# Collection of Decisions, IMS Explanations and Rulebook with Current Focus on

# 决议汇编与整合管理体系说明规则

## ISO 9001:2015
## ISO 14001:2015
## ISO 45001:2018
## ISO 50001:2018




Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

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Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

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Customer Service Center: A-4020 Linz, Am Winterhafen 1
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www.qualityaustria.com E-Mail: office@qualityaustria.com

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Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
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Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

# 1. General —般说明

Building on the previous collections of decisions on ISO 9001, ISO 14001, ISO 45001 and ISO 50001, this document is intended to represent a consolidation to expand on new findings and additional findings and decisions of other relevant standards. Furthermore, findings from calibrations and internal training are incorporated into this collection of decisions. The aim is to create and update an integrated document.

This document is open for possible extension to other relevant standards such as ISO 27001, ISO 37001, ISO 37301, or others.

Authors of the specific previous versions were:
Anni Koubek, Eckehard Bauer, Klaus Weitmann, Wolfgang Hackenauer and Axel Dick.

Authors of this edition are (in alphabetical order):
Andreas Ackerl
Eckehard Bauer
Axel Dick
Wolfgang Hackenauer
Anni Koubek

The collection of decisions should be used as a supplement to the checklists, where needed. Above all, it is about the requirements that are not always quite clear, and which cannot be easily interpreted even with the help of the checklists.

There are general and overarching topics such as the thought model "Doing the Right Things Right", a reminder to the formulation of nonconformities. The specifics of each standard such as development, environmental condition, life cycle assessment, consultation and participation etc. are discussed. Current political and legal developments are highlighted, as these become new external context issues. In addition to the requirements part, an attempt is made to provide further information (knowledge) relevant to action and decision-making with the part "Annex with practical guidance and examples" and the "Informative part for audit preparation".

The authors hope that this collection of decisions will be helpful in audit and training practice, wish you a thought-provoking read and look forward to your feedback so that this collection of decisions can be continually updated.

If you have any questions or example, please send them to Axel Dick, axel.dick@qualityaustria.com.

在先前发布的 ISO 9001、ISO 14001、ISO 45001 和 ISO 50001 决策汇编基础上，本文件旨在整合内容，进一步扩展新的发现以及其他相关标准的新增发现与决策。此外，还整合了校准会议和内部培训中的相关结论，力求形成一个统一更新的文件。

本文件也可扩展适用于其他相关标准，例如 ISO 27001、ISO 37001、ISO 37301 等。

前几版文件的作者包括：

Anni Koubek、Eckehard Bauer、Klaus Weitmann、Wolfgang Hackenauer 和 Axel Dick。

本版本的作者（按字母顺序排列）为：

Andreas Ackerl


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

Eckehard Bauer
Axel Dick
Wolfgang Hackenauer
Anni Koubek

本决策汇编可作为审核检查清单的补充材料使用，尤其适用于那些不太明确、即使借助检查清单也难以清晰解读的要求。

文中包含一些通用性和跨标准主题，例如"把正确的事做对"这一思维模型，以及关于不符合项措辞的提醒。同时也涵盖各标准的具体要求，如开发、环境条件、生命周期评估、协商与参与等内容。文件还重点指出当前的政治与法律发展趋势，因为这些已成为外部环境的重要因素。

除了要求部分，文件还尝试通过"附录：实务指导与案例"以及"审核准备的信息部分"提供更多有助于行动和决策的信息与知识。

我们希望本决策汇编能为审核与培训实践带来帮助，并祝您阅读有所启发。如您有任何意见或示例，欢迎反馈，以便我们不断更新完善本文件。

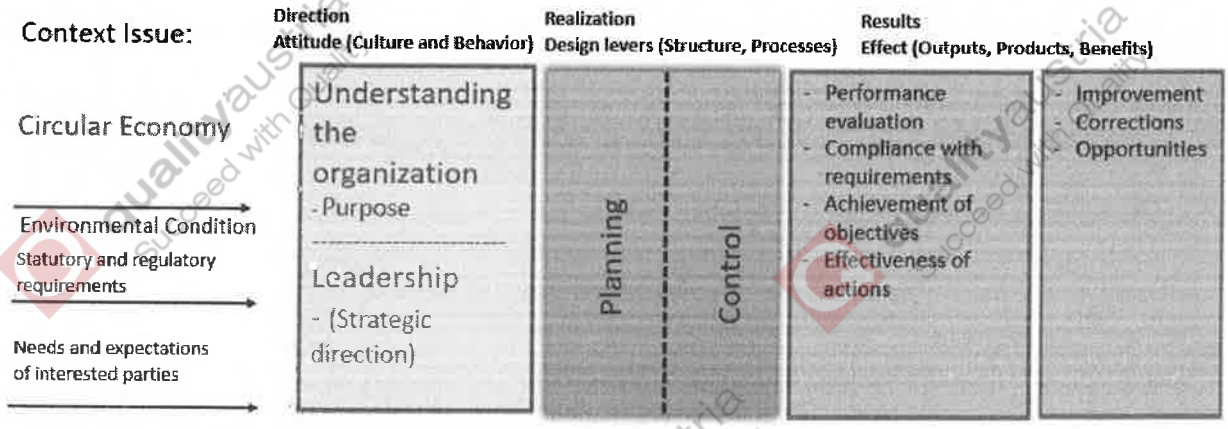
如有问题或案例提供，请联系 Axel Dick，邮箱：axel.dick@qualityaustria.com。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## 2. Thought Model "Doing the Right Things Right"思维模型："把正确的事做对"

The basic structure of management system standards can be summarized at a glance in the following thought model by Wolfgang Hackenauer and explained by the associated questions:

Thought Model: Doing the Right Things Right




1. Why is it a context issue (purpose, relation to the strategic direction)?
2. What data and information on the context issue are monitored and evaluated?
3. What knowledge on the issue is already available in the organization, and what is still missing?
4. What should be achieved (relation to the strategic objective – if possible, measurable)?
5. What are the identified risks and opportunities related to the issue?
6. What are the legal requirements (compliance obligations) to be observed on this issue?
7. Are there any needs and expectations of interested parties on this issue?
8. What actions (projects) are planned on the issue (actions to achieve the objectives and actions to address risks and opportunities)?
9. What resources and competences are needed for the processing of actions?
10. What is the procedure in the case of changes to plans (reference to 6.3 of ISO 9001:2015 – purpose and possible consequences of the changes on the intended results, resources, competence requirements etc.)?
11. How is the monitoring of objectives and the follow-up of actions carried out (also reference to the management review, action plans, ...)?

These questions could be completely discussed, for example in relation to the context issue of circular economy in order to gain an overall picture of the organization and to be able to provide feedback and specific hints in the audit, and especially in the audit report.

**Tip**: These focal points on relevant context issues could be coordinated and planned as special audit objectives in the course of a planning workshop with the organization prior to the audit. This approach has proven very successful with large customers or multisite customers, but requires a certain amount of preparation and follow-up, which should be taken into account in the calculation.

管理体系标准的基本结构可以通过 Wolfgang Hackenauer 提出的以下思维模型一目了然，并通过相关提问加以解释：


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

1. 为什么这是一个组织情境问题？（其目的、与战略方向的关系是什么？）
2. 关于该情境问题，组织监控和评估了哪些数据与信息？
3. 组织对该问题已掌握了哪些知识？还有哪些知识尚缺？
4. 应达成的目标是什么？（与战略目标的关联——若可衡量，则应量化）
5. 与该问题相关的风险与机遇有哪些？
6. 应遵循的法律法规要求（合规义务）有哪些？
7. 利益相关方在该问题上的需求与期望是什么？
8. 针对该问题制定了哪些行动（项目）？（为达成目标及应对风险与机遇的行动）
9. 实施这些行动所需的资源与能力有哪些？
10. 若计划发生变更，处理流程如何？（参见 ISO 9001:2015 第 6.3 条——变更的目的与对预期结果、资源、能力要求等的影响）
11. 如何对目标实现情况进行监控并跟进相关行动？（也应参考管理评审、行动计划等）
12.

例如，这些问题可被全面用于审视"循环经济"这一情境问题，从而全面了解组织状况，并能在审核中，特别是在审核报告中，提出有针对性的反馈与建议。

**提示**：这些重点情境议题可在审核前，通过与组织开展的计划研讨会，作为专项审核目标加以规划与协调。该方法在面对大型客户或多场所客户时效果显著，但需要一定的准备与后续工作，应在审核工时预算中予以考虑。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

# 3. Scope 适用范围

### What does the term "scope" mean in standards?

In ISO 9001, the term "scope" is used twice: namely the "scope of ISO 9001" (Clause 1 of the standard). There, the focus is on what the standard can be applied to: for example, to provide products and services that meet the requirements, and to enhance customer satisfaction.
The second time the standard refers to "scope" in clause 4.3, "scope of the quality management system". The organization shall determine the boundaries and applicability of the quality management system.
In the German translation of ISO/IEC 17021 the term scope is used as "applicability" and refers to the "scope of certification" (in German: "*Anwendungsbereich*" und "*Geltungsbereich*"). The wording and meaning of "*Geltungsbereich*" is not used in the ISO 9001.

### Example:

It is important to ensure consistency here. For example: the audit report states that "design is not applicable", but the certificate states "Design and manufacturing of..." as an activity. Consistency must be ensured between the scope of the management system and the scope of the certificate.

### Tip:

Ideally, the organization has already defined the scope for the feasibility check; however, there should be clarity about the scope in the Stage 1 Audit at the latest.

### What shall be considered for Corporate Groups in terms of scope?

In the audit, an auditor not only has to observe the **requirements of the management system**, but also those for the **certification process**. Above all, the requirements of IAF MD1 must be adhered to, as well as the **quality**austria Regulation RE_27_01_074e Certification of multi-site organizations.

The scope or other references on the certificates must make it clear that the certified activities are performed by the sites listed on the certificate (or the Annex thereto). If activities of a site cover only part of the scope of the organization, the (main) certificate shall include the part of the site.

### Can the scope be restricted to just one product or product line?

Basically, yes; the scope may be limited to a single product or service "XY", and the number of employees concerned is used for the minimum time regulation. The client organization shall document the scope of the management system and meet all applicable standard requirements. Since many departments of the organization are concerned in order to meet all requirements, the question is whether it makes sense to restrict certification to just one product. In this case, the quality management organization that provides the product or service "XY" is being certified.


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

**How can a very small organization demonstrate that the context and requirements of interested parties have been taken into account when determining the scope?**

The key question is whether the influences of these important factors are effectively reflected in the system. What is done within the organization, what is carried out externally? To what extent are these topics mapped by outsourced processes? The organization should be able to answer these key questions. For very small, simple organizations, i.e., a sole proprietorship, the scope of application will usually be limited to the "company". No long explanations are needed here.

**Are exclusions permitted?**

No, exclusions of standard requirements are not possible. However, there is a possibility that specific standard requirements are "not applicable".

If a specific requirement is "not applicable" due to the type of organization, there must be a justification. It must be clarified why:

1. the standard requirement cannot be applied (for example, technical measuring equipment is not available, since it is not needed → 7.1.5.2 is not applicable);
2. the organization's ability to enhance customer satisfaction is not affected;
3. the organization's ability to ensure the conformity of its products and services is not affected.

**Is it possible to determine an entire Clause as "not applicable"?**

Typically, some client organizations classify the clauses 7.1.5.2 or design and development (8.3) as "not applicable". All other clauses should be scrutinized extremely critically, as ISO 9001 was written for organizations of all types and sizes.

**We have a parent company that also sets quality standards. Will these be audited as well?**

No, these are considered in terms of the requirements of interested parties. If the scope covers only the site to be audited, then this is clearly delineated. The situation is different if relevant QMS processes are carried out by the parent company. Then, these processes must of course be taken into account as outsourced processes (for example, central purchasing).

**标准中的"Scope"一词意味着什么?**

在 ISO 9001 中，"Scope"一词出现两次：一次是标准本身的适用范围（标准第 1 条），即该标准可用于提供满足要求的产品和服务，并提升客户满意度。第二次是在第 4.3 条中提到"质量管理体系的适用范围"，即组织应确定质量管理体系的边界与适用性。

在 ISO/IEC 17021 的德文翻译中，"Scope"被翻译为 "适用性（Applicability）"，并指代"认证范围"（德语："Anwendungsbereich" 与 "Geltungsbereich"）。而在 ISO 9001 中，并未使用"Geltungsbereich"一词及其含义。

**示例**:

在这里应确保一致性。例如：审核报告中写明"设计不适用"，但证书却写着"设计与制造……"，这就产生了矛盾。因此，**管理体系的适用范围应与证书上的范围保持一致。**

**提示**:

理想情况下，组织应在可行性评估阶段就已定义好范围；但**最迟应在第一阶段审核中明确适用范围。**


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

**企业集团的"Scope"应考虑哪些内容?**

审核员不仅要审核管理体系的要求，也要审核认证流程的要求。必须遵守 IAF MD1 的规定以及 Quality Austria 的规定文件 RE_27_01_074e《多场所组织的认证》。

证书上的范围或其他说明应明确指出受认证的活动由证书（或附录）中列出的场所执行。若某一场所仅涵盖组织总体范围中的一部分，则（主）证书应明确包含该部分内容。

**适用范围可以只限于某一产品或产品线吗?**

基本上是可以的：认证范围可限定为某一具体产品或服务"XY"，并根据涉及员工人数确定最少审核时间。

客户组织应对管理体系的适用范围进行文件化，并满足所有适用的标准要求。但由于为了符合这些要求，往往涉及多个部门，因此应评估将认证范围限制为某一产品是否合理。在此情形下，**是对提供产品或服务"XY"的质量管理组织进行认证。**

**非常小型组织如何证明在确定范围时已考虑情境与相关方要求?**

关键在于：这些影响因素是否在体系中有效体现？组织内部如何处理？外部又如何？外包流程中是否涵盖这些议题？组织应能回答这些核心问题。对于非常小型且结构简单的组织（如个体经营者），其适用范围通常仅限于"公司"本身，无需过多说明。

**可以排除标准中的要求吗?**

不能完全排除标准要求。然而，如因组织性质某些要求"不适用"，则需提供合理说明，说明原因如下：

1. 标准条款确实无法适用（如无技术测量设备，因不需要 → 第 7.1.5.2 条不适用）；
2. 不会影响组织提升客户满意度的能力；
3. 不会影响组织确保其产品和服务符合要求的能力。

**可以将整个条款设为"不适用"吗?**

有些客户组织会将第 7.1.5.2 条或第 8.3 条设计与开发设为"不适用"。其他条款应非常谨慎地考虑，因为 ISO 9001 是为所有类型和规模的组织编写的。

**我们有一个母公司，也制定了质量标准，这些也会被审核吗?**

不会。母公司制定的标准会被视为相关方要求而加以考虑。如果适用范围只涵盖被审核的场所，则应清晰划定边界。但若母公司负责相关的质量管理体系流程（如集中采购），则这些流程必须作为**外包流程**纳入审核范围。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

# 4. Audit and Labor Law 审核与劳动法

Since the relevant legal framework as well as the health aspects must be taken into account, especially in the case of occupational health and safety audits, it is recommended to limit the audit time to 8 hours per audit day and to adapt it to the working conditions of the organization to be audited.

In any case, a half-hour break must be taken after six hours of auditing, as this is required by Austrian law.

