annex 1 Background information about EMS standards

A brief history of ISO14001

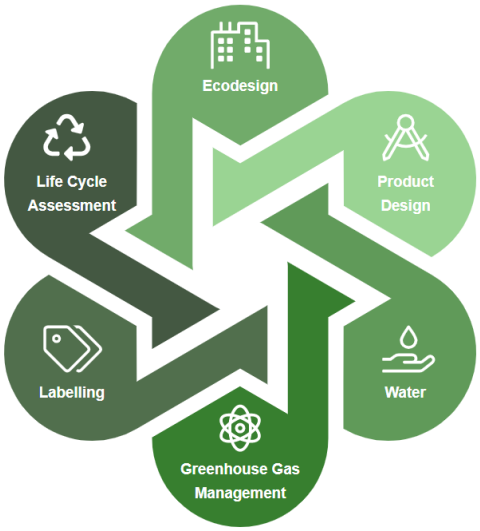
The history of ISO 14001 reflects the ever changing and growing expectations of consumers and citizens in relation to business environmental performance. Prior to the publication of the ISO 14001 Environmental Management Standard, the British Standards Institute published BS 7750 in response to a growing need by organisations that were being asked to demonstrate environmental credentials. BS 7750 laid the foundation for the initial version of ISO 14001 which was published in 1996. The initial ISO 14001 standard set some minimum requirements based on environmental policies and objectives that the organisation needed to define. For the most part, the focus was on pollution control and management of negative impacts on the environment. The next iteration of the 14001 Standard sought to improve the baseline requirements and included more criteria regarding compliance requirements. In addition, organisations had to differentiate between aspects they directly affected, and those which they could influence. Thus, organisations were required to act as 'Change Agents' and as a result, improvements in supply chains started to be seen.

The latest iteration of the ISO 14001 standard encompasses the risk-based approach and allows priority to be given to risks and opportunities relevant to the organisation. When combined with minimum requirements, such as Compliance to legislation and commitments such as the prevention of pollution, an organisation is driven to developing a more comprehensive environmental strategy and action plan.



The ISO 14001 Family of Standards

The ISO 14001 standard sets out general requirements for environmental management, but the standard sits within a family of standards (number ISO 14000) that organisations can use to guide good practice on a range of topics; from greenhouse gas management to design and development of products. Other 14000 standards set out criteria for life-cycle analysis and provide the basis of a common language and terminology for environmental assessment and management worldwide. These can be used in conjunction with the ISO 14001 standard and provide organisations with greater insights and guidance to recognizable industry best practice.



Other standards like ISO 14001 and EMAS

The International Organisation for Standardization (ISO) produces thousands of standards every year covering multiple topics and disciplines. A certain group of those standards known as management system standards are designed to support organisations in delivering products and services which are higher in quality, safer, more secure, more resilient, and environmentally friendly.

These standards are well known such as ISO 9001 (Quality Management), ISO 27001 (Information Security), ISO 14001 (Environmental), ISO 22301 (Business Continuity) and for example the ISO 45001 (Health and Safety).

Many organisations seek to implement and certify multiple management system standards (MSS's). To date, subtle and not so subtle differences in requirements and terminology across MSS's have made such integration difficult.

To make the process of implementing and certifying multiple management systems easier, ISO has produced a common framework for all future ISO MSS's. This common framework is referred to as "Annex SL".

The aim of Annex SL is to ensure all ISO MSS's have the same look and feel, use the same language, terms and definitions and ensure that when a requirement ought to be common to more than one management system standard then it is identically worded.

This benefits organisations that wish to have a single integrated management system covering a number of management system standards.

The standard shares common management system principles with the ISO 9001 quality system standard and others. Organisations may elect to use an existing management system consistent with ISO 9001 as a basis for its environmental management system. It should be understood, however, that the application of various elements of the management system may differ due to different purposes and different interested parties. While quality management systems deal with customer needs, environmental management systems address the needs of a broad range of interested parties and the evolving needs of society for environmental protection.

