



Exam Preparation Guide

ISO 14001 Lead Auditor

GENERAL

The objective of the “PECB Certified ISO 14001 Lead Auditor” exam is to ensure that the candidate has the necessary competence to: perform an environmental management system (EMS) audit in compliance with the ISO 14001 standard requirements; manage an audit team by applying widely recognized audit principles, procedures and techniques; and, lastly, plan and carry out internal and external audits in compliance with ISO 19011 and ISO/IEC 17021-1 certification processes.

The ISO 14001 Lead Auditor exam is intended for:

- Auditors seeking to perform and lead environmental management system (EMS) audits
- Managers or consultants seeking to master the environmental management system audit process
- Individuals responsible to maintain conformity with EMS requirements in an organization
- Technical experts seeking to prepare for the environmental management system audit
- Expert advisors in environmental management

The exam covers the following competency domains:

- **Domain 1:** Fundamental principles and concepts of an environmental management system (EMS)
- **Domain 2:** Environmental management system (EMS)
- **Domain 3:** Fundamental audit concepts and principles
- **Domain 4:** Preparing an ISO 14001 audit
- **Domain 5:** Conducting an ISO 14001 audit
- **Domain 6:** Closing an ISO 14001 audit
- **Domain 7:** Managing an ISO 14001 audit program

The content of the exam is divided as follows:

Domain 1: Fundamental principles and concepts of an environmental management system (EMS)

Main objective: Ensure that the candidate understands and is able to interpret ISO 14001 principles and concepts

Competencies

1. Ability to understand and explain the operations of the ISO organization and the development of environmental management standards
2. Ability to identify, analyze and evaluate the environmental management compliance requirements for an organization
3. Ability to explain and illustrate the main concepts in environmental management
4. Ability to identify and analyze environmental aspects, vulnerability, threats, impacts and risk

Knowledge statements

1. Knowledge of the application of the seven ISO management principles in environmental management
2. Knowledge of the main standards in environmental management
3. Knowledge of the different sources of environmental management requirements for an organization including: laws, regulations, international and industry standards, contracts, market practices and internal policies
4. Knowledge of the main environmental management concepts and terminology as described in ISO 14001.
5. Knowledge of environmental aspects, vulnerability, threats, impacts, risks and related controls

Domain 2: Environmental management system (EMS)

Main objective: Ensure that the candidate understands, is able to interpret, and identify requirements for an environmental management system based on ISO 14001

Competencies	Knowledge statements
<ol style="list-style-type: none"> 1. Ability to identify, understand, classify and explain the requirements of the clauses of ISO 14001 2. Ability to understand and explain the components of an environmental management system based on ISO 14001 and its principal processes 3. Ability to identify and interpret corrective and preventive actions within the EMS context 	<ol style="list-style-type: none"> 1. Knowledge of the ISO 14001 requirements presented in clauses 4 to 10 2. Knowledge of the concepts, principles and terminology related to management systems and the "Plan-Do-Check-Act" (PDCA) model 3. Knowledge of the corrective and preventive actions within the EMS context 4. Knowledge of the concept of continual improvement and its application to an EMS

Domain 3: Fundamental audit concepts and principles

Main objective: Ensure that the candidate understands, is able to interpret, and apply the main concepts and principles related to an EMS audit

Competencies	Knowledge statements
<ol style="list-style-type: none"> 1. Ability to understand, explain and illustrate the application of the audit principles in the context of an ISO 14001 audit 2. Ability to identify and judge situations that would discredit the professionalism of the auditor and the PECB Code of Ethics 3. Ability to identify and evaluate ethical problems taking into account the obligations related to the audit client, auditee and law enforcement or regulatory authorities 4. Ability to explain, illustrate and apply the audit evidence approach in the context of an ISO14001 audit 5. Ability to explain and compare the types and characteristics of evidence 6. Ability to determine and justify what type of evidence and how much evidence will be required in the context of a specific EMS audit mission 7. Ability to determine and evaluate the level of materiality and apply the risk-based approach during the different phases of an ISO 14001 audit 8. Ability to judge the appropriate level of reasonable assurance needed for a specific ISO 14001 audit mission 	<ol style="list-style-type: none"> 1. Knowledge of the main audit concepts and terminology as described in ISO 19011 2. Knowledge of the differences between first party, second party and third party audits 3. Knowledge of the following audit principles: integrity, fair presentation, due professional care, professional judgment, professional skepticism, confidentiality and independence 4. Knowledge of professional responsibility of an auditor and the PECB Code of Ethics 5. Knowledge of evidence based approach in an audit 6. Knowledge of the different types of evidences: physical, mathematical, confirmative, technical, analytical, documentary and verbal 7. Knowledge of the quality of audit evidences and the factors that will influence them 8. Knowledge of the risk-based approach in an audit and the different types of risk related to audit activities. 9. Knowledge of the concept of materiality and its application in an audit 10. Knowledge of the concept of reasonable assurance and its applicability in an audit