审核与劳务法 鉴于在职业健康安全审核中必须考虑相关法律框架和健康因素，建议将每一审核日的工作时长限制为 8 小时，并根据得审经纪经常条件调整工作时间。

无论如何，根据奥地利法律，审核达 6 小时后必须休息半小时。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

# 5. Specifications for Nonconformities acc. to ISO/IEC 17021-1:2015 and ISO 50003:2021 不符合项的规定（依据 ISO/IEC 17021-1:2015 和 ISO 50003:2021）

A distinction is made between **substantial and subordinate nonconformities,** which are referred to as **major nonconformities and minor nonconformities** in practice.
实际操作中将不符合项区分为实质性不符合项和次要不符合项，分别称为严重不符合项和一般不符合项。

## 5.1 Nonconformities acc. to ISO/IEC 17021-1:2015

*3.12 **Major Nonconformity***

***Nonconformity** (3.11.) that affects the capability of the management system to achieve the intended results*

*Note 1 to entry: Nonconformities could be classified as major in the following circumstances:*

- *if there is a **significant doubt** that **effective process control** is in place, or that **products or services** will meet **specified requirements**;*
- ***a number of minor nonconformities** associated with the same requirement or issue **could** demonstrate **a systemic failure** and thus constitute a major nonconformity.*

*3.13 **Minor nonconformity**:*

*Nonconformity (3.11.) that **does not affect** the capability of the management system to **achieve the intended results**.*

### 5.1 依据 ISO/IEC 17021-1:2015 的不符合项定义

3.12 严重不符合项:
影响管理体系实现其预期结果能力的不符合项（3.11）
注 1：以下情况可将不符合项归类为严重不符合项:

- 存在对有效过程控制是否到位的重大疑虑，或对产品或服务是否能满足规定要求存在重大疑虑;
- 若多个一般不符合项关联于同一要求或问题，可表明存在系统性失效，因此构成严重不符合项。

*3.13 一般不符合项:*
*不影响管理体系实现其预期结果能力的不符合项（3.11）。*

## 5.2 Specifications for Nonconformities acc. to ISO 50003:2021

Analogous to ISO/IEC 17021-1:2015, ISO 50003:2021 defines major nonconformities in clause *3.6 "Major nonconformity"*

*<energy management system> nonconformity, that **affects the capability of the EnMS** to achieve the **intended results***

*Note 1 to entry: Classifying nonconformities as **major** could be as follows:*

*- audit evidence that **energy performance improvement** was **not achieved**;*

*- a **significant doubt** that **effective process control** is in place;*

*- a **number of minor nonconformities** associated with the same requirements or issue **could demonstrate** a **systemic failure** and thus constitute a major nonconformity.*

*Note 2 to entry: Energy performance improvement can be demonstrated at the equipment, process, system, or facility level. (*)*

*[SOURCE: ISO/IEC 17021-1:2015, 3.12,]*

**) Note to Note 2: This explanation is stated in the Draft version of ISO 50003:2020 and is no*


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

*longer to be found in the final English version. However, this note is very helpful for a better understanding.*

### 5.2 依据 ISO 50003:2021 的不符合项规定

与 ISO/IEC 17021-1:2015 类似，ISO 50003:2021 在第 3.6 条中定义了**严重不符合项**：

**<能源管理体系>不符合项，影响 EnMS（能源管理体系）实现其预期结果能力。**

注 1：将不符合项归类为严重不符合项的情形包括：

- 审核证据显示未实现能源绩效改进；
- 对有效过程控制是否到位存在重大疑虑；
- 若多个一般不符合项关联于同一要求或问题，可能表明存在系统性失效，从而构成严重不符合项。

注 2：能源绩效改进可在设备、过程、系统或设施层面进行展示。

【来源：ISO/IEC 17021-1:2015 第 3.12 条】

*）注释补充：上述注 2 中的解释出现在 ISO 50003:2020 草案版本中，最终英文正式版本中已删除，但该注释对于理解仍极具参考价值。

## 5.3 Practice-oriented Considerations as a Screening and Decision-making Basis for the Determination of Nonconformities

The following graph is recalled form the 2016 IMS calibration:

## 5.3 以实践为导向的判定不符合项的筛查与决策依据

以下图示摘自 2016 年 IMS 校准会议内容：


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

# 6. Requirements of IAF MD 22:2023
# IAF MD 22:2023 的要求

## 6.1 Prior to Submission of an Offer

In accordance with the requirements of MD 22, specific data must be collected from the interested organization before the offer is submitted. In addition to the standard feasibility form, the CSC sends the supplementary sheet "Review of feasibility OH&S" to the client. This form must be completed by the client and then builds the basis for preparing the offer.

### 6.1 提供报价前

根据 MD 22 的要求，在提供报价前，必须从意向组织处收集特定数据。除了标准的可行性评估表外，客户服务中心（CSC）还需向客户发送补充表《职业健康安全审核可行性评估表》。此表格须由客户填写，并作为准备报价的基础。

## 6.2 Serious Incident or Breach of Regulation Related to Occupational Health and Safety

### 6.2.1 Supplements to GTC

In accordance with the MD 22 requirement that the certified organization is required to inform the certification body of the occurrence of serious incidents or breach of regulation related to Occupational Health and Safety, supplementary conditions for the area of OH&S have been integrated into the General Terms and Conditions.

Definition of serious incident or breach of regulation related to Occupational Health and Safety

Prior to taking a decision as an auditor, it shall be clarified whether the event occurred is in fact related to Occupational Health and Safety Management. **Attention:** This is a provisional regulation; it will be adjusted according to the increasing level of experience and knowledge.

- Serious incident/accident that shall be reported (**absence from work due to an accident >24 calendar days or fatal accident**; no commuting accident from or to work).
- Serious breach of regulation – for example, in Austria, there are sanctions according to the Worker Protection Act (AschG) §130, > 10.000 € fine may be imposed) ... there is the possibility of an administrative penalty

  ATTENTION → we are auditors, not judges! We do not make any prejudices or the like. We adhere to the law and only decide whether a breach of regulation affects the Occupational Health and Safety Management once a recognized judgement has been issued.

### 6.2 与职业健康安全相关的严重事件或法规违规行为

### 6.2.1 对通用条款和条件的补充

根据 MD 22 的要求，获得认证的组织有义务在发生与职业健康安全相关的**严重事件或法规违规行为**时通知认证机构，因此，在通用条款和条件中已整合有关 OH&S 的补充条款。

**职业健康安全相关严重事件或法规违规的定义：**

在审核员作出决定前，应首先明确该事件是否属于职业健康安全管理范畴。注意：此为临时规定，将随着经验和知识的积累进行调整。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

- 需报告的严重事故/事件（如因事故造成 >24 个日历日的缺勤，或发生致命事故；不包括上下班途中发生的通勤事故）。
- 严重的法规违规行为——例如在奥地利，根据《劳动者保护法》第 130 条（AschG），可能会处以超过 10,000 欧元的罚款，存在行政处罚的可能性。

**注意：我们是审核员，而非法官！**我们不做预判或推测，仅在已有正式裁决的基础上判断该违规行为是否影响职业健康安全管理体系。

## 6.2.2 Notification and Decision-Making Chain

The organization is required to inform Quality Austria, without delay, of the occurrence of a serious incident or breach of regulation related to OH&S. On this matter, it is recommended to use the intended form. The organization sends this form to the CSC (office@qualityaustria.com). The CSC will immediately forward this form to the product expert or representative. The product expert then decides on the actions to be taken based on the facts, which can range from mere acknowledgement to withdrawal of the certificate. The result will first be communicated to the respective lead auditor, and then to the organization.

**ATTENTION:**

- Reporting without delay is understood to mean informing Quality Austria as soon as it is clear that the incident is a serious incident / accident that shall be reported or a serious breach of regulation in relation to occupational health and safety.
- This is a temporary regulation; according to the developing knowledge and expertise, this regulation will be adjusted.

### 6.2.2 通报及决策流程

一旦发生与 OH&S 相关的严重事件或违规行为，组织必须**立即通知 Quality Austria**，建议使用规定的表格。填写后将表格发送至 CSC（office@qualityaustria.com）。CSC 将立即转交产品专家或相关代表。产品专家依据具体情况决定应采取的措施，范围可能从仅记录事件到撤销证书。决定结果将首先告知主审核员，然后反馈给组织。

**注意：**

- "立即报告"指一旦确认事件为需报告的严重事故或严重违规行为，即刻通知 Quality Austria。
- 此为临时规定，将根据专业知识的发展进行调整。

## 6.2.3 Effects on audits

During the audit, the auditor shall question whether there has been a serious incident or breach of regulation in relation to OH&S since the latest audit. If such incidents have occurred without reporting to Quality Austria, a nonconformity shall be formulated (MD 22:2023, Chapter 8). The severity of the incident shall be reviewed (as far as possible during the audit). Based on this review, the auditor decides (verifiably) whether a major or minor nonconformity must be issued. In justified individual cases, this may lead to a downgrade to a hint.

### 6.2.3 对审核的影响

在审核过程中，审核员应询问自上次审核以来是否发生过 OH&S 相关的严重事件或违规行为。若确有发生且未通报 Quality Austria，应开具不符合项（依据 MD 22:2023 第 8 章）。审核员应评估事件的严重性（在


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

审核期间可评估的范围内），并据此**做出明确记录的判定**是否应开具**严重不符合项**或**一般不符合项**。在合理的个别情况下，也可降为提示项（Hint）。

## 6.2.4 Planning the Audit (Temporary Sites)

- In the case of an OH&S MS operated over multiple sites, it is necessary to establish if sampling is permitted or not based on the evaluation of the level of OH&S risks associated to the nature of activities and processes carried out at each site included in the scope of certification. The rationale of such decisions, the calculation of the audit time and the frequency of visiting each site shall be consistent with the requirements of RE_25_03_01e_minimum audit time and RE_27_01_074r_Certification of multi-site organizations and shall be documented for each client organization.
  - Where there are multiple sites not covering the same activities, processes and OH&S risks, sampling is not appropriate.
  - Temporary sites
    - Temporary sites, for example, construction sites, shall be covered by the OH&S MS of the organization that has control of these sites, irrespective of where they are located.
    - Temporary sites covered by the organization's OH&S MS are subject to audit on a sample basis to provide evidence of the operation and effectiveness of the management system.

### 6.2.4 审核计划安排（临时场所）

- 对于涵盖多个场所的职业健康安全管理体系，应评估是否可采用抽样方法，取决于各场所活动和过程所涉及的 OH&S 风险程度。相关决策的依据、审核时间的计算及各场所的审核频次应符合文件 RE_25_03_01e《最低审核时间》及 RE_27_01_074r《多场所组织认证》要求，并需为每位客户组织单独记录。
  - 若各场所从事的活动、过程或涉及的 OH&S 风险不一致，则**不适宜采用抽样审核方式。**
  - **临时场所**：
    - 例如建筑工地等临时场所，无论其地理位置，必须纳入组织所控制的 OH&S 管理体系。
    - 被纳入 OH&S 管理体系的临时场所，**需以抽样方式接受审核**，以验证体系的运行及有效性。

## 6.2.5 Mandatory Interviews during Audits:

When auditing ISO 45001, the following functions shall be audited (IAF MD 22:2023 G 9.4.4.2):

- The management with legal responsibility for OH&S (e.g., managing directors by commercial law, responsible Representatives acc. to § 23 ArbIG, see also regional/national laws in other countries, etc.)
- Employees' representatives with responsibility for OH&S (e.g., Safety representative, safety engineers, works council, etc.). ATTENTION: Consider internal regulations
  - Legal obligation of safety representatives, safety engineers / OH&S physician regarding employees
  - Works council is useful, but not a MUST
- Personnel responsible for monitoring employees' health (e.g., occupational physician, emergency response officer, first aiders, etc.)
- Managers and permanent and temporary employees


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

ATTENTION:

- For reasons of traceability, the functions shall at least be stated in the audit plan.
- In justified cases, a remote audit can be conducted (e.g., the occupational physician is not present at the site).
- The following personnel shall be invited to the audit closing meeting:
  - ... the management personnel with legal responsibility for OH&S;
  - ... personnel responsible for monitoring employees' health;
  - ... employee's representative(s) with responsibility for OH&S.

  NOTE: Justifications in case of absence shall be recorded.

**6.2.5 审核期间的强制性访谈要求：**

在进行 ISO 45001 审核时，必须访谈以下岗位（依据 IAF MD 22:2023 第 G 9.4.4.2 条）：

- 对 OH&S 法律责任负责的管理人员（如公司法项下的董事总经理，依据 §23 ArbIG 的法定代表人，或其他国家/地区相关法律规定）；
- 员工代表中负责 OH&S 的人员（如安全代表、安全工程师、职工委员会等）。注意：需结合组织内部规定进行考虑
  - 安全代表、安全工程师、职业健康医师对员工负有法律责任；
  - 职工委员会的参与虽非强制，但具有参考价值；
- 负责员工健康监测的人员（如职业健康医师、应急响应官、急救人员等）；
- 管理层员工以及临时或固定雇员。

**注意：**

- 为确保可追溯性，审核计划中应至少列出上述职能人员；
- 在合理情况下，可进行远程访谈（例如职业健康医师不在场）；
- 以下人员应出席审核的末次会议：
  - 法律上对 OH&S 负责的管理层人员；
  - 负责员工健康监测的人员；
  - 员工中负责 OH&S 的代表；
  - 若有缺席，须记录缺席理由。

## 6.2.6 Closing Meeting:

The organization representative shall be requested to invite the following persons to attend the closing meeting:

- the **management legally responsible for OH&S**,
- **personnel responsible for monitoring employee's health** and


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

- **employees' representative(s)** responsible for OH&S,
- Justification in case of absence shall be recorded.

### 6.2.6 末次会议

组织代表应被要求邀请以下人员参加审核末次会议：

- 法律上对 OH&S 负责的管理人员；
- 负责员工健康监测的相关人员；
- 员工中负责 OH&S 的代表人员；
- 如有缺席，**必须记录正当理由。**


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

# 7. Auditing Statutory and Regulatory Requirements 审核法律法规要求

The obligation to comply with legal requirements is a core requirement of management standards. However, its extent varies depending on the respective management standard.

遵守法律要求是各类管理体系标准的核心要求之一。然而，依据具体的管理体系标准，其涉及的范围有所不同。

| Standard 标准 | Terms 术语 | Number of times mentioned 提及次数 |
|---|---|---|
| ISO 9001:2015 | Statutory and regulatory requirements 法定和法规 | 8 |
| ISO 14001:2015 | Compliance obligations 合规义务 | 15 |
| ISO 45001:2018 | Legal requirements and other requirements 法律要求及其他要求 | 15 |
| ISO 50001:2018 | Legal requirements and other requirements 法律要求及其他要求 | 4 |

Source: Hackenauer Wolfgang, "Auditing legal requirements", Vienna March 2022, page 6, see competence program in Moodle: https://elearning.qualityaustria.com/moodle/course/view.php?id=589; accessed on 20 July 2023

来源：Wolfgang Hackenauer，《审核法律要求》，2022 年 3 月，维也纳，第 6 页，见 Quality Austria Moodle 平台能力提升课程：https://elearning.qualityaustria.com/moodle/course/view.php?id=589（访问时间：2023 年 7 月 20 日）

## 7.1 ISO/IEC 17021-1:2015 – Excerpt from the Standard on Legal and Regulatory Requirements – Risk-Based Approach

Certification bodies need to consider the **risks** associated with providing competent, consistent and impartial certification. Risks may include, but are not limited to, those associated with:

- the objectives of the audit;
- the sampling used in the audit process;
- real and perceived impartiality;
- **legal, regulatory and liability issues;**
- the client organization being audited and its operating environment;
- impact of the audit on the client and its activities;
- health and safety of the audit teams;
- perception of interested parties;
- misleading statements by the certified client;
- use of marks.

**7.1 ISO/IEC 17021-1:2015 关于法律和法规要求的节选——基于风险的审核方法**

认证机构在提供具备能力、一致性和公正性的认证服务时，应考虑相关风险。这些风险可能包括但不限于：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Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

- 审核目标；
- 审核过程中的抽样；
- 实际和被感知的公正性；
- 法律、法规和责任相关问题；
- 被审核客户及其运营环境；
- 审核对客户及其活动的影响；
- 审核团队的健康与安全；
- 利益相关方的看法；
- 获证客户发布的误导性声明；
- 标志的使用。

## 7.2 Basic Information on Auditing Statutory and Regulatory Requirements

### 7.2.1 The Competence Formula for Auditing Statutory and Regulatory Requirements

The basis for auditing is ISO 19011:2018. Clause 7.2.3.2 defines the *"Generic knowledge and skills of management system auditors"*. Auditors should have knowledge and skills in the areas outlined below.