The environmental management system requirements specified do not need to be established independently of existing management system elements. In some cases, it will be possible to conform to the requirements by adapting existing management system elements.

The achievement of certification to a standard by an independent body, or an award against a recognised framework, provides public recognition that an organisation meets those standards, and can be a useful marketing tool.

In addition to the ISO 14001 standard, there are specific requirements from the following documents that are of importance for environmental management systems and accrediting CBs. This list is to show (but not limited to this) the extent of rule sets that certification bodies and her auditors need to comply to and apply in their day to day work:

- NEN-EN-ISO/IEC ISO 17021-1: Conformity assessment - Requirements for bodies providing audit and certification of management systems Part 1: Requirements.
- ISO/IEC TS 17021-2: Conformity assessment - Requirements for bodies providing audit and certification of management systems Part 2: Competence requirements for auditing and certification of environmental management systems.
- NPR-ISO/IEC TS 17022: Conformity assessment - Requirements and recommendations for content of a third-party audit report on management systems.
- IAF MD 1: Certification of multiple sites based on sampling.
- IAF MD 2: Transfer of Accredited Certification of Management Systems.
- IAF MD 5: Mandatory document for duration of QMS and EMS audits.
- IAF MD 11: Audits of integrated management systems.
- EA-7/04: a clarification of the European co-operation for Accreditation on legal compliance within the ISO 14001 standard.
- Any new guidelines published by the EA and/or IAF related to ISO 14001 certification.

Audit Types and Purpose

Audits are done for a variety of reasons; for example, to check that a process is carried out in accordance with the planned arrangements.

Environmental management system audits may be used to:

- Verify conformance to planned arrangements.
- Identify opportunities for improvement.
- Assess the effectiveness of environmental management systems.
- Assist the selection and monitoring of persons working on behalf of the organisation such as suppliers and contractors.
- Verify compliance with legal and other requirements.
- Determine conformity with ISO 14001 requirements.

Audits play an important role in not just ensuring that the environmental risks associated with routine (normal) and non-routine (abnormal) operations are well managed but also ensuring that those situations that organisations least expect or do not experience that often are equally well managed (emergencies and accidents, for example). The auditor plays a vital role in evaluating an organisation's capability to protect against, reduce the likelihood of occurrence of, prepare for, respond to and recover from disruptive incidents when they occur e.g. fire, flood, leak, spill, malicious damage etc.

First, second- and third-party audits

These terms describe the relationship the auditor has with the organisation being audited.

- First party or internal audit is the term used when the auditor works for the organisation being audited. First party audits are used for internal purposes. The person managing the audit programme will decide the scope of the audit.
- Second party or supplier audit is the term used when the auditor works for the client buying from the auditee. Second party audits are used to help select and monitor suppliers. The audit client will decide the scope of the audit.
- Third party or independent audit is the term used when the auditor works for an independent auditing organisation. For example, those carrying out certification audits. The independent audit body will audit all applicable parts of the organisation's environmental management system and evaluate conformance with all applicable requirements of ISO 14001.

In the end: determining conformity with ISO 14001 or other recognized standard is the primary purpose of a third-party audit. Auditors should remain independent and impartial from the organisation that is paying the certification body to carry out the audit and follow a professional code of conduct.

ISO14001 SUMMARY (for the annex of this document)

None of the first three clauses set out any requirements. Just familiarize yourself with the terminology in Clause 3 as you'll get a bit lost when looking at later clauses if you don't have a basic understanding.

Clause 1. Scope

This clause simply explains that the purpose of the standard is to set out the requirements of an environmental management system to improve environmental performance and its applicability to any organisation of whatever size in any sector.

Clause 2. Normative references

This clause usually lists any additional documents referred to that form part of the standard itself. There are none for ISO 14001.