Domain 4: Preparing an ISO 14001 audit

Main objective: Ensure that the candidate is able to prepare an EMS audit

Competencies	Knowledge statements
<ol style="list-style-type: none"> 1. Ability to understand and explain the steps and activities to prepare an EMS audit taking in consideration the specific context and conditions of the audit mission 2. Ability to understand and explain the roles and responsibilities of the audit team leader, audit team members and technical experts 3. Ability to determine, evaluate and confirm the audit objectives, the audit criteria and the audit scope for a specific ISO 14001 audit mission 4. Ability to conduct a feasibility study of an audit in the context of a specific ISO 14001 audit mission 5. Ability to explain, illustrate and define the characteristics of the audit terms of engagement and apply the best practices to establish a first contact with an auditee in the context of a specific ISO 14001 audit mission 	<ol style="list-style-type: none"> 1. Knowledge of the main responsibilities of the audit team leader and audit team members 2. Knowledge of the roles and responsibilities of technical experts in an audit 3. Knowledge of the definition of audit objectives, audit scope and audit criteria 4. Knowledge of the difference between the EMS scope and the audit scope 5. Knowledge of the elements to review during the feasibility study of an audit 6. Knowledge of the characteristics of audit terms of engagement and the best practices to establish a first contact with an auditee

Domain 5: Conducting an ISO 14001 audit

Main objective: Ensure that the candidate can efficiently conduct the EMS audit

Competencies	Knowledge statements
<ol style="list-style-type: none"> 1. Ability to organize and conduct the opening meeting in the context of a specific ISO 14001 audit mission 2. Ability to conduct a stage 1 audit in the context of a specific ISO 14001 audit mission and taking into account the documentation review conditions and criteria 3. Ability to conduct a stage 2 audit in the context of a specific ISO 14001 audit mission by applying the best practices of communication to collect the appropriate evidence and taking into account the roles and responsibilities of all people involved 4. Ability to explain, illustrate and apply statistical techniques and main audit sampling methods 5. Ability to gather appropriate evidence from the available information during an audit and evaluate it objectively 6. Ability to prepare, open, conduct and close an interview approach in a/an XXMS audit 	<ol style="list-style-type: none"> 1. Knowledge of the objectives and the content of the opening meeting of an audit 2. Knowledge of the difference between stage 1 audit and stage 2 audit 3. Knowledge of stage 1 audit requirements, steps and activities 4. Knowledge of the documentation review criteria and documentation requirements stated in ISO 14001 5. Knowledge of stage 2 audit objectives, requirements, steps and activities 6. Knowledge of best practices of communication during an audit 7. Knowledge of the roles and responsibilities of guides and observers during an audit 8. Knowledge of the conflict resolution techniques 9. Knowledge of evidence collection procedures: observation, documentation review, interviews, analysis and technical verification 10. Knowledge of evidence analysis procedures: corroboration and evaluation 11. Knowledge of main concepts, principles and statistical techniques used in an audit 12. Knowledge of the main audit sampling methods and their characteristics 13. Knowledge of preparing interview questions, closing an interview and evaluation

Domain 6: Closing an ISO 14001 audit

Main objective: Ensure that the candidate is able to conclude an EMS audit and conduct audit follow-up activities

Competencies	Knowledge statements
<ol style="list-style-type: none"> 1. Ability to explain and apply the evaluation process of evidences to draft audit findings and prepare audit conclusions. 2. Understand, explain and illustrate the different levels of conformity and the concept of the benefit of the doubt 3. Ability to report appropriate audit observations in order to help an organization improve an EMS with respect to audit rules and principles 4. Ability to complete audit working documents and conduct a quality review of an ISO 14001 audit 5. Ability to draft audit conclusions and present them to the management of the audited organization 6. Ability to organize and conduct an audit closing meeting 7. Ability to write an ISO 14001 audit report and justify a certification recommendation 8. Ability to conduct the activities following an initial audit including the evaluation of action plans, follow-up audits, surveillance audits and recertification audits 	<ol style="list-style-type: none"> 1. Knowledge of the evaluation process of evidences to draft audit findings and prepare audit conclusions 2. Knowledge of the differences and the characteristics between the concepts of conformity, minor nonconformity, major nonconformity, anomaly and observation. 3. Knowledge of the guidelines and best practices to write nonconformity report 4. Knowledge of the guidelines and best practices to draft and report audit observation 5. Knowledge of the principle of the benefit of the doubt and its application in the context of an audit 6. Knowledge of the guidelines and best practices to complete audit working documents and perform a quality review of an audit 7. Knowledge of the guidelines and best practices to present audit findings and conclusions to the management of an audited organization 8. Knowledge of the possible recommendations that an auditor can issue in the context of a certification audit and the certification decision process 9. Knowledge of the guidelines and best practices to evaluate action plans 10. Knowledge of follow-up audits, surveillance audits and recertification audit requirements, steps and activities 11. Knowledge of the conditions for modification, extension, suspension or withdrawal of a certification for an organization