Lit d) *Applicable **statutory and regulatory requirements** and other requirements: knowledge and skills in this area enable the auditor to be aware of, and work within, the organization's requirements. Knowledge and skills specific to the jurisdiction or to the auditee's activities, processes, products and services should cover the following:*

- *statutory and regulatory requirements and their governing agencies;*
- *basic legal terminology;*
- *contracting and liability*

*NOTE Awareness of statutory and regulatory requirements does not imply legal expertise and a management system audit should **not be treated as a legal compliance audit**.*

From this, the following **competency formula** can be derived, which applies to 1st party, 2nd party and 3rd party audits.

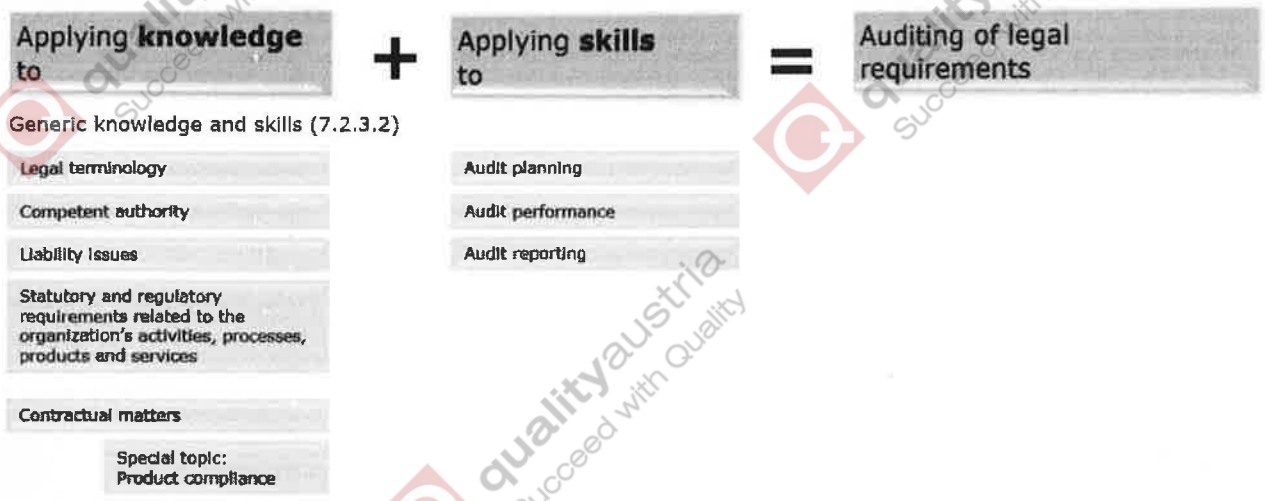



Figure: Wolfgang Hackenauer, Slides IMS Calibration 2023, Auditing of statutory and regulatory requirements

### 7.2 审核法律法规要求的基本信息

#### 7.2.1 审核法律法规要求的能力公式

依据 ISO 19011:2018，第 7.2.3.2 条规定了"管理体系审核员的一般知识与技能"。审核员应在以下领域具备知识与技能：

- 条款 d）适用的法定和法规要求及其他要求：
  审核员需具备此方面的知识与技能，以理解并在组织的法律框架下开展工作。需涵盖与法律管辖区域或被审核方的活动、过程、产品和服务相关的：
  - 法定和法规要求及主管机构；
  - 基本法律术语；
  - 合同与法律责任。

**注意：** 对法律法规的了解并不意味着具备法律专业能力，管理体系审核不应被视为法律合规性审核。

基于此，可以推导出适用于第一方、第二方和第三方审核的能力公式。

*图示：Wolfgang Hackenauer，IMS 校准培训2023 年，法律法规审核能力公式*

## 7.2.2 ISO/IEC 17021-1 - 9.3.1.3 Stage 2

*The purpose of stage 2 is to evaluate the implementation, including effectiveness, of the client's management system. The stage 2 shall take place at the site(s) of the client. It shall include the auditing of at least the following:*
*a) information and evidence about conformity to all requirements of the applicable management system standard or other normative documents;*
*b) performance monitoring, measuring, reporting and reviewing against key performance objectives and targets (consistent with the expectations in the applicable management system standard or other normative document);*
*c) the client's management system ability and its performance regarding meeting of applicable* ***statutory, regulatory and contractual requirements****;*
*d) operational control of the client's processes;*
*e) internal auditing and management review;*
*f) management responsibility for the client's policies*

### 7.2.2 ISO/IEC 17021-1 第 9.3.1.3 条：第二阶段审核

第二阶段审核的目的是评估客户管理体系的实施情况及其有效性。第二阶段审核必须在客户现场进行，至少包括以下内容：

a) 有关符合适用管理体系标准或其他规范性文件所有要求的信息与证据；
b) 针对关键绩效目标和指标的绩效监控、测量、报告与评审；
c) 管理体系在满足适用的法定、法规及合同要求方面的能力和绩效；
d) 客户过程的运行控制；
e) 内部审核与管理评审；
f) 管理层对公司方针的责任。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## 7.3 Recommendations of Blogs to deepen the Legal Topics

The following Blog titles are provided with links (only in German available):

1. Kann ein Managementsystem vor Strafen schützen? - Quality Austria
2. Wissenswertes zur Rechtssicherheit für "Beauftragte" - Quality Austria
3. Die Haftung des GmbH Geschäftsführers - Quality Austria
4. Integriertes Managementsystem – Rechtssicherheit für Führungskräfte - Quality Austria
5. Rechtssicherheit für Organisationen - Quality Austria
6. Rechtssicherheit für Führungskräfte - Quality Austria
7. Gerichts- und behördenfeste Organisationen – Teil I - Quality Austria
8. Gerichts- und behördenfeste Organisationen – Teil II - Quality Austria
9. ISO 9001 Revision explained in simple terms – Statutory and regulatory requirements - Quality Austria
10. Integrierte Managementsysteme - Beauftragte versus verantwortlich Beauftragte
11. Haftung des gewerberechtlichen Geschäftsführers

**7.3 推荐博客资源（加深对法律主题的理解，仅提供德文版本）**

1. 管理体系能否保护组织免于处罚？ - Quality Austria
2. 法规合规基础知识：为"授权代表"提供的资讯 - Quality Austria
3. 有限公司（GmbH）负责人法律责任 - Quality Austria
4. 集成管理体系：为管理层提供法律保障 - Quality Austria
5. 组织的法律保障 - Quality Austria
6. 管理层的法律保障 - Quality Austria
7. 符合法院和行政机关要求的组织（上） - Quality Austria
8. 符合法院和行政机关要求的组织（下） - Quality Austria
9. 简明解读 ISO 9001 修订：法定和法规要求 - Quality Austria
10. 集成管理体系：授权代表与法定代表的区别 - Quality Austria
11. 工商法规定负责人之责任 - Quality Austria

## 7.4 Review of the Recordings of the Webinar Series "Auditing of Statutory and Regulatory Requirements" in the qualityaustria Moodle

1. PE_IMSA1: Auditieren von rechtlichen und behördlichen Anforderungen z.B. an Hand von Bescheiden; Wolfgang Hackenauer, Fr. 1. April
2. PE_IMSA2: Berechtigungen, Genehmigungen und Bewilligungen im Audit; Wolfgang Hackenauer, Fr. 22. April
3. PE_IMSA3: Vertragsprüfungen, Abklärung der Machbarkeiten und potentielle Risiken im Zusammenhang mit den AGB's, Friedrich Smida, Fr. 6. Mai
4. PE_IMSA4: Beauftragte und Haftungen; Wolfgang Hackenauer; Fr. 13. Mai
5. PE_IMSA5: Gesetzliche und behördliche Anforderungen im ISO 9001 Audit; Ecki Bauer, Fr. 20. Mai
6. PE_IMSA6: Fluchtwege, Sicherheitsbeleuchtung und –leitsysteme in Arbeitsstätten; Ecki Bauer,
   Fr. 1.07
7. PE_IMSA7: Herausforderung IPPC und Seveso – ein Überblick und wie bereite ich mich auf das Audit vor?, Friedrich Smida, 8.7.


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

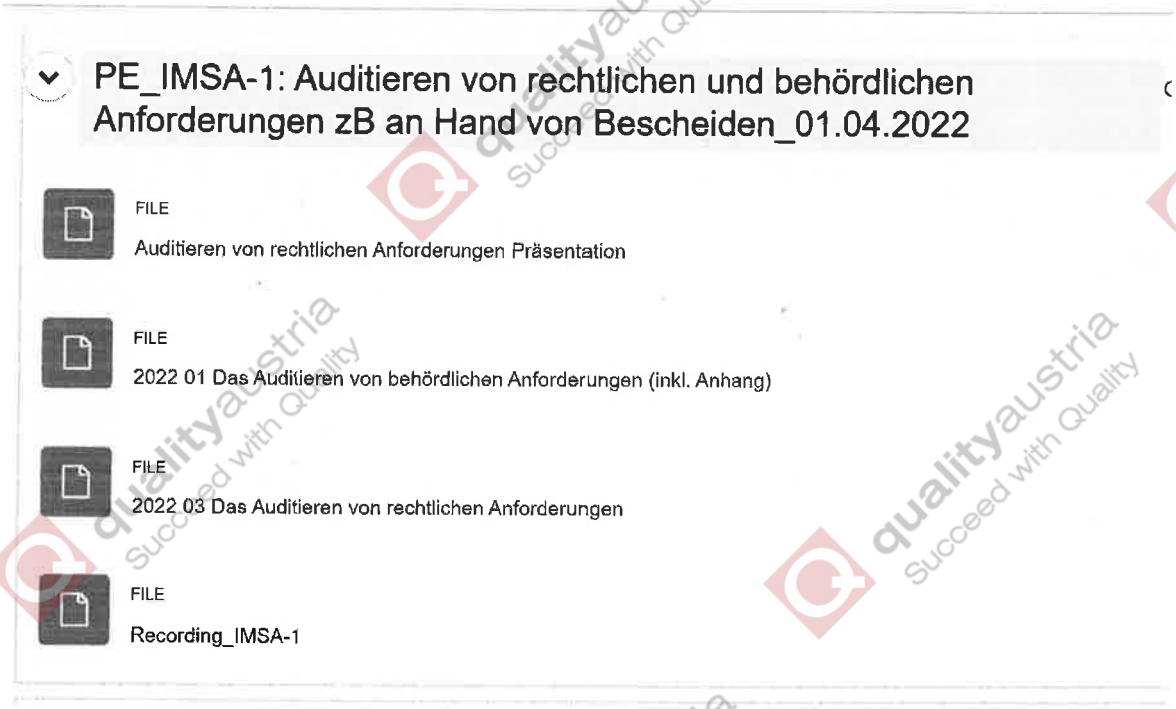
**7.4 录播课：Quality Austria Moodle 中的"审核法律法规要求"系列课程（仅德文）**

1. PE_IMSA1：通过许可决定等审核法律与行政要求（Wolfgang Hackenauer）
2. PE_IMSA2：审核中的许可、审批和授权（Wolfgang Hackenauer）
3. PE_IMSA3：合同审核、可行性澄清及与通用条款相关的潜在风险（Friedrich Smida）
4. PE_IMSA4：被授权人及其责任（Wolfgang Hackenauer）
5. PE_IMSA5：ISO 9001 审核中的法律与行政要求（Ecki Bauer）
6. PE_IMSA6：工作场所的逃生通道、安全照明与指引系统（Ecki Bauer）
7. PE_IMSA7：IPPC 与 SEVESO 指令的审核挑战与准备（Friedrich Smida）

(only in German available)

**Example PE_IMSA-1**
https://elearning.qualityaustria.com/moodle/course/view.php?id=589

示例：PE_IMSA1
https://elearning.qualityaustria.com/moodle/course/view.php?id=589





Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## 7.5 Non-Compliance with Relevant Regulatory Requirements:

If a nonconformity regarding non-compliance with relevant regulatory requirements is identified during the audit (note: this refers to the Administrative Criminal Law, essentially non-compliance with obligations under the Worker Protection Act (ASchG) and the associated regulations), this must be communicated, without delay, to the audited organization.

This regulation is applicable irrespective of whether a normative nonconformity has been identified during the audit.

### 7.5 未遵守相关法规的情形：

若在审核过程中发现存在违反适用法规的情况（如违反《劳动者保护法》（ASchG）及其附属规定的义务，属于行政处罚法范畴），**应立即通知被审核组织。**

无论此次审核是否识别出规范性不符合项，该规定均适用。

## 7.6 Legal Requirements – Comparison of Requirements Models

**Chapter 3** of PE_IMSA 1 shows a detailed comparison of the requirements models ISO 9001, ISO 14001, ISO 45001 and ISO 50001 per standard clause.

### 7.6 法律要求——标准模型对比

PE_IMSA1 第 3 章展示了 ISO 9001、ISO 14001、ISO 45001 和 ISO 50001 标准条款的详细比较。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

# 3. Legal Requirements in Standards

## 3.1 Comparison of Requirements Models

| | | Requirements Models | | | |
|---|---|---|---|---|---|
| | **Standard Clauses (Elements)** | **ISO 9001** | **ISO 14001** | **ISO 45001** | **ISO 50001** |
| **4** | **Context of the organization** | **4.1** Understanding the organization and its context<br>**4.2** Understanding the needs and expectations of interested parties | **4.2** Understanding the needs and expectations of interested parties<br>**4.3** Determining the scope of the environmental management system | **4.2** Understanding the needs and expectations of workers and other interested parties | **4.2** Understanding the needs and expectations of interested parties |
| **5** | **Leadership (and worker participation)** | **5.1.2** Customer focus | **5.2** Environmental policy | **5.2** OH&S policy<br>**5.4** Consultation and participation of workers | **5.2** Energy policy |
| **6** | **Planning** | | **6.1.1** General<br>**6.1.3** Compliance obligations<br>**6.1.4** Planning action<br>**6.2.1** Environmental objectives | **6.1.1** General<br>**6.1.3** Determination of legal requirements and other requirements<br>**6.1.4** Planning action | |
| **7** | **Support** | | **7.2** Competence<br>**7.3** Awareness<br>**7.4.1** General (Communication)<br>**7.4.3** External communication<br>**7.5.1** General (documented information) | **7.4.1** General (communication)<br>**7.4.3** External communication<br>**7.5.1** General (documented information) | |


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## 3. 标准中的法律要求

### 3.1 需求模型比较

| | | 需求模型 | | | |
|---|---|---|---|---|---|
| | 标准条款（要素） | ISO 9001 | ISO 14001 | ISO 45001 | ISO 50001 |
| 4 | 组织的背景 | 4.1 了解组织及其背景<br>4.2 理解相关方的需要和期望 | 4.2 了解相关方的需要和期望。<br>4.3 确定环境管理体系的范围 | 4.2 了解工人和其他相关方的需要和期望 | 4.2 了解相关方的需要和期望。 |
| 5 | 领导力（和工人参与） | 5.1.2 以客户为中心 | 5.2 环境政策 | 5.2 OH&S政策<br>5.4 工人的咨询和参与 | 5.2 能源政策 |
| 6 | 规划 | | 6.1.1 一般<br>6.1.3 合规义务<br>6.1.4 规划行动<br>6.2.1 环境目标 | 6.1.1 一般<br>6.1.3 确定法律要求和其他要求<br>6.1.4 规划行动 | |
| 7 | 支持 | | 7.2 能力 7.3 意识<br>7.4.1 一般（通信）<br>7.4.3 外部沟通<br>7.5.1 一般（记录信息） | 7.4.1 一般（通信） 7.4.3 外部通信<br>7.5.1 一般（记录信息） | |