Clause 3. Terms and definitions

There are many terms and definitions given in the standard, many of which are self-explanatory. Most of them are common to all of the major ISO standards. However, there are a few which are worth highlighting here that are used throughout the standard and more generally with reference to environmental management.

Environment This does not relate to the 'business environment' in which you operate. It refers to the actual physical surroundings in which you operate including air, water, land, natural resources, flora, fauna, humans and the interrelationships between all those.

Environmental aspect This curious term relates to an organisation's activities, products and services that can interact with the environment. So, for example, it could be pollutants released into the air, or hazardous waste you dispose of. The standard also refers to 'significant' environmental aspects. Generally, you can consider an impact is 'significant' if there are legal environmental requirements relating to it.

Environmental impact The impact is the outcome of an aspect. For example, emissions to the air (the aspect) may result in warming (the impact). You may consider 'aspect and impact' to be the equivalent of 'cause and effect'

Environmental performance The environmental management system should ensure that your impacts are measurable. Once you can monitor everything, you are better placed to apply controls to reduce your environmental impact, such as reduced emissions and waste.

Environmental policy This is a formal statement from top management of your intentions relating to your environmental performance. It's normally in writing, brief and outlines your commitment to complying with regulations and aiming for continual improvement.

Environmental management system This is the set of policies, procedures, plans and actions in their entirety that you use to manage environmental aspects, fulfil compliance obligations and address risks and opportunities - and much more. In essence, it's everything that you do in order to achieve ISO 14001 certification.

Life cycle This relates to consecutive and interlinked stages of a product or service system, from the beginning to end. This includes raw materials, design, production, transportation, use, end-of-life treatment and disposal.

Documented Information Information required to be controlled and maintained by an organisation and the medium on which it is contained. Documented information can be in any format and media, and from any source. Documented information can refer to; the environmental management system, including related processes; information created in order for the organisation to operate; evidence of results achieved (can be referred to as records).Note: Documented information can be in any format and media, and from any source. Documented information can refer to; the environmental management system, including related processes; information created in order for the organisation to operate; evidence of results achieved (can be referred to as records). Documented information can be in any format and media, and from any source. Documented information can refer to; the environmental management system, including related processes; information created in order for the organisation to operate; evidence of results achieved (can be referred to as records).

As from clause 4 the formal requirements are set in the standard for the EMS.

Clause 4. Context

Section 4 asks the organisation to start by understanding the organisation and its context when the organisation develop its environmental management system (EMS). It asks the organisation to consider the external and internal issues that are relevant to the organisation's purpose and to think about the influence these issues could have on its EMS and the results it intends to achieve.

It also asks the organisation to identify the interested parties that are relevant to the EMS and to consider the compliance obligations that they expect the organisation to meet. Why? Because the EMS will need to be able to manage all of these influences and obligations. Once this is considered you're ready to clarify and define the scope of the EMS and to begin its development.

Interested parties could include Employees, Contractors, Clients/Customers, Suppliers, Regulators, Shareholders, Neighbours, Non-Governmental Organisations (NGOs), Parent organisations, etcetera.

Clause 5. Leadership

Section 5 asks the organisation's top management to provide leadership for its EMS by accepting responsibility for it, by showing that they support it, and by providing resources. It also expects them to ensure that an environmental policy is formulated, that environmental objectives are established,

that compliance obligations are acknowledged, that environmental aspects and impacts are considered, and that EMS roles, responsibilities, and authorities are assigned.

Clause 6. Planning

Section 6 starts by asking the organisation to develop a process to consider the risks that could affect the organisation's EMS. It then asks the organisation to use this risk planning process to figure out how to address your context, to handle your interested parties, to meet your compliance obligations, to deal with your significant environmental aspects and impacts, and to manage your environmental risks and opportunities.

And once you've done all of this it expects the organisation to define actions to address your significant environmental aspects, your compliance obligations, and your risks and opportunities. Then, to make sure that all of these actions will actually be carried out, it asks the organisation to build them into the EMS processes.