Domain 7: Managing an ISO 14001 audit program

Main objective: Ensure that the candidate understands how to establish and manage an EMS audit program

Competencies	Knowledge statements
<ol style="list-style-type: none"> 1. Ability to understand and explain the establishment of an audit program and the application of the PDCA model 2. Ability to understand and explain the implementation of an ISO 14001 audit program (first party, second party and third party) 3. Ability to understand and explain the responsibilities to protect the integrity, availability and confidentiality of audit records 4. Ability to understand the requirements related to the components of the management system of an audit program as environmental management, record management, and complaint management 5. Ability to understand the evaluation of the efficiency of the audit program by monitoring the performance of each auditor, each team and the entire certification body 6. Ability to demonstrate the application of the personal attributes and behaviors associated with professional auditors 	<ol style="list-style-type: none"> 1. Knowledge of the application of the PDCA model in the management of an audit program 2. Knowledge of the requirements, guidelines and best practices regarding audit resources, procedures and policies 3. Knowledge of the types of tools used by professional auditors 4. Knowledge of the requirements, guidelines and best practices regarding the management of audit records 5. Knowledge of the application of the concept of continual improvement to the management of an audit program 6. Knowledge of the particularities to implement and manage a first, second or third party audit program 7. Knowledge of the management of combined audit activities 8. Knowledge of the concept of competency and its application to auditors 9. Knowledge of the personal attributes and behavior of a professional auditor

Based on the above mentioned domains and their relevance, 12 questions are included in the exam, as summarized in the following table:

		Level of understanding (Cognitive/Taxonomy) required						
		Points per question	Questions that measure comprehension, application and analysis	Questions that measure synthesis and Evaluation	Number of questions per competency domain	% of test devoted to each competency domain	Number of points per competency domain	% of points per competency domain n
Competency domains	Fundamental principles and concepts of the environmental management system (EMS)	10	X		1	8.33	10	13.33
	Environmental management system (EMS)	5	X		3	25.00	15	20.00
		5	X					
		5	X					
	Fundamental audit concepts and principles	5	X		3	25.00	15	20.00
		5	X					
		5	X					
	Preparation of an ISO 14001 audit	5		X	1	8.33	5	6.67
	Conducting an ISO 14001 audit	5		X	2	16.67	15	20.00
		10		X				
	Closing an ISO 14001 audit	10		X	1	8.33	10	13.33
	Managing an ISO 14001 audit program	5		X	1	8.33	5	6.67
Total points		75						
Number of questions per level of understanding			7	5				
% of test devoted to each level of understanding (cognitive/taxonomy)			58.33	41.67				

The exam passing score is **70%**.

After successfully passing the exam, candidates will be able to apply for the “PECB Certified ISO 14001 Lead Auditor” credential depending on their level of experience.

General Information on the Exam

Candidates are required to arrive/be present at least 30 minutes before the exam starts. Candidates who arrive late will not be given additional time to compensate for the late arrival and may not be allowed to sit for the exam.

Candidates are required to bring a valid identity card (a national ID card, driver's license, or passport) and show it to the invigilator.

If requested on the day of the exam (paper-based exams), additional time can be provided to candidates taking the exam in a non-native language, as follows:

- 10 additional minutes for Foundation exams
- 20 additional minutes for Manager exams
- 30 additional minutes for Lead exams

PECB Exam Format and Type

1. Paper-based: Exams are provided on paper, where candidates are not allowed to use anything but the exam paper and a pen. The use of electronic devices, such as laptops, tablets, or phones, is not allowed. The exam session is supervised by a PECB approved Invigilator at the location where the Reseller has organized the training course.

2. Online: Exams are provided electronically via the PECB Exams application. The use of electronic devices, such as tablets and cell phones, is not allowed. The exam session is supervised remotely by a PECB Invigilator via the PECB Exams application and an external/integrated camera.

For more detailed information about the online format, please refer to the [PECB Online Exam Guide](#).

PECB exams are available in two types:

1. Essay-type question exam
2. Multiple-choice question exam

This exam comprises essay-type questions. They are used to determine and evaluate whether a candidate can clearly answer questions related to the defined competency domains. Additionally, problem-solving techniques and arguments that are supported with reasoning and evidence will also be evaluated.

The exam is open book and is not intended to measure memorizing or recalling information. It aims to evaluate candidates' comprehension, analytical skills, and applied knowledge. Therefore, candidates are required to provide logical and convincing answers and explanations in order to demonstrate that they have understood the content and the main concepts of the competency domains.