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

| | Standard Clause (Elements) | Requirements Models | | | |
|---|---|---|---|---|---|
| | | ISO 9001 | ISO 14001 | ISO 45001 | ISO 50001 |
| 8 | **Operation** | **8.2.2** Determining the requirements for products and services<br>**8.2.3** Review of the requirements for products and services<br>**8.3.3** Design and development inputs<br>**8.4.2** Type and extent of control<br>**8.5.5** Post-delivery activities | | **8.1.2** Eliminating hazards and reducing OH&S risks<br>**8.1.3** Management of change<br>**8.1.4 .3** Outsourcing | |
| 9 | **Performance evaluation** | | **9.1.1** General<br>**9.1.2** Evaluation of compliance<br>**9.3** Management review | **9.1.1** General<br>**9.1.2** Evaluation of Compliance<br>**9.3** Management review | **9.1.2** Evaluation of compliance with legal requirements and other requirements<br>**9.3.2** Management review (aspects) |
| 10 | **Improvement** | | | | |


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

| | | 需求模型 | | | |
|---|---|---|---|---|---|
| | 标准条款（元素） | ISO 9001 | 8.1.3 变更 | 8.1.3 变更 | 质量管理体系 |
| 8 | 操作 | 8.2.2 确定产品和服务的要求<br>8.2.3 产品和服务的要求审查<br>8.3.3 设计和开发投入<br>8.4.2 控制类型和程度<br>8.5.5 交付后活动 | | 8.1.2 消除危险并减少OH&S风险<br>8.1.3 变更管理<br>8.1.4.3 外包 | |
| 9 | 绩效评估 | | 9.1.1 一般 9.1.2 合规评估<br>9.3 管理评审 | 9.1.1 一般 9.1.2 合规评估<br>9.3 管理评审 | 9.1.2 评估遵守法律要求和其他要求的情况<br>9.3.2 管理评审（方面） |
| 10 | 改进 | | | | |

## 7.6.1 Findings from the Table

- Under 4, Context, only 4.3 of ISO 14001 addresses the scope.
- Under 5, Leadership (participation), ISO 45001 refers to 5.4 (Participation and Consultation) and instead of policy, ISO 9001 refers to customer focus.
- Under 6, Planning, ISO 14001 also refers to objectives.
- Under 7, Support, only ISO 14001 refers to 7.2 Competence and 7.3 Awareness.
- Under 8, Operation, ISO 9001 has a strong presence (including post-delivery activities), ISO 45001 is for once not in parallel with ISO 14001; management of change is addressed in ISO 45001 – in ISO 14001, this is only addressed in the Annex.
- Under 9, Performance evaluation, only ISO 9001 is not represented (it refers to requirements in general).

**7.6.1 表格总结发现**

- 第 4 章“组织环境”中，仅 ISO 14001 的 4.3 条涉及管理体系的适用范围；
- 第 5 章“领导作用”中，ISO 45001 强调第 5.4 条“参与和协商”，而 ISO 9001 更偏重“以顾客为关注焦点”，而非方针；
- 第 6 章“策划”中，ISO 14001 也提及环境目标；
- 第 7 章“支持”中，仅 ISO 14001 涉及第 7.2 条“能力”和第 7.3 条“意识”；
- 第 8 章“运行”中，ISO 9001 占比较强（包括交付后的活动），而 ISO 45001 与 ISO 14001 并不完全一致，例如“变更管理”在 ISO 45001 中作为明文条款规定，在 ISO 14001 中仅出现在附录中；
- 第 9 章“绩效评价”中，仅 ISO 9001 未明确列出，内容笼统指向所有要求。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## 7.7 ISO 14001:2015 – Common Thread of Compliance Obligations at a Glance

Reference to "Compliance obligations" is made under the following audit criteria:

- 4.2 Understanding the needs and expectations of interested parties
- 5.2 Environmental policy
- 6.1.3 Compliance obligations
- 6.1.4 Planning action
- 6.2 Environmental objectives and planning to achieve them
- 7.2 Competence
- 7.3 Awareness
- 7.4 Communication
- 8.1 Operational planning and control
- 9.1.2 Evaluation of compliance
- 9.2 Internal audit
- 9.3 Management review
- 10.1 Improvement – General

**7.7 ISO 14001:2015——"合规义务"在审核标准中的贯穿体现**

"合规义务"在以下审核条款中有所体现：

- 4.2 理解相关方的需求与期望
- 5.2 环境方针
- 6.1.3 合规义务
- 6.1.4 策划措施
- 6.2 环境目标及其实现策划
- 7.2 能力
- 7.3 意识
- 7.4 沟通
- 8.1 运行策划与控制
- 9.1.2 合规性评价
- 9.2 内部审核
- 9.3 管理评审
- 10.1 改进 – 总则

### 7.7.1 Findings from the Client's Understanding of ISO 14001:2015

Experience from the trainings and examinations: this comprehensive common thread is often NOT recognized. Experience shows that the focus of the course participants and auditees is on clause 6.1.3 and management review.

In audits, the **absence of the standard clause 9.1.2 Evaluation of Compliance** is regularly discussed.

In **internal audits**, the auditing of statutory and regulatory requirements is often avoided. The reasons for this are complex:

- Legal topics are often a "hot button issue"
- Resources and/or lack of competence of internal auditors
- Knowledge of the international environmental law in other countries, where the organization has sites
- Extreme example: the potential client organization argues that no legal samples are taken in the internal audit because the certification body does this anyway.

For this reason, Quality Austria has also developed a seminar on "Auditing statutory and regulatory requirements", which is also perfectly suited as an Inhouse training.


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

### 7.7.1 客户对 ISO 14001:2015 的理解总结

来自培训和考试的经验显示：虽然"合规义务"是贯穿条款的主线，但常常**未被充分认识**。课程参与者和被审核方往往只关注于第 6.1.3 条和"管理评审"。

在实际审核中，**未设置 9.1.2 条（合规性评价）**是被频繁讨论的问题。

在内部审核中，对**法律法规要求的审核**经常被**回避**。原因包括：

- 法律议题常被视为"敏感问题"；
- 审核员资源有限或缺乏合规能力；
- 对组织在其他国家分支机构所适用的国际环境法律不熟悉；
- 极端例子：某潜在客户辩称内部审核不采集法律合规证据，因为这些由认证机构来处理。

因此，Quality Austria 开设了"审核法律法规要求"专门课程，也非常适合作为企业内部培训。

## 7.8 Recommendations for legal samples ISO 9001, ISO 14001, ISO 45001

- GISA – Type of business license (*check if there are similar databases available in your country*)
- Permits, approval of installations, notices (relevant obligations)
- Laws and standards relevant to CE marking (market surveillance)
- Contracts
- General Terms and Conditions, and Conditions for Purchasing
- Appointment of legal representatives, e.g., waste management officer, preventive forces, fire protection representative, fire protection officers, etc.
- Notification of the representatives to authorities, if required by law; for example, waste management officer, safety representative; delegation of responsibility according to §23 of the Labor Inspection Act (Arbeitsinspektionsgesetz) *(please consider regional/national legal requirements)*
- Proof of training for the qualification of legally required representatives, for example, safety representatives, safety engineers, first aiders
- Inspection protocols of recurring inspections, e.g., for lifting systems, cooling and refrigeration systems, boilers, vehicles
- Inspection protocols of emission measurements
- Proper selection and commissioning of waste management companies
- Workplace evaluation
- Instruction of employees (initial instruction, recurring instruction)
- Appointment of the safety representative
- Current safety data sheets (not older than 2 years)
- Accident reports for incidents subject to mandatory reporting

Essential legal bases for consensus assessments **in Austria** are for example:

- § 82b Industrial Code (Gewerbeordnung) – for commercial enterprises
- § 19a Railway Act (Eisenbahngesetz) – for railroad companies (including connecting railroads)
- § 134 Water Rights Act (Wasserrechtsgesetz) for all approved discharges
- § 140 Gas Industry Act (Gaswirtschaftsgesetz) for all gas supply companies
- § 14a Pipeline Act (Rohrleitungsgesetz) for the commercial transport of goods in pipelines

**Tip**: from a risk-based point of view, requirements from legislation could be used, where **non-compliance** could result in **administrative penalties** (see excerpts in Annex 3).


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

**Tip**: **Safety data sheets** can be used for verification, as many audit criteria are defined here.

**Tip**: **Audit preparation**: for IPPC or Seveso companies, the EDM portal in Austria (see also "service part") should be checked to see whether corresponding inspection reports from the authorities are available. (*please consider if there are any similar databases available in your country*);

### 7.8 ISO 9001、ISO 14001、ISO 45001 中推荐的法律合规样本

- GISA – 企业经营许可类型（可查找贵国是否有类似数据库）
- 安装许可、批准通知书等（含相关义务）
- 与 CE 标志相关的法律与标准（市场监管）
- 合同
- 一般条款与采购条款
- 法定责任人的任命（如废弃物管理员、安全力量代表、防火负责人等）
- 若法律要求，向主管机关报备上述责任人（如废弃物管理员、安全代表）
- 根据《劳动监察法》第 23 条的职责委托（需结合地区/国家法规）
- 法定职责人员的培训证明（如安全代表、安全工程师、急救员）
- 定期检测报告（如起重设备、冷却系统、锅炉、车辆）
- 排放检测报告
- 合规的废弃物管理公司委托文件
- 工作场所评估
- 员工指令（初始培训、复训等）
- 安全代表的正式任命
- 最新的安全数据表（不超过两年）
- 强制申报事故的事故报告

奥地利的关键法律基础（举例）：

- 工业法 §82b（适用于商业企业）
- 铁路法 §19a（适用于铁路及连接铁路公司）
- 水资源法 §134（适用于所有经批准排放）
- 天然气工业法 §140（适用于天然气供应企业）
- 管道运输法 §14a（适用于商业性管道运输）

**提示：** 可从风险导向角度出发，优先审核若不遵守会导致行政处罚的法律要求（见附录 3）。
**提示：** 安全数据表可作为许多审核条款的有效验证材料。
**提示：** 针对 IPPC 或 Seveso 类企业，建议审核前在奥地利 EDM 门户查询主管机关是否已有相关检查报告（其他国家可查找是否有类似数据库）。

## 7.9 Possible Legal Samples in ISO 50001:2018 Audits

The following legal requirements should be questioned in the audit and documented in the report, depending on their relevance, for example:

- Permits. approval for installations: Notices for boiler systems (including emissions), pellets, biomass PV, wind power, refrigeration systems
- Energy Efficiency Act (Energieeffizienzgesetz), e.g., possible reporting obligations
- Electricity labeling in accordance with the Electricity Industry Act (Elektrizitätswirtschaftsgesetz ELWOG)
- EU F-gases regulation, e.g., for refrigeration systems, heat pumps


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
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- Recurring inspection of cooling and refrigeration systems
- Current safety data sheets, e.g., for cooling agents such as $NH_3$, HFCs
- Recurring inspections of the Electrical Engineering Act (Elektrotechnikgesetz)
- Funding agreements and thus possible conditions, e.g., also for electromobility
- Voluntary agreements such as Klimaaktiv or commitments to climate neutrality by 2030, or to Basis Science Based Targets
- BAT documents (BREFs)

**7.9 ISO 50001:2018 审核中的可能法律样本**

依据相关性，在审核中应调查并记录以下法律要求：

- 安装许可通知：锅炉系统（含排放）、生物质、光伏、风能、制冷系统等
- 能源效率法：是否存在申报义务
- 电力行业法下的电力标签要求（ELWOG）
- 欧盟 F-气体法规：适用于制冷、热泵系统
- 冷却/制冷系统的周期性检查
- 最新安全数据表（如氨、HFCs）
- 《电气工程法》相关定期检测
- 与资金支持协议相关的约束条款（如电动车相关补助）
- 自愿性承诺，如 Klimaaktiv、2030 气候中和承诺、科学减排目标（SBTs）
- 最佳可行技术（BAT）文档（BREFs）

## 7.10 Performance Commitments and Environmental Communication

Taking action against greenwashing is an integral part of the European Green Deal.

Increasingly, lawyers are also taking a stand; for example, webinar of 15 February 2023„Fit for Green Claims – Dos and Don'ts in Sustainable Advertising" (lawyer Dr. Beatrice Blümel, Master of Laws, Mag. Barbara Kuchar);

The newsletter of the **Lawyer's Office Binder & Grösswang** from 23 November 2022 stated: "Greenwashing – ***A case for the public prosecutor***? *A few months ago, news spread about investigations and house searches by law enforcement authorities at financial institu- tions in Germany. The background to this was the suspicion that investors had been deceived by false or incomplete information on the sustainability criteria of financial products. Every day, the number of cases in which companies from a wide range of industries are accused of Greenwashing is increasing."*

(Free translation from https://www.bindergroesswang.at/law-blog/2022/greenwashing-ein-fall-fuer-den-staatsanwalt) (accessed on 24 February 2023)

*„... A new aspect is that in the future not only civil courts, but also criminal courts will have to deal with Greenwashing. The* ***Austrian Criminal Law does not recognize a separate criminal offense for Greenwashing****, however, a* ***financial disposition of a third party obtained by means of deception about the nature, characteristics, origin or quality of a good or service can constitute a criminally relevant act of fraud (§ 146 StGB)****. In this context, indirect intent (this means, seriously believing it to be possible and accepting it) is sufficient and, under certain circumstances, failure to clarify the facts may also constitute grounds for criminal liability.* ***If incorrect or incomplete information is provided in annual financial statements, status reports, capital market prospectuses, shareholders' meetings or the like, the Criminal Accounting Law (Bilanzstrafrecht) (§§§ 163a et seq. of the Austrian Criminal Law StGB)*** *also becomes an issue. The criminal law risk does not only affect the individual employee or representative of a company, but also the company itself on the basis of the* ***Association Responsibility Act (Verbandsverantwortlichkeitsgesetz VbVG).***


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

As an example, here is an excerpt (screenshot) of the current decision of the Linz Regional Court against Brau Union for deception by the advertising statement "climate neutral brewing" (31 March 2023, 3Cg 69/22k-8):

2. Die beklagte Partei ist schuldig, es im geschäftlichen Verkehr zu unterlassen, ein Produkt (insbesondere Gösser-Bier) mit der Behauptung „$CO_2$ neutral gebraut", „100% des Energiebedarfs für den Brauprozess kommen aus erneuerbaren Energien", „Deshalb brauen wir nicht nur mit regionalen Rohstoffen, sondern seit 2015 auch zu 100% $CO_2$ neutral" oder sinngleich zu bewerben, ohne ausreichend deutlich darauf hinzuweisen, dass nicht der gesamte Herstellungsprozess ab Ernte $CO_2$ neutral erfolgt, sondern nach der Ernte insbesondere zur Bearbeitung der Gerste noch Methangas (Erdgas) eingesetzt wird, ein fossiler Energieträger der nicht $CO_2$-neutral ist.