While this is a lot of planning, you're not done yet. Section 6 also expects the organisation to set environmental objectives at all relevant levels and for all relevant functions, to develop actions to achieve these objectives, and then to figure out how you're going to integrate all of these actions into the organisation's processes.

Clause 7. Support

Section 7 asks the organisation to support the EMS by providing resources, by ensuring the people are competent, by making them aware of their EMS responsibilities, by controlling EMS communications, and by managing EMS documents and records (documented information).

In this context, it asks the organisation to start by figuring out how extensive your documentation should be. Once you've figured this out, it asks the organisation to select, include, and control all of the documents and records that the EMS needs.

Clause 8. Operations

Section 8 asks the organisation to establish the EMS processes and to control how they operate. It asks the organisation to plan how you're going to implement and control the processes that the organisation need in order to meet EMS requirements and in order to implement the actions that were previously built into these processes (in section 6).

It asks the organisation to plan how you're going to implement and control the actions that must be taken in order to meet your compliance obligations, to achieve your environmental objectives, to deal with your significant environmental aspects, and to manage the risks and opportunities that could influence your environmental performance.

Finally, it asks the organisation to prepare for potential emergency situations and to establish a procedure to respond to these situations.

Clause 9. Evaluation

Section 9 asks the organisation to monitor, measure, analyze, and evaluate the organisation's environmental performance and compliance and to audit the EMS at planned intervals. It also asks the organisation to carry out management reviews. It asks the organisation to review the suitability, adequacy, and effectiveness of the EMS, to generate appropriate outputs, and to document your results.

Clause 10. Improvement

Section 10 asks the organisation to identify opportunities and to take all necessary actions to improve the EMS. It asks the organisation to control nonconformities, to take corrective actions, and to enhance the suitability, adequacy, and effectiveness of the EMS.

Developments

Developments regarding private assurance and in particular the certification of environmental management systems can take place at different levels:

- Standards for management systems.
- Legal and other requirements that organizations must meet.
- Guidelines for conducting certification audits.

Standards for management systems

All ISO standards are reviewed in a five-year cycle. This review determines whether the standard is reconfirmed for a period; will expire; or need to be revised/amended. The first version of the ISO 14001 standard was published in 1996. It has been revised twice (2006 and 2015). The review of ISO 14001:2015 has been slightly delayed. New versions will be released in the future, they are not expected in the near future.

Legal and other requirements that organizations must meet

Legal requirements related to the environment can relate to the production process and the associated risks as well as to the products that an organization puts on the market. The legal requirements for both angles are expected to become increasingly strict. In addition, organizations are increasingly confronted with requirements that other parties (customers, investors, insurers) also impose on both the environmental impact of products/services that are supplied and the way in which they are produced.

Guidelines for conducting certification audits

Guidelines are continuously adapted by IAF (International Accreditation Forum) based on experience in practice. Based on the positive experiences gained with the application of remote auditing techniques during the covid-19 crisis, this technique will also be applied more structurally in the future. Guidelines are also expected for this subject in the near future.

Web and public information used from:

www.sccm.nl

www.rva.nl

www.ukas.org

www.lrqa.com

www.lrqa.nl

www.pecb.com

www.iaf.nu

www.ec.europa.eu

www.iso.org

www.spedan.co.uk

www.dnvgl.com

https://european-accreditation.org

Annex 2 Self assessment questionnaire

Subject	Questions	Answer*
Goals	1. Has the company explicitly included environmental protection in its objectives?	Agree 1 – 2 – 3 – 4 Disagree
	2. Has the company explicitly included compliance with legal requirements in its objectives?	Agree 1 – 2 – 3 – 4 Disagree
	3. Is everyone really motivated to achieve these goals?	Agree 1 – 2 – 3 – 4 Disagree
System	4. Has the company taken measures that can reasonably be expected to lead to environmental protection?	Agree 1 – 2 – 3 – 4 Disagree
	5. Is it properly arranged that the environmental risks are adequately identified, analyzed and where necessary mitigated?	Agree 1 – 2 – 3 – 4 Disagree
	6. Is the degree of internal control in line with the company's risk profile?	Agree 1 – 2 – 3 – 4 Disagree
	7. Are the relevant procedures clearly described?	Agree 1 – 2 – 3 – 4 Disagree
	8. Are tasks and responsibilities in the field of environmental protection clearly and structurally defined?	Agree 1 – 2 – 3 – 4 Disagree
	9. Is there an effective internal policy of punishment and reward for compliance with procedures and rules?	Agree 1 – 2 – 3 – 4 Disagree
	10. Is the internal control of the implementation well organised? For instance with a separate department with trained people who check whether things are going well and have the powers to intervene?	Agree 1 – 2 – 3 – 4 Disagree
Practice	11. Are the measures and procedures, as detailed on paper, properly implemented and are the necessary facilities present and working?	Agree 1 – 2 – 3 – 4 Disagree
	12. Does the company have an adequate internal control process to determine this?	Agree 1 – 2 – 3 – 4 Disagree

	13. Is the company culture focused on doing the right things with regard to the environment? 14. Are ineffective procedures being discussed and adjusted where necessary? 15. Does the company take its own agreements, procedures and rules seriously? 16. Has the company budgeted resources to achieve the objectives regarding environmental protection? 17. Is risk management with regard to the environment in order? 18. How does the company perform in the field of environmental protection? (Compared to similar companies, compared to past) 19. Is the company's environmental performance evaluated at the highest level? 20. Are lessons learned from this evaluation for improvement and are they actually followed up?	Agree 1 – 2 – 3 – 4 Disagree Agree 1 – 2 – 3 – 4 Disagree Agree 1 – 2 – 3 – 4 Disagree Agree 1 – 2 – 3 – 4 Disagree Agree 1 – 2 – 3 – 4 Disagree Agree 1 – 2 – 3 – 4 Disagree Agree 1 – 2 – 3 – 4 Disagree
Outcome	21. Is risk management with regard to the environment in order? 22. How does the company perform in the field of environmental protection? (Compared to similar companies, compared to past) 23. Is the company's environmental performance evaluated at the highest level? 24. Are lessons learned from this evaluation for improvement and are they actually followed up?	Agree 1 – 2 – 3 – 4 Disagree Agree 1 – 2 – 3 – 4 Disagree Agree 1 – 2 – 3 – 4 Disagree Agree 1 – 2 – 3 – 4 Disagree

*please give your answer in this 4 points scale.

Annex 3 Levels of private assurance

Level	Description
Excellent	Company functions well on the relevant points. The supervisor(s) have a lot of confidence in the structure of the system and the extent to which the employees are connected to the system. Everyone within the organization acts proactively, adequately and professionally with regard to the risks of major accidents and environmental damage in a systematic and unambiguous manner. There is nothing substantial to improve on at the system level.
Good	Company functions well on the relevant points, all processes run smoothly. The only point for improvement is the degree of ownership of the system, or the degree of proactivity of the employees.
Reasonable	Company functions more or less sufficiently on the relevant points, all processes are running. However, improvements are certainly needed in the design or implementation of the system. The control loop sometimes falters, especially on the check and act functions of the Plan-Do-Check-Act cycle.
Moderate	The company functions sufficiently on the relevant points, all processes are running. However, improvements are certainly needed in the design or implementation of the system. Control loop frequently falters. Plan-Do-Check-Act cycle is not functioning.
Poor	There is absolutely no internal control system in place and working. There is also no certainty that people are doing the right things based on the corporate culture. The approach seems to be: It goes well as long as it goes well, people are indifferent. There is strong doubt whether the organization can improve on its own.