Since the exam is "open book," candidates are authorized to use the following reference materials:

- A hard copy of ISO 14001 standard
- Training course materials (accessed through PECB Exams app and/or printed)
- Any personal notes made by the candidate during the training course (accessed through PECB Exams app and/or printed)
- A hard copy dictionary

Any attempts to copy, collude, or otherwise cheat during the exam session will automatically lead to failure of the exam.

PECB exams are available in English and other languages. For the availability of the exam in a particular language, please contact examination@pecb.com.

Note: PECB will progressively transition to multiple-choice exams. They will also be open book and comprise scenario-based questions that will allow PECB to evaluate candidates' knowledge, abilities, and skills to use information in new situations (apply), draw connections among ideas (analyze), and justify a stand or decision (evaluate). All PECB multiple-choice exams have one question and three alternatives, of which only one is correct.

For specific information about exam types, languages available, and other details, visit the [List of PECB Exams](#).

Receiving the Exam Results

Exam results will be communicated via email. The only possible results are *pass* and *fail*; no specific grade will be included.

- The time span for the communication starts from the exam date and lasts three to eight weeks for essay type exams and two to four weeks for multiple-choice paper-based exams
- For online multiple-choice exams, candidates receive their results instantly

Candidates who successfully complete the exam will be able to apply for one of the credentials of the respective certification scheme.

For candidates who fail the exam, a list of the domains where they have performed poorly will be added to the email to help them prepare better for a retake.

Candidates that disagree with the results may request for a re-evaluation by writing to results@pecb.com within 30 working days of receiving the results. Re-evaluation requests received after 30 days will not be processed. If candidates do not agree with the results of the reevaluation, they have 30 working days from the date when they received the reevaluated exam results to file a complaint through the [PECB Ticketing System](#). Complaints received after 30 days will not be processed.

Exam Retake Policy

There is no limit on the number of times that a candidate may retake an exam. However, there are certain limitations in terms of the allowed time frames between exam retakes.

- If a candidate does not pass the exam on the 1st attempt, they must wait 15 days from the initial date of the exam for the next attempt (1st retake). Retake fees apply.

Note: *Candidates who have completed the training course but failed the exam are eligible to retake the exam once for free within a 12-month period from the initial date of the exam.*

- If a candidate does not pass the exam on the 2nd attempt, they must wait three months after the initial date of the exam for the next attempt (2nd retake). Retake fees apply.

Note: *For candidates that fail the exam in the 2nd retake, PECB recommends them to attend a training course in order to be better prepared for the exam.*

- If a candidate does not pass the exam on the 3rd attempt, they must wait six months after the initial date of the exam for the next attempt (3rd retake). Retake fees apply.
- After the 4th attempt, the waiting period for further retake exams is 12 months from the date of the last attempt. Retake fees apply.

To arrange exam retakes (date, time, place, costs), candidates need to contact the PECB Reseller/Distributor who has initially organized the session.

Reschedule the Exam

For any changes with regard to the exam date, time, location, or other details, please contact examination@pecb.com.

Closing a Case

If a candidate does not apply for the certificate within three years, their case will be closed. Candidates whose case has been closed due to the expiration of the certification period have the right to request to reopen their case. However, PECB will no longer be responsible for any changes in the conditions, standards, policies, candidate handbook, or exam preparation guide that were applicable before the case was closed. A candidate requesting their case to reopen must do so in writing and pay the required fee.

A significant component of a successful and respected professional certification credential is maintaining the security and confidentiality of the exam. PECB relies upon the ethical behavior of certificate holders and applicants to maintain the security and confidentiality of PECB exams. Any disclosure of information about the content of PECB exams indicates violation of PECB's Code of Ethics. PECB will take action against individuals who violate PECB Policies and the Code of Ethics. These actions include permanently barring individuals from pursuing PECB credentials and revoking the awarded credentials. PECB will also pursue legal action against individuals or organizations who infringe upon its copyrights, proprietary rights, and intellectual property.

Sample Exam Questions

Question 1: Evidence in an audit

For each of the following clauses of ISO 14001, please provide at least two different evidences that would be acceptable to ensure conformity to the clause.

Clause 9.2.2 Internal audit programme.

Possible answer:

- *Internal audit programme established*
- *Internal audit reports*

Question 2: Identification and management of environmental aspects

Please determine the environmental aspects associated with the following activity, indicate its impact and select at least three mitigation measures to treat the environmental aspect.

Possible answer:

Activity	Aspect (s)	Impact (s)	Mitigation measures
<i>Example: Printing documents</i>	<i>Use of electricity</i> <i>Use of paper</i>	<i>Depletion of natural resources</i>	<i>Research opportunities to provide paperless office technology</i> <i>Initiate an awareness program for the staff to minimize the usage of printing</i> <i>Establish an environmental objective to replace printer operation by solar energy</i>



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