2. 被控方有罪，在商业交易中避免使用，一种产品（特别是哥瑟尔啤酒）声称"用CO2中性酿造"。"生产过程中100%的能源需求来自可再生能源""因此，我们不仅使用本地原材料，但自2015年起也宣传100%的二氧化碳中性"或类似的说法，没有足够清楚地指出这一点，并非从收获开始整个生产过程都是碳中和的，但在收获后，特别是用于加工大麦时，仍然使用甲烷气体（天然气），是一种非二氧化碳中性的化石燃料。

### 7.10 绩效承诺与环境沟通

打击"绿色漂绿"（Greenwashing）行为是欧盟绿色协议的重要组成部分。
越来越多的法律专家对此发声。例如，2023 年 2 月 15 日的网络研讨会《Fit for Green Claims – 可持续广告中的行为守则》（主讲人：律师 Dr. Beatrice Blümel，法律硕士，Mag. Barbara Kuchar）中指出：

律师事务所 Binder & Grösswang 于 2022 年 11 月 23 日在其新闻稿中表示：
"绿色漂绿——检察官介入的案件？德国执法机构对部分金融机构进行调查和突击搜查，原因是怀疑其提供关于金融产品可持续性标准的虚假或不完整信息，涉嫌欺诈投资者。目前，各行各业被指控绿色漂绿的案件数量正在迅速增长。"
（自由翻译自：https://www.bindergroesswang.at/law-blog/2022/greenwashing-ein-fall-fuer-den-staatsanwalt，访问时间：2023 年 2 月 24 日）

"……新的趋势是，未来不仅是民事法院，刑事法院也将介入绿色漂绿问题。虽然奥地利刑法中并未单设绿色漂绿罪名，但如果通过对商品或服务的性质、特性、来源或质量作出虚假陈述，误导第三方产生经济支配，可能构成刑法第 146 条下的欺诈行为。在此情境下，**间接故意**（即明知有此可能且接受其发生）已构成犯罪，甚至在某些情况下，未尽到解释义务也可能引发刑责。"
如果误导信息体现在财务报表、年度报告、股东大会或资本市场说明书等，刑法中"财务报告罪"（Bilanzstrafrecht，第 163a 条及之后条款）也将适用。刑事风险不仅涉及员工或负责人，亦适用于整个公司，依据《公司责任法》（Verbandsverantwortlichkeitsgesetz, VbVG）。

**例如：** 奥地利林茨地方法院于 2023 年 3 月 31 日对 Brau Union 公司 "气候中和酿造" 宣传语做出误导消费者判决（案件编号：3Cg 69/22k-8）截图如下：

Why is this becoming more important in marketing?
Claims in advertising and sales represent a performance commitment. The Federal Act against Unfair Competition (UWG) is the legal basis for this. In the end, proof of deception can have a


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

massive impact on the organization as a result of jurisdiction. This means that these claims are not only relevant in an environmental audit or CRS audit, but also in an ISO 9001 audit.

Excerpt from the report in: https://www.kwr.at/news/greenwashing-vs-green-claims-wenn-das-gruene-vom-himmel-versprochen-wird (accessed on 23 February 2023, *free translation*)

*„... For example, according to a 2020 study by the EU Commission, more than* ***half of the claims about the sustainability of products were vague, misleading or unfounded****...*

*... In the event of violations of the advertising restrictions, both competitors and associations with legal standing have a corresponding* ***right to sue for injunctive relief, damages and publication of judgments****.*

*In any case, Green Claims that violate one of the* ***per se prohibitions of the blacklist (nos. 1 to 23 of the Annex to the Federal Act against Unfair Competition*** *("UWG") are prohibited. This includes, among other things, the* ***unqualified use of quality marks.*** See also below:

*...* ***Proposal for a Directive on empowering consumers for the green transition***

*With the proposal for this directive, the EU Commission aims to protect consumers by increasing the information obligations of companies, among other things by selective adjustments to existing regulations. The aim is to* ***make consumer even more aware of environmental information as a determining factor in purchasing decisions****.*

*First, the proposal for the directive contains a number of new definitions on which the adapted elements of Unfair Commercial Practices are (partly) based.* ***Terms*** *such as* ***"environmental claim", "sustainability label", "certification scheme" or "durability" are defined****. This is followed by the addition of "environmental and social impacts", and "durability and repairability" to the product characteristics that are essential for the assessment of misleading claims.*

***Also****, the* ***per se prohibitions*** *of the* ***blacklist*** *are* ***supplemented by ten additional commercial practices****, which are to be considered unfair in all circumstances. These are, for example*

- ***displaying a sustainability label which is not based on a certification scheme*** *or not established by public authorities,*
- ***making an environmental claim about the entire product*** *when it* ***actually*** *concerns* ***only a certain aspect of the product****, or*
- ***advertising benefits for consumers that are considered as common practice*** *(highlighting as a particularity that a company complies with the legal requirements applicable to all providers).* (Note Axel Dick: this has long been seen as an element of greenwashing, for example CFC-free sprays).

*The* ***EU Commission's*** *eagerly awaited* ***further Proposal for a Directive on Green Claims*** *aims to provide a* ***standardized framework for assessing the environmental impact of products*** *and to be able to* ***substantiate claims*** *such as "made from natural ingredients". Companies will be able to evaluate the environmental claims they make about their products using the* ***"Product Environmental Footprint (PEF)"*** *or other* ***alternative methods approved by the EU*** *...*

*Member States should also establish a* ***system for verifying evidence of environmental claims by an independent verifier and provide for appropriate sanctions in case of non-compliance.***

为什么这在市场营销中变得越来越重要？
广告和销售中的主张本质上构成了一种绩效承诺。其法律依据是《反不正当竞争法》（UWG）。一旦这些主张被认定为欺诈或误导，司法层面的裁决可能对企业造成重大影响。因此，这些主张不仅在环境审核或企业社会责任（CRS）审核中具有相关性，也同样适用于 ISO 9001 审核。
引用自报道： https://www.kwr.at/news/greenwashing-vs-green-claims-wenn-das-gruene-


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

vom-himmel-versprochen-wird（访问时间：2023 年 2 月 23 日，自由翻译）：
"……例如，欧盟委员会 2020 年发布的一项研究显示，超过一半关于产品可持续性的主张都是模糊的、误导性的或毫无根据的……
……若违反广告限制，具备法律资格的竞争对手或协会有权提起禁令诉讼、损害赔偿请求，并要求公布判决。"
任何违反《反不正当竞争法》（UWG）附录黑名单第 1 至 23 项的"绿色主张"在任何情况下都是被禁止的。其中包括未经认证使用质量标识等做法。

欧盟《赋权消费者实现绿色转型指令草案》摘要：
该指令草案由欧盟委员会提出，旨在通过对现有法规的有针对性调整，加强企业信息披露义务，以提升消费者对环境信息的关注程度，使其成为影响购买决策的重要因素。
草案首先提出多个新定义，为调整后的《不正当商业行为指令》条款奠定基础，涉及术语包括：

- "环境主张"（Environmental Claim）
- "可持续标签"（Sustainability Label）
- "认证机制"（Certification Scheme）
- "耐久性"（Durability）

此外还新增了产品评估中需考虑的属性：

- "环境和社会影响"
- "耐用性与可维修性"

黑名单也新增了十项一律不正当的商业行为，例如：

- 展示非基于认证机制或未由公共机构设立的可持续标签；
- 将环保主张应用于整个产品，实则仅适用于部分；
- 将本应符合法规的内容当作特殊优势宣传（例如宣传"无氟利昂"喷雾，尽管这是法规要求而非竞争优势）。

（注：Axel Dick 指出，这类做法早已被视为绿色漂绿的典型案例。）

欧盟绿色主张指令草案（Green Claims Directive）
该指令旨在为产品环境影响评估建立一个标准化框架，从而验证例如"源自天然成分"等主张的真实性。
企业可使用"产品环境足迹（PEF）"或其他欧盟认可的方法对其绿色主张进行评估。
各成员国还应建立独立验证机制，以审查环保主张的证据，并针对不合规行为设定相应的处罚措施。

如果你需要这段内容用于 ISO 审核员培训、法律风险清单整理，或构建绿色合规声明审核模板，我可以进一步协助处理文档结构或本地化建议。

### 7.10.1 Findings from Market Observations

- The **advertising company** is **responsible**.
- EU 2020: 10% of all trademark applications had a green reference, such as organic, compostable etc. Green trademark portfolios are increasing, for example, Spar, Lagerhaus
- Fundamental basis is the ***Federal Act against Unfair Competition*** **(UWG in Austria): Prohibition of misleading claims**:
  - ***False information*** *is always inadmissible.*
  - ***Misleading information*** *is also inadmissible,* ***strict standard in interpretation,*** *because in advertising a* ***high emotional advertising effect*** *is achieved.*
  - **Blacklist in the Federal Act against Unfair Competition (UWG)** – is now to be extended according to EU requirements.
- **Lawsuits** are increasing in Germany and Austria; partly triggered by **competitors** or **consumer protection associations.**
- Consumer protection associations are engaged in **"naming and shaming campaigns"**, including VKI, and have sufficient resources to do so.
- **New Green Deal** wants to take action against inadmissible claims.
- When it comes to **organic and climate neutrality**, the judges set even higher standards; however, among the approx. 70 participants in the Webinar, ISO 14064 or even ISO 14068 were not known.
- **Use environmental claims only if they are clearly substantiated** by expert


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

opinions, studies, **certificates**, ... The new **Green Claim Directive** now also includes the PEF approach (Product Environmental Footprint)

- Green Claims **must be clearly verifiable**; **no incorrect percentages** may be stated.
- For **climate neutrality**, the **entire life cycle must be considered.**

7.10.1 市场观察发现

- 宣传责任由发布企业承担；
- 2020 年，欧盟 10% 的商标申请涉及"绿色"术语（如 organic、可堆肥）；绿色品牌组合增长显著（如 Spar、Lagerhaus）；
- 法律依据为奥地利《反不正当竞争法》（UWG）：
  - 错误信息始终被视为违法；
  - 误导性信息亦违法，解释标准更为严格，因为广告具有强烈情绪引导力；
  - UWG 黑名单将根据欧盟要求进一步扩展；
- 奥地利和德国的诉讼案例日益增多，部分由竞争对手或消费者协会发起；
- 消费者协会如 VKI 发起"曝光行动"，并有足够资源支撑；
- "绿色协议"框架下欧盟将进一步打击违规主张；
- 对"有机""气候中和"等主张的审查更为严格；但在某场网络研讨会中，约 70 位参与者中鲜有人了解 ISO 14064 或 ISO 14068
- 仅在有明确依据（如专家意见、研究、证书）支持下使用环保主张；新的绿色主张指令草案中也纳入了"产品环境足迹（PEF）"验证机制；
- 不得使用虚假百分比或夸张描述；
- 若宣传"气候中和"，需考虑产品/服务全生命周期影响。

## 7.10.2 Excerpt from the Federal Act against Unfair Competition (UWG) §2 – Misleading Commercial Practices

Note: Free translation and check your national regulation against unfair competition:

***§ 2.*** *(1) A commercial practice shall be considered* ***misleading*** *if it contains* ***incorrect information*** *(§ 39) or is* ***otherwise likely to mislead*** *a market participant with regard to the product* ***about one or more of the following points*** *in such a way that the market participant* ***is induced*** *to make a* ***commercial decision that he/she would not have made otherwise****:*

*1. the existence or the* ***type of product****;*

*2. the* ***main characteristics of the product or essential characteristics of tests or inspections*** *to which the product has been subject;*

*3. the extent of the company's commitments, the rationale for the commercial practice, the nature of the distribution process, the* ***claims or symbols of any kind*** *related to direct or indirect sponsorship or relating to an* ***approval of the company or the product****;*

*4. the price, the method of calculating the price or the existence of a special price advantage;*

*5. the need for a service, spare part, replacement or repair;*

*6. the person, characteristics or rights of the organization or its representative, such as identity and assets, qualifications, status, licensing, memberships or affiliations, and industrial or commercial property rights or intellectual property or awards and honors;*

*7. the* ***consumer's rights under warranty and guarantee****, or the risks to which the consumer may be exposed.*

*(2) In any case, the business practices listed in the* ***Annex, Z 1 to 23c*** *shall be considered as misleading.*

**7.10.2 奥地利《反不正当竞争法》（UWG）第 2 条节选：误导性商业行为**


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

（提示：此为自由翻译，使用前请对照所在国法律）

**§2 第1 款** *若商业行为包含错误信息或具有误导市场参与者可能性的内容，导致其作出原本不会作出的商业决策，则该行为视为误导性行为。以下内容若涉及误导，均构成违规：*

1. *产品的存在或类型；*
2. *产品主要特征，或所经测试/检查的实质信息；*
3. *企业承诺范围、营销策略、销售渠道、任何形式的主张或象征（包括赞助/认证）；*
4. *产品价格、定价方法或价格优惠是否真实存在；*
5. *是否确有服务、零件或维修的必要性；*
6. *企业或代表的身份、资格、资质、法律地位、知识产权、所获奖项等；*
7. *消费者权利或潜在风险的描述。*

**第2 款** *附录中列明的第 Z1 至 Z23c 项商业行为，在任何情况下均被视为误导行为。*


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

# 8. Climate Change in ISO Management System Standards
## ISO 管理体系标准中的气候变化内容

**Amendment AMD 1:2024** of the management system standards now contains requirements on climate change in 4.1 and 4.2 of the ISO standards.

This was initiated by the **Joint Communiqué of the International Organization for Standardization (ISO) and the International Accreditation Forum (IAF)** in February 2024, with the aim of implementing the so-called London Declaration of ISO (2021); this means that all standards must review whether **climate change is a relevant issue**. With the Communiqué, ISO and IAF have made it a requirement to consider the issue of climate change in context in order to address possible opportunities and risks arising from climate change – each from the perspective of the specific management standard.

The **relevant quality**austria **checklists including the amendments are available as of June 1, 2024**.

In the following, background information and examples will explain the significance of climate change in risk-based thinking. Chapter 8 of this document is more comprehensive than originally planned because the topic is challenging and it can be assumed that these issues will become increasingly important in the future.

The **EU Taxonomy Regulation** already requires a **climate risk and vulnerability assessment** according to **Appendix A** of the Regulation. Reporting in accordance with the Directive on corporate sustainability reporting (CSRD), including **ESRS E1**, also requires **disclosure** of potential risks. This means that **large companies** already have the **legal requirements** of the EU Taxonomy Regulation and CSRD to deal with climate change issues.

Climate Change can affect the **location of the company**, but also have a direct impact on **supply chains**.
In terms of physical risks, a distinction is made between **acute and chronic risks**, and there may also be **transition risks**.

**管理体系标准的修订案 AMD 1:2024 现已在 ISO 标准的第 4.1 和 4.2 条中加入了关于气候变化的要求。**

此项修订源于国际标准化组织（ISO）与国际认可论坛（IAF）于 2024 年 2 月联合发布的公告，旨在落实 ISO 于 2021 年提出的《伦敦宣言》。这意味着所有管理体系标准均需审视气候变化是否为相关议题。通过该联合公告，ISO 与 IAF 要求各标准从自身体系的角度出发，在组织的情境中考虑气候变化问题，以识别由此带来的机遇与风险。

包括本次修订内容在内的 qualityaustria 相关审核清单自 2024 年 6 月 1 日起正式提供。

接下来的章节将通过背景信息和示例，进一步说明在基于风险的思维中气候变化的重要性。由于该议题复杂且在未来预计将日益重要，因此本文件的第 8 章内容比原计划更加详尽。

欧盟《可持续金融分类法规》（EU Taxonomy Regulation）已要求依据该法规的附录 A 进行气候风险与脆弱性评估。而按照《企业可持续报告指令》（CSRD）进行的报告（包括 ESRS E1）也要求披露潜在风险。这意味着，大型企业已经在法律层面上被要求依据《EU 分类法》与《CSRD》应对气候变化相


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

关事项。

气候变化可能影响企业的选址，同时也可能直接冲击供应链。
在物理风险方面，可区分为急性风险与慢性风险，同时也可能存在转型风险。

**II. Classification of climate-related hazards**[325]

| | Temperature-related | Wind-related | Water-related | Solid mass-related |
|---|---|---|---|---|
| Chronic | Changing temperature (air, freshwater, marine water) | Changing wind patterns | Changing precipitation patterns and types (rain, hail, snow/ice) | Coastal erosion |
| | Heat stress | | Precipitation or hydrological variability | Soil degradation |
| | Temperature variability | | Ocean acidification | Soil erosion |
| | Permafrost thawing | | Saline intrusion | Solifluction |
| | | | Sea level rise | |
| | | | Water stress | |
| Acute | Heat wave | Cyclone, hurricane, typhoon | Drought | Avalanche |
| | Cold wave/frost | Storm (including blizzards, dust and sandstorms) | Heavy precipitation (rain, hail, snow/ice) | Landslide |
| | Wildfire | Tornado | Flood (coastal, fluvial, pluvial, ground water) | Subsidence |
| | | | Glacial lake outburst | |

Figure: Classification of climate-related hazards in **"acute"** and **"chronic"** for the parameters **temperature, water, wind, and solid mass** according to Appendix A of the EU Taxonomy Regulation.


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

II. 气候相关危害的分类325

| | 与温度有关的 | 与风有关的 | 与水有关的 | 固体质量相关 |
|---|---|---|---|---|
| Chronic | 改变温度淡水，水（航空、海洋） | 变化的模式 风 | 变化的降水模式和类型（雨、冰雹、雪/冰） | 海岸侵蚀 |
| | 热应激 | | 降水水文变异性 | 或土壤退化 |
| | 温度变化 | | 海洋酸化 | 土壤侵蚀 |
| | 永久冻土融化 | | 盐水入侵 | 固结作用 |
| | | | 海平面上升 | |
| | | | 水分胁迫 | |
| Acute | 热浪 | 气旋、飓风、台风 | 干旱 | 雪崩 |
| | 寒潮/霜冻 | 风暴（包括暴风雪、沙尘暴和沙暴） | 强降水（雨、雹、雪/冰） | 山崩 |
| | 野火 | 龙卷风 | 洪水（沿海、河流、雨洪、地下水） | 沉淀 |
| | | | 冰川湖溃决 | |

图示：根据欧盟《可持续金融分类法规》（EU Taxonomy Regulation）附录 A 的内容，针对温度、水资源、风力和固体物质四个参数，将气候相关危害划分为"急性（acute）"与"慢性（chronic）"两类

## 8.1 Facts and Figures - Background 背景事实与数据

Munich Re's (**Munich Rückversicherung**) chart clearly shows that natural hazards have increased in recent decades.

**The World Economic Forum** concludes that in the long term, failure to protect the climate, failure to adapt to climate change, extreme weather events and the loss of biodiversity are the major global risks over the next 10 years.

慕尼黑再保险公司（Munich Re）的图表清晰显示出，近年来自然灾害事件持续增加。世界经济论坛（World Economic Forum）则指出，从长期来看，未能保护气候、未能适应气候变化、极端天气事件以及生物多样性的丧失，是未来十年内最重大的全球性风险。

Source: Welt Hungerhilfe/Münchner Rück

Source: World Economic Forum Global Risks 2023-2024

来源：世界经济论坛《全球风险报告 2023–2024》

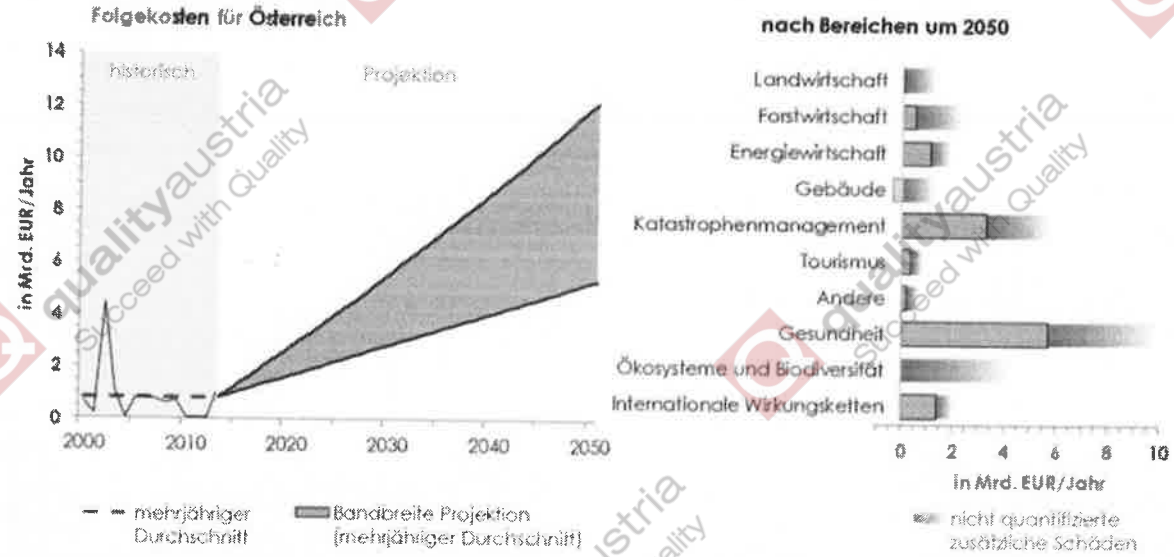
The **study by Karl Steininger et al – (Climate Policy in Austria, 2020, and the costs of failing to implement climate policy) Klimapolitik in Österreich, 2020 und die Erhebung der Kosten unterlassener Klimapolitik**, has attempted to extrapolate the consequences of inaction as a whole and for individual sectors. The range of damage costs is estimated to be between 4 and 12 billion Euros per year by 2050, although not all possible damages were quantified. The **costs for health and catastrophe management** are particularly noticeable here. The following graphic is crucial here:

Figure SPM.2: Weather and climate change-related damages: Already quantified causal chains, development up to 2050.


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

Karl Steininger 等人发表的研究《奥地利气候政策，2020 年，及未执行气候政策的成本》（Klimapolitik in Österreich, 2020 und die Erhebung der Kosten unterlassener Klimapolitik）尝试对整体及各行业的不作为后果进行推算。其估算的损失成本范围为每年 40 亿至 120 亿欧元（至 2050 年），其中并未涵盖所有可能的损失，尤以健康和灾害管理方面的成本最为显著。以下图示至关重要：

**图 SPM.2：与天气和气候变化相关的损害：已量化的因果链及至 2050 年的发展趋势**




Source: Karl Steininger et al – Climate Policy in Austria, 2020

来源：Karl Steininger 等，《奥地利气候政策》，2020

## 8.2 ISO 9001 Auditing Practice Group - Guidance on Auditing Climate Change issues in ISO 9001 – Auszug ISO 9001 审核实践组 - ISO 9001 中审核气候变化问题的指导（节选）

**Key questions:**

1. Has the organization **determined whether climate change is a relevant issue**?
2. Does the organization's determination align with **applicable statutory and regulatory requirements** applicable to their products and services?
3. Does the organization's determination align with their **contractual requirements**?

**关键问题：**

1. 组织是否已判断气候变化是否为相关议题?
2. 组织的判断是否与适用于其产品和服务的法律法规要求一致?
3. 组织的判断是否与合同要求一致?

### *4.1 New Requirement: The organization shall determine whether climate change is a relevant issue.*

*Auditing considerations for climate change impacts from external and internal issues can include:*

- ***Changes in statutory or regulatory requirements** such as restriction on the use of certain materials, product circularity, product life cycle, product origin, claims, etc.*
- *Use of **bio-based, renewable materials**.*
- *Potential impacts on the products and services or on the QMS processes, by*


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

*changes determined in other management system disciplines, e.g. need to reduce energy consumption, reduce waste, reuse or recycle materials.*

- ***Extended lifetime of products**, post-delivery services and assistance*
- ***Requirements** to move to **carbon neutral** products and services.*
- *Issues impacting the **processes and infrastructure**, due to energy and other considerations.*
- ***Vulnerability of the organization** to deliver its products and services due to more frequency of storms, waterflows, fires, drought, that may imply shortages in the supply or difficulties in distribution.*
- ***Concerns related to overall knowledge** and control of the supply chain in issues related to climate change.*
- ***Market trends on sustainability** of products and services and related information and claims*
- *Competing products and services with potential better performance in climate change related issues*

**4.1 新要求:**

组织应确定气候变化是否为相关议题。

与审核外部和内部议题中气候变化影响相关的考虑因素包括:

- 法律法规变更（如对特定材料使用的限制、产品循环性、生命周期、来源、声明等）
- 使用生物基、可再生材料
- 来自其他管理体系的影响（如能源消耗减少、减少废弃物、材料再利用等）对产品、服务或质量管理体系流程的潜在影响
- 产品的延长寿命、交付后的服务和支持
- 实现碳中和产品和服务的要求
- 由于能源等因素影响流程和基础设施的问题
- 由于风暴、水灾、火灾、干旱等频发事件，导致组织提供产品和服务的能力受到影响
- 供应链在气候变化相关议题上的控制与认知能力问题
- 产品与服务的可持续性市场趋势及相关声明
- 在气候表现上可能更优的竞品

***4.2 NOTE: Relevant interested parties can have requirements related to climate change***

*Has the organization determined the existence of applicable requirements related to climate change from relevant interested parties?*

*Audit examples of relevant interested party requirements for climate change can include:*

- ***Statutory and regulatory**, environmental or climate change requirements for the product or service provided, and those that affect the organization's ability to provide that product or service.*
- ***Customer requirements** regarding climate change, zero discharge, or carbon neutrality of the products.*
- ***Parent company policies** and **strategies.***
- *Requirements related to **product information** on aspects related to climate change (sustainability of the origin, reuse, recyclability, end of life, embedded carbon, "greenwashing labelling" etc.), including product claims and associated existing legal, statutory, and other requirements.*
- ***Industry codes and standards** changes related to climate change.*
- ***Environmental agreements with community groups** or non-governmental*


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

*organizations.*

- ***Permits, licenses**, or other forms of environmental authorization.*
- ***Climate change related requirements on processes** s such as packaging, manufacturing, servicing, logistics, among others*

**4.2** 注：相关方可能对气候变化有相关要求。
组织是否已识别出来自相关方的关于气候变化的适用要求？
审核时可能涉及的相关方要求举例：

- 与产品或服务相关的法律、法规、环境或气候变化要求，以及影响组织提供能力的相关要求
- 客户对零排放或碳中和产品的要求
- 母公司政策和战略
- 有关产品信息方面的要求（如来源可持续性、可回收性、使用结束、碳含量、"漂绿标签"等）及现行法律法规要求
- 行业规范和标准对气候变化的更新
- 与社区或非政府组织的环境协议
- 许可、执照或其他环境类授权
- 与气候变化有关的流程要求（如包装、制造、服务、物流等）

## 8.3 Possible examples or questions from the perspective of MS Standards

### Water law without reference to standards

- Withdrawal of well water is regulated in an official decision. If the groundwater level falls, the authority could restict the withdrawal. This could restrict the company's operation.
- The discharge of wastewater could also be restricted if the receiving watercourse has too little water and the discharge of wastewater at 30 degrees could endange rthe water ecosystem. This is based on the temperature limits of the general and sector-specific Waste Water Emissions Ordinance (AbwasseremissionenVO)
- Example France: Rivers carried too little water for nuclear power plants (cooling)

### ISO 9001

- Are there processes that are sensitive to temperature and where a heat wave could possibly influence the control of the processes and thus the quality of the product, for example, bonding processes or storage of substances?

- How do long-term changes due to climate change affect the yield?
  - Reduction of harvests?
  - Less hydropower?
  - Loss of quality and/or quantity (cold chain, pests) in food?
  - Increased costs? ...
- Could the supply chain be interrupted by a natural disaster or also by drought?
  - Example: drought – shipping → effects on logistics and supply
  - Rhein, e.g. in 2018, 2022, 2023
  - Panama Canal 2023

### ISO 9001/ISO 37001

- Which natural hazards are insured, and how, and which ones are no longer insurable?

Take the Ahrtal flood disaster as an example: According to a study commissioned by the Federal Ministry of Economics, the financial damage amounted to over 40 billion euros. This means that the flood caused more financial damage than any other natural disaster in


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

Germany.

**ISO 14001, ISO 45001, BCM**

- **Emergency planning** and response could be influenced by natural hazards such as storms, hail, heavy rain and flooding;
- Do the scenarios need to be reconsidered here?

**ISO 14001 – Loss of Biodiversity**

- Climate change and thus changes in temperature and precipitation patterns as well as the frequency of exterme events influence the seasonal development, behavior, reproduction, competitiveness and feeding relationships of species in the long term. Biodiversity is also threatened by climate change
- Shifting elevation lines for flora and fauna
- Invasive species displace native species

**ISO 22000**

- Changes in the type, quanity and composition of pests → adaptation of pest control
- Refrigeration plays an important role in the food sector (shelf life, maintaining the cold chain, hygiene). The cooling degree days will develop differently from region to region (see for example https://publik.tuwien.ac.at/files/PubDat_205290.pdf)

**ISO 27001:**

- **Cooling server rooms and farms:** It is assumed that cooling degree days will increase significantly in the future. In other words, the energy demand here will increase. Where does this energy come from? Green energy?
- How is the ccoling technically designed?
- **Natural hazards such as flooding** could endanger server rooms, e.g. if located in the basement or on the ground floor of a building.

**ISO 45001**:

- **Increase in hot days** → influence on occupational safety and ability to concentrate?
  - Breaks
  - Cooling
  - Drinking
- **Heat stress for people** is caused by climatic conditions (indoor/outdoor), working conditions and personal parameters
  - Climatic parameters: air temperature, humidity, velocity and heat radiation
  - Working conditions: Work intensity, clothing (PPE), acclimatization, exposure time, breaks
  - Personal parameters: State of health (cardiovascular, age, previous illnesses)
  - Whether people can cool their bodies sufficiently depends not only on the **ambient temperature**, but also on the **humidity**. Dry heat is therefore easier to bear than sweltering heat. Experts speak of the **cooling limit temperature**, which takes into account both temperature and humidity.

- Other source UBA Berlin: Direct and indirect health effects of climate change

*Climate change can lead to an increase of extreme weather conditions that have either a direct or potential impact on health. These events include the consequences of storms and hurricanes and flooding caused by heavy or constant rain. The health effects these circumstances may trigger are* ***physical*** *(****infections, injuries or even death****) as well as*


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

***psychological symptoms*** *like* ***stress, anxiety, trauma and depression.***

*Adverse impacts to the environment through climate change can cause indirect health effects and risks. These changes might* ***affect the quality and quantity of drinking water and food****, modified or extended occurrence of* ***biological allergens*** *(e.g. pollen), and* ***animal vectors*** *such as ticks or mosquitos.*

**ISO 50001**

- How do changes in cooling degree days and heating degree days affect the main energy consumption?
- Are cooling processes using water cooling affected?

**8.3 从管理体系标准角度出发的示例或问题**

**水法规未引用标准的情境：**

- 地下水取用在官方许可中被限制，一旦水位下降，可能影响公司运营。
- 若接收水体水量过低，排放温度高达 30°C 的废水可能对水生态造成威胁，依据《一般及行业废水排放条例》（AbwasseremissionenVO）限制。
- 示例：法国某些河流因水量过低而无法为核电站冷却提供足够水源。

**ISO 9001：**

- 是否存在对温度敏感的流程，例如高温是否影响胶合、储存等过程，进而影响产品质量？
- 气候变化带来的长期影响如何影响产量？
  - 减产？
  - 水力发电量下降？
  - 食品品质/数量下降（冷链、虫害）？
  - 成本增加？
- 自然灾害或干旱是否可能中断供应链？
  - 例：干旱影响航运 → 物流与供应链受阻
  - 如莱茵河（2018、2022、2023 年）
  - 巴拿马运河（2023 年）

**ISO 9001/ISO 37001：**

- 哪些自然灾害已投保？哪些无法再投保？
- 示例：Ahrtal 洪灾，根据德国联邦经济部委托的研究，经济损失超 400 亿欧元，是德国历史上最昂贵的自然灾害。

**ISO 14001, ISO 45001, BCM：**

- 自然灾害（如风暴、冰雹、暴雨、洪水）是否影响应急响应与预案？是否需要重新评估情境？

**ISO 14001 – 生物多样性丧失：**

- 气候变化导致温度、降水模式和极端事件频率的变化，影响物种的季节性变化、行为、生殖力、竞争力和食物链。
- 生物多样性受到气候变化威胁：
  - 植物与动物的海拔迁移带改变
  - 外来入侵物种替代本土物种

**ISO 22000：**

- 害虫种类、数量与组成的变化 → 病虫害控制策略需调整
- 食品行业中冷链（保质期、卫生）的重要性
  - 各地冷却需求（冷负荷日）发展不同（参考 https://publik.tuwien.ac.at/files/PubDat_205290.pdf）

**ISO 27001：**

- 数据中心/服务器房冷却需求将显著增加 → 能源需求也增加。能源来源是否为绿色能源？冷却系统技


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

术如何设计？
- 洪水等自然灾害可能威胁地下/一楼服务器机房的安全性

**ISO 45001：**
- 高温日增加 → 是否影响职业安全与员工注意力？
  - 是否需要额外的休息、降温、饮水措施
- 热应激受室内/外气候条件、工作条件及个体差异影响
  - 气候因素：温度、湿度、风速、辐射
  - 工作因素：强度、防护装备、适应性、暴露时间、休息
  - 个体因素：健康状态、年龄、基础病
- 人体是否能有效散热，不仅取决于温度，也与湿度有关。干热比湿热更易承受。专家使用"冷却极限温度"来衡量二者综合影响。

**德国联邦环境署（UBA）来源：**
- 气候变化将导致更多极端天气，可能对健康造成直接或潜在影响，包括暴雨引发的洪水、风暴、飓风
  - 健康影响可能为生理（感染、受伤、死亡）和心理（压力、焦虑、创伤、抑郁）
- 对环境的间接影响也可能危及健康：饮用水和食物质量、过敏源（如花粉）发生频率变化，以及如蜱虫、蚊子等传播媒介活动范围变化

**ISO 50001：**
- 冷负荷日与热负荷日的变化对主要能源消耗有何影响？
- 是否存在受水冷却系统影响的制冷工艺？

## 8.4 Links

www.hora.gv.at: (Natural Hazard overvivew and Risk Assessment Austria): Free database for the address-specific identification of possible natrual hazards – map representation provides initial information on possible hazards from various natural hazards such as floods, earthquakes, storms, hail and snow. Furhtermore, current weather warnings for floods, hail and heavy rain events, earthquakes

https://www.umweltbundesamt.at/wasser/daten-karten/wisa: (Environment Agency Austria) - Water Information System Austria (WISA): WISA is the central platform with data and information on the Austrian water industry. WISA provides information on topics such as the National Water Management Plan, flood risk management and groundwater and surface water monitoring networks.

**Hora and WISA** are still **unknown** to many organizations.

**Further Links:**

https://www.umweltbundesamt.de/themen/klima-energie/klimafolgen-anpassung/folgen-des-klimawandels-0#undefined

https://www.umweltbundesamt.de/themen/klima-energie/klimafolgen-anpassung/folgen-des-klimawandels/klimafolgen-deutschland

https://www.umweltbundesamt.de/themen/gesundheit/umwelteinfluesse-auf-den-menschen/klimawandel-gesundheit#undefined


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## 8.4 相关链接

**www.hora.gv.at**（奥地利自然灾害概览与风险评估）：提供地址特定的自然灾害风险免费数据库，通过地图展示形式，初步识别洪水、地震、风暴、冰雹和积雪等多种自然灾害的潜在风险。此外，还包括洪水、冰雹和暴雨等天气预警，以及地震信息。

https://www.umweltbundesamt.at/wasser/daten-karten/wisa（奥地利环境署 - 水信息系统 WISA）：WISA 是奥地利水资源行业的中央平台，提供包括国家水资源管理计划、洪水风险管理、地下水与地表水监测网络等主题的数据与信息。

目前许多组织仍未熟悉 HORA 与 WISA 这两个平台。

**更多链接：**
https://www.umweltbundesamt.de/themen/klima-energie/klimafolgen-anpassung/folgen-des-klimawandels-0#undefined
https://www.umweltbundesamt.de/themen/klima-energie/klimafolgen-anpassung/folgen-des-klimawandels/klimafolgen-deutschland
https://www.umweltbundesamt.de/themen/gesundheit/umwelteinfluesse-auf-den-menschen/klimawandel-gesundheit#undefined


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

# 9. Environmental Condition Including Events 环境条件（含突发事件）

The consideration of the environmental conditions is a specific requirement in ISO 14001:2015, clause 4.1, and is reference for the identification of potential risks or opportunities in the context analysis.

In the future, the ability to climate change adaption will also become more important; not only because the international climate change negotiations decided this in Paris, but also the EU Taxonomy Regulation and EFRAG ESRS E1 require risk and vulnerability assessments and actions for this purpose.

在 ISO 14001:2015 第 4.1 条款中，明确提出了"环境条件"的要求，并作为情境分析中识别潜在风险或机遇的参考。

未来，适应气候变化的能力也将愈加重要——不仅因为《巴黎协定》在国际谈判中强调了这一点，欧盟分类法（EU Taxonomy Regulation）和 EFRAG 的 ESRS E1 标准也要求开展风险与脆弱性评估及相应应对措施。

## 9.1 Environmental Conditions acc. To ISO 14001:2015 Annex

ISO 14001:2015 A.4 a) explains "**environmental conditions**"; in the brackets, possible specific questions or problems are listed in keywords:

- **Climate** (→ Impacts and effects of climate change – what is the contribution to climate change mitigation (saving of $CO_2$ equivalents)?)
- **Air quality**: Immission situation, see for example IGL Graz, Salzburg, Linz; how does the organization affect local or regional air quality through emissions, such as precursor substances for ground-level ozone formation? → Are there restrictions for the operation of plants or for traffic?
- **Water quality**: Water quality of watercourses; drinking water quality;
- **Land use:** land use planning, urban planning, zoning, sealing; land sealing is now increasingly becoming the focus of discussions in Austria;
- **Existing contamination**: soil contamination, contaminated sites, pollution caused by accidents; pollution caused by immissions; if there is a statement on soil contamination as an environmental aspect, what are the related objectives and actions for this? In this case, a statement should also be made in the audit report.
- **Natural resource availability**
- **Biodiversity**: in practice, this is often reported as a KPI together with land consumption (sealed area); hint: according to the definition in 3.8 and ISO 14031, flora and fauna are explicitly addressed here.

**Conclusions:**

- Basically, the standard wants organizations to take an overall look at the environment in which the company operates.
- Furthermore, potential risks can be derived from the analysis of the environmental condition and how it affects the organization.
- The identification of significant environmental aspects may result in changes in the assessment by taking environmental conditions into account.
- The analysis of the environmental condition will affect the determination of significant environmental aspects, especially if a given current situation exacerbates the environ-


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

mental relevance of activities, products and services due to high levels of pollution or scarcity (e.g., of water, soil...). The consideration of the environmental condition can provide important insights into risks.

### 9.1 ISO 14001:2015 附录中关于环境条件的规定

ISO 14001:2015 附录 A.4 a) 对"环境条件"做出解释，并列出以下关键词问题：

- **气候**（气候变化的影响 → 是否有助于减缓气候变化，如节能减碳？）
- **空气质量**：排放是否对区域空气质量有影响？（例如臭氧前体物质）→ 是否对工厂或交通存在限制？
- **水质**：包括水体水质与饮用水水质
- **土地利用**：城市规划、分区管理、土地硬化；土地硬化在奥地利成为日益关注的议题
- **现有污染**：土壤污染、事故造成的污染；如果土壤污染被识别为环境因素，审核报告中应提及其目标与措施
- **自然资源的可获取性**
- **生物多样性**：通常与土地消耗（硬化面积）作为 KPI 上报；依据 ISO 14031，明确定义了涉及动植物的生物多样性

**总结：**

- 标准希望组织全面了解其所在环境；
- 环境条件分析可揭示潜在风险；
- 环境条件可能影响对重大环境因素的识别，特别是在资源稀缺或污染严重的情形下；
- 对环境条件的考量有助于识别与分析风险。

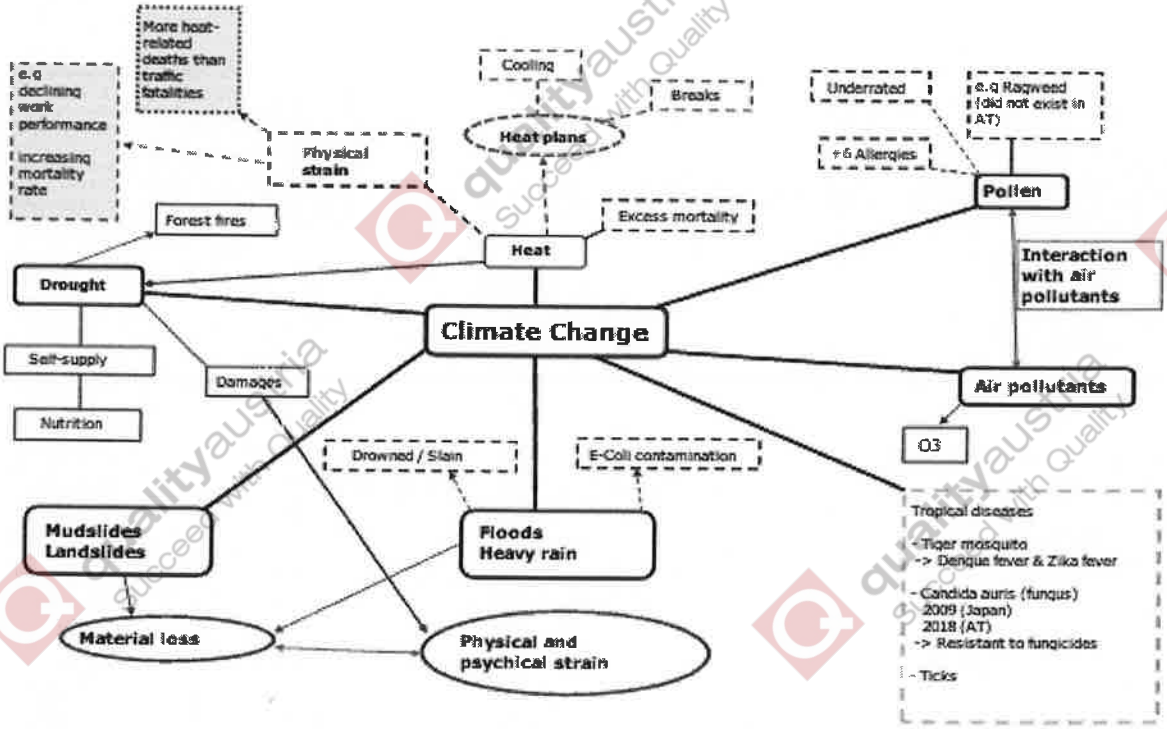
## 9.2 Excursus Risk Assessment and Vulnerability Assessment Adaption to Climate Change

Possible **Climate change impacts (risks)** acc. to ISO 14090 are:

- Transition risks
- Facilities and buildings
- Supply chain (risks at suppliers and customers)
- Impacts on employee health
- Transport route interruptions due to extreme events (heavy rain, landslides, rock-fall)
- Reduced availability of cooling and process water during the summer months

Possible interrelationships and interactions between environment and health are shown in the following graph (own illustration):


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

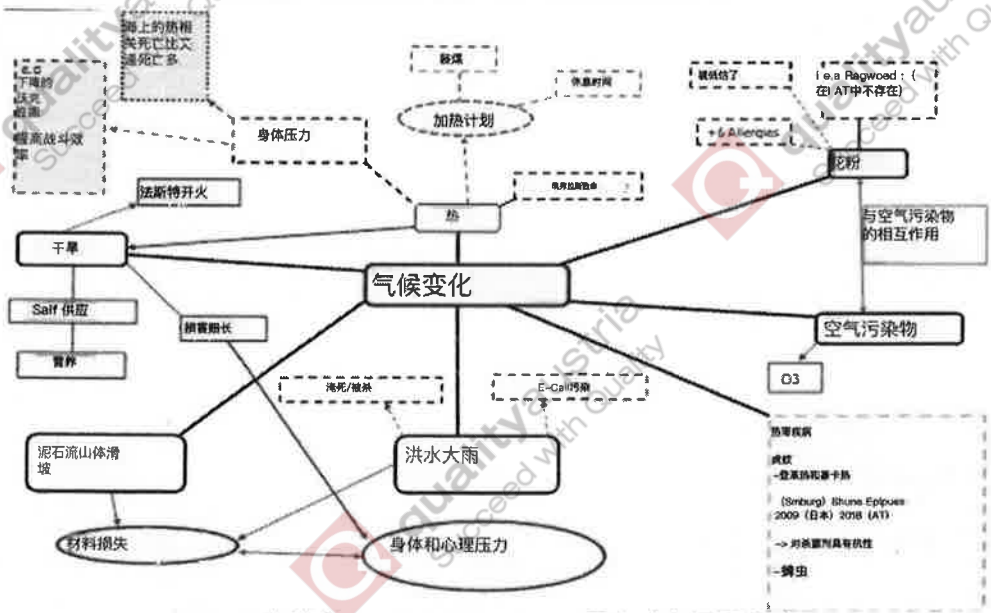



## 9.2 附录说明：气候变化适应中的风险评估与脆弱性评估

根据 ISO 14090，气候变化可能带来的影响（风险）包括：

- 转型风险（Transition risks）
- 对设施与建筑物的影响
- 供应链风险（供应商和客户层面的中断）
- 对员工健康的影响
- 极端天气事件（如暴雨、山体滑坡、落石）导致的运输线路中断
- 夏季期间冷却水和工艺用水的可用性下降

环境与健康之间可能存在的相互关系和作用路径可见下图（自绘示意图）：




*（图示内容请提供，我可以协助加上图注或翻译图表内容）*

According to **Appendix A, the EU Taxonomy Regulation** requires a **robust climate risk and vulnerability assessment**.

Vulnerability indicates the extent to which a system is susceptible to, or unable to cope with, adverse impacts of climate change (including climate variability and extremes). Three (3) factors are of particular importance: exposition, sensitivity and adaptive capacity.

Appendix A of the EU Taxonomy regulation distinguishes between the following classifications of climate-related hazards: chronic and acute for temperature-related, wind-related, water-related and solid mass-related. This makes the knowledge and recognition of environmental conditions even more important.

| | Temperature-related | Wind-related | Water-related | Solid mass-related |
|---|---|---|---|---|
| Chronic | Changing temperature (air, freshwater, marine water) | Changing wind patterns | Changing precipitation patterns and types (rain, hail, snow/ice) | Coastal erosion |
| | Heat stress | | Precipitation or hydrological variability | Soil degradation |
| | Temperature variability | | Ocean acidification | Soil erosion |
| | Permafrost thawing | | Saline intrusion | Solifluction |
| | | | Sea level rise | |
| | | | Water stress | |
| Acute | Heat wave | Cyclone, hurricane, typhoon | Drought | Avalanche |
| | Cold wave/frost | Storm (including blizzards, dust and sandstorms) | Heavy precipitation (rain, hail, snow/ice) | Landslide |
| | Wildfire | Tornado | Flood (coastal, | Subsidence |

Source: https://ec.europa.eu/finance/docs/level-2-measures/taxonomy-regulation-delegated-act-2021-2800-annex-1_en.pdf accessed on 19 October 2023

根据欧盟《分类法条例》（EU Taxonomy Regulation）附录 A 的要求，必须开展**稳健的气候风险与脆弱性评估。**

**脆弱性（Vulnerability）**是指一个系统在多大程度上容易受到气候变化（包括气候变率与极端事件）不利影响，或无法有效应对该类影响。该评估强调三个关键因素：暴露度（Exposition）、敏感性（Sensitivity）以及适应能力（Adaptive Capacity）。

此外，附录 A 将气候相关危害分为温度相关、风力相关、水相关以及固体物质相关的"慢性（chronic）"与"急性（acute）"类型。

因此，在管理体系中，对环境条件的了解与识别变得尤为重要。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

| | 与温度有关的 | 与风有关的 | 与水有关的 | 固体质量相关 |
|---|---|---|---|---|
| Chronic | 温度变化（空气、淡水、海水） | 变化的模式 风 | 变化的降水模式和（雨、雪/冰） 类型 你好， | 海岸侵蚀 |
| Chronic | 热应激 | | 降水水文变异性 或土 | 壤退化 。 |
| Chronic | 温度变化 | | 海洋酸化 | 土壤侵蚀 |
| Chronic | 永久冻土融化 | | 盐水入侵 | 固结作用 |
| Chronic | | | 海平面上升 | |
| Chronic | | | 水分胁迫 | |
| Acute | 热浪 | 气旋、飓风、台风 | 干旱 | 雪崩 |
| Acute | 寒潮/霜冻 | 风暴（包括暴风雪、沙尘暴和沙暴） | 强降水（雨、雹、雪/冰） | 山崩 |
| Acute | 野火 | 龙卷风 | 洪水 （沿海， | 沉淀 |

## 9.3 Environmental Conditions – Definitions according to ISO 14004:2016

Excerpt from ISO 14004:2016

*An environmental condition that can affect the organization's activities, products and services can include, for example, a climatic temperature change that can prevent the organization from growing particular types of agricultural products.*

*An example of an environmental event could be **flooding as a result of extreme weather**, which can affect the organization's activities, such as **storage of hazardous substances, in order to prevent pollution**.*

*Consideration of some of the following sources of information can assist the organization to identify its environmental conditions, including events:*

a) ***meteorological, geological, hydrological** and ecological information;*
b) ***historical disaster** information related to the organization's location;*
c) *reports from previous audits, assessments, or reviews, such as initial environmental reviews or life cycle assessments, when available;*
d) *environmental monitoring data;*
e) *environmental permit or license applications;*
f) *reports on emergency situations and incidents with environmental consequences*

### 9.3 ISO 14004:2016 中关于环境条件的定义

摘录自 ISO 14004:2016：

环境条件可能会影响组织的活动、产品与服务，例如气候温度变化会使组织无法种植特定农产品。

环境事件的例子如：极端天气引发洪灾，影响危险物品储存，进而需采取污染防控措施。

可用于识别环境条件（包括事件）的信息来源：

a) 气象、地质、水文、生态类信息；

b) 与组织地点有关的历史灾害信息；

c) 过往审核、评估、初始环境评审、生命周期评估报告；

d) 环境监测数据；

e) 环境许可或执照申请材料；

f) 与环境后果相关的紧急情况与事故报告。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

# 10. Design and Development acc. To ISO 9001:2015 ISO 9001:2015 中的设计与开发要求

**When must a development process be established?**

ISO 9001:2015 no longer provides for exclusions; the requirements now only refer to possible "non-applicability". Clause 4.3. states when a requirement can be determined as "not applicable" and what the justification for this must look like.

Not establishing a development process is possible if the following questions can both be answered in the negative and justified:

- Is the requirement for a development process applicable?
- Does this requirement (or its non-fulfillment) affect the organization's ability and responsibility to ensure the conformity of its products and services with the requirements and the enhancement of customer satisfaction?

**What examples are there where the design and development of products and services is rather not applicable?**

- If the order processing is prescribed / regulated in detail by laws or standards. For example, for the installation of lightning protection systems → no room for design
- If the client organization provides very precise /detailed instructions on how to fulfill the order → no room for design
- If the order processing is always or most of the time carried out in the same way. For example, the procedure was defined in the past and is practiced in the same way for every order. Example: Classic trading → no change
- There is no innovative or hardly any creative leeway in order processing → no change.

何时必须建立开发流程?

ISO 9001:2015 不再允许"排除条款"，而是以"可不适用"为前提。

第 4.3 条指出，某项要求被视为"不可适用"时，需有充分理由说明。

如能同时否定以下两个问题并有充分理由，可不建立开发流程：

- 该开发流程要求是否适用?
- 若不适用，是否影响组织确保其产品和服务满足要求并提升客户满意度的能力和责任?

何种情形下产品与服务的设计开发通常"不适用"?

- 订单处理被法律或标准详细规范：如防雷系统安装 → 无设计空间
- 客户提供详细执行说明：组织仅按图施工 → 无设计空间
- 订单处理始终如一，固定化流程：如传统贸易流程，无变化
- 缺乏创新或创意空间的流程处理 → 不涉及开发活动


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

# 11. Life Cycle Perspective acc. to ISO 14001:2015 生命周期观点（根据 ISO 14001:2015）

(Excerpt from the Practical Handbook of Environmental Management, Vienna, 2015 – FREE TRANSLATION)

ISO 14001:2015 requires the so-called "Life cycle perspective".

The requirement of considering the life cycle perspective is like a common thread in the standard and is mentioned more than 20 times. This is a significant new requirement.

The aim is to identify potential risks and / or new opportunities for environmental performance improvement in the value chain. This is intended to prevent a possible shift in environmental aspects and associated negative environmental impacts.

The introduction to objectives and the determination of the scope of ISO 14001:2015 already address the consideration of the life cycle perspective. The objective of an environmental management system is to control or influence the way the organization's products and services are designed, manufactured, distributed, consumed and disposed by "using a life cycle perspective that can prevent environmental impacts from being unintentionally shifted elsewhere within the life cycle", explains the Standard at the beginning.

It is only in the Annex A that the important distinction is made between a "life cycle perspective" and "life cycle assessment": „When determining environmental aspects, the organization considers a life cycle perspective. This does not require a detailed life cycle assessment." The life cycle assessment is separately addressed in its own ISO standards of the ISO 14001 family of standards, namely ISO 14040 and ISO 14044 as well as ISO/TS 14072.

„Thinking carefully about the life cycle stages that can be controlled and influenced by the organization is sufficient." When the standard was adopted in India in mid-September 2015, it was once again emphasized that the aim was to optimize the value chain and make it more sustainable. In other words, the intention of this requirement is to look for opportunities to enhance the environmental performance along the value chain and thus broaden the perspective or viewing angle.

Regarding the scope of ISO 14001:2015, it states „This International Standard is applicable to any organization, regardless of size, type and nature, and applies to the environmental aspects of its activities, products and services that the organization determines it **can either control or influence considering a life cycle perspective**". There is another important statement in the Annex defining the scope: „Scoping should not be used to exclude activities, products, services, or facilities that have or can have significant environmental aspects, or to evade its compliance obligations".

Under "Terms and definitions", life cycle is defined as „consecutive and interlinked stages of a product (or service) system, from raw material acquisition or generation from natural resources to final disposal". A note to this entry in the standard provides further details: **"The life cycle stages include acquisition of raw materials, design, production, transportation/ delivery, use, end-of-life treatment and final disposal."** Acquisition is based on the direct supplier. En-of-life treatment can mean repair, reuse, recycling or recovery.

（节选自《环境管理实务手册》，维也纳，2015——自由翻译）

ISO 14001:2015 要求采取所谓的"生命周期观点（life cycle perspective）"。

生命周期观点的要求贯穿整个标准，在标准文本中被提及超过 20 次，是一个重要的新要求。

其目的在于识别价值链中可能的环境风险和/或改进环境绩效的新机遇，并避免环境因素及其不利影响在生命周期中的不同阶段之间转移。

标准在目标说明和适用范围界定时就已提出应考虑生命周期观点。标准在开头写道：环境管理体系的目标之一是通过采用生命周期观点，控制或影响组织产品和服务的设计、制造、分销、使用和处置方式，以防止环境影响在生命周期内无意中转移。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

在附录 A 中，标准进一步明确"生命周期观点"与"生命周期评价（life cycle assessment）"的区别："在识别环境因素时，组织应考虑生命周期观点。这不等于必须执行详细的生命周期评价。"
生命周期评价另有专属标准，包括 ISO 14040、ISO 14044 和 ISO/TS 14072。

标准指出："仔细思考组织可以控制或影响的生命周期阶段即可。"2015 年 9 月中旬，印度正式采纳该标准时，再次强调其目的是优化价值链并实现可持续化。因此，该要求的本质是推动组织寻找在价值链上提升环境绩效的机会，扩大其观察和思考的视角。

关于 ISO 14001:2015 的适用范围，标准指出："本国际标准适用于任何类型、规模与性质的组织，适用于其所能控制或影响的活动、产品与服务的环境因素，且需考虑生命周期观点。"
附录还强调："在定义范围时，不得为逃避义务或规避重大环境因素，而人为排除某些活动、产品、服务或设施。"

标准术语中，生命周期被定义为"产品（或服务）系统从原材料获取或自然资源生成到最终处置之间的连续且相互关联的阶段"。标准附注指出，这些阶段包括原材料获取、设计、生产、运输/交付、使用、生命周期终末处理和最终处置。
原材料获取通常基于直接供应商，终末处理可包括维修、再利用、回收或资源回收。


**Life Cycle Stages**
Which stages of the product's life cycle can the company control and/or influence?
Provided by Quality Austria, 2017; ©qualityaustria

Planning according to ISO 14001 is about addressing the risks and opportunities from the context analysis, including the needs and expectations of interested parties, from the analysis of compliance obligations such as statutory, regulatory and other obligations, as well as from the analysis and evaluation of environmental aspects and their environmental impacts; furthermore, it is about creating a targeted action plan.
In clause 6.1.2 of ISO 14001:2015, the requirements for the identification of environmental aspects become concrete: „Within the defined scope of the environmental management system, the organization shall determine the environmental aspects of its activities, products and services that it can control and those that it can influence, and their associated environmental impacts, considering a life cycle perspective."[1]. However, this brings us directly within the requirements section of ISO 14001:2015, i.e., these standard requirements must be taken into account at least in the implementation.

[1] ISO 14001, 2015, Clause 6.1.2, page 9

So, what could this mean? What impact could this have on the evaluation of environmental as-


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

pects and associated environmental impacts?

This could lead to a shift in the evaluation of the relevance of environmental aspects and associated environmental impacts; up to date, the environmental aspects such as energy consumption and air emissions have been considered for production; when taking into account also the use stages such as the type of use, duration and intensity, the environmental impact during the use phase of a product is higher than that of the manufacturing of the product. However, this would also reveal opportunities to design the product in a more environmentally friendly, and more energy or material-efficient way. This, in turn, would be an initial input for the design and development process (R&D).

It would also be conceivable to work out which preliminary product would have a lower environmental impact by evaluating the products of suppliers, in order to reduce the environmental impact in a targeted manner in advance of the company's own value creation.

In addition, it would also be possible that certain materials do not pose a risk during the use of a product but would have to be assessed as critical for the environment and occupational health and safety due to their toxicity during disposal, and thus an avoidance or substitution strategy for these critical materials would be sought and developed.

The second part of clause 8.1 "Operational planning and control" is even more precise. The requirements for the operation (operational implementation) then become very specific: *„Consistent with a life cycle perspective, the organization shall:*

*a) establish controls, as appropriate, to ensure that its environmental requirement(s) is (are) addressed in the design and development process for the product or service, considering each life cycle stage;*

*b) determine its environmental requirement(s) for the procurement of products and services, as appropriate;*

*c) communicate its relevant environmental requirement(s) to external providers, including contractors;*

*d) consider the need to provide information about potential significant environmental impacts associated with the transportation or delivery, use, end-of-life treatment and final disposal of its products and services*

This means that environmental requirements and relevant information must be incorporated into the development process, procurement, the selection of external partners, as well as sales and logistics through to recycling and final disposal. On the one hand, this involves the design of control and influence and external communication. On the other hand, this is about integrating environmental requirements and relevant environmental information into the organization's processes.

根据 ISO 14001 的规划要求，组织需处理来自情境分析的风险和机遇，包括相关方的需求与期望、法律法规义务、以及环境因素和其环境影响的分析与评估；并制定有针对性的行动方案。

在 ISO 14001:2015 第 6.1.2 条中，环境因素识别要求变得具体："在环境管理体系的定义范围内，组织应识别其活动、产品和服务所涉及的环境因素，包括其可以控制或影响的因素及其相关环境影响，并考虑生命周期观点。"这项要求直接属于标准的实施条款，必须在执行中被纳入考量。

**生命周期观点的意义与影响**

这可能导致对环境因素及其环境影响的相关性评估发生转变。

以往常聚焦于生产阶段的能源消耗与排放问题，但如果也考虑使用阶段（如使用方式、时间与频率），那么产品在使用阶段的环境影响可能超过制造阶段。

这将为产品设计提供环境友好型、节能节材型的改进机会，成为设计与研发阶段的重要输入。

还可通过评估供应商的预制品，选出更具环境优势的方案，从源头减少环境负荷。

此外，某些材料在产品使用阶段可能无风险，但在处置阶段却因其毒性对环境或职业健康造成影响，从而需提前制定替代或规避策略。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

**操作策划与控制条款的细化（第 8.1 条）**

生命周期观点下，组织需：

a) 在产品或服务的设计与开发过程中设立控制措施，确保环境要求被纳入每一生命周期阶段；

b) 明确产品与服务采购过程中的环境要求；

c) 向外部供方（包括承包商）传达其相关环境要求；

d) 考虑是否需向客户传达有关产品运输、使用、终末处理及最终处置阶段的潜在重大环境影响的信息。

也就是说，环境要求与相关信息需贯穿设计开发、采购、外包管理、销售、物流直至回收与处置全过程。

这不仅关系到外部沟通与控制机制的建立，还涉及将环境要求与相关信息整合进组织的业务流程。

## 11.1 Excerpt from ISO 14004:2016 Environmental Aspects / Life Cycle Perspective

*A life cycle perspective includes consideration of the environmental aspects of an organization's activities, products and services that it can control or influence. Stages in a life cycle include acquisition of raw materials, design, production, transportation/delivery, use, end-of-life treatment and final disposal.*

*When applying a life cycle perspective to its products and services, the organization should consider the following:*

- *the stage in the life cycle of the product or service;*
- *the degree of control it has over the life cycle stages, e.g., a product designer may be responsible for raw material selection, whereas a manufacturer may only be responsible for reducing raw material use and minimizing process waste and the user may only be responsible for use and disposal of the product;*
- *the degree of influence it has over the life cycle, e.g., the designer may only influence the manufacturers production methods, whereas the manufacturer may also influence the design and the way the product is used or its method of disposal;*
- *the life of the product;*
- *the organization's influence on the supply chain;*
- *the length of the supply chain;*
- *the technological complexity of the product.*

*The organization can consider those stages in the life cycle over which it has the greatest control or influence, as these may offer the greatest opportunity to reduce resource use and minimize pollution or waste.*

## 11.1 ISO 14004:2016 中对环境因素与生命周期观点的说明

生命周期观点包含组织对其活动、产品与服务的环境因素的控制与影响能力的考量。生命周期的各阶段包括原材料获取、设计、生产、运输/交付、使用、终末处理与最终处置。

在应用生命周期观点时，组织应考虑以下内容：

- 产品或服务所处的生命周期阶段
- 组织对生命周期各阶段的控制程度（例如，设计者负责选材，制造商负责减材和控制废料，用户负责使用与处置）
- 对生命周期的影响程度（如设计师可影响制造方式，制造商也可反向影响设计与使用方式）
- 产品寿命
- 对供应链的影响能力及其长度
- 产品的技术复杂性

组织可优先考虑自身最具控制或影响力的生命周期阶段，以获得最大资源节约与减污减废效益。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## 11.2 Excursus ISO 9001:2015

The consideration of applicable statutory and regulatory requirements in determining the requirements for products and services as stated in 8.2.2 of the quality management standard ISO 9001:2015 could lead to possible relevant eco-design regulations having to be taken into account. In clause 8.5.5, "post-delivery activities", ISO 9001:2015 requires that, in determining the extent of the post-delivery activities that are required, the organization shall consider the nature, use and intended lifetime of its products and services. Such activities are described in more detail in a Note as actions under warranty provisions, contractual obligations such as maintenance services, and supplementary services such as recycling or final disposal.

### 11.2 延伸内容：ISO 9001:2015 中的相关要求

在 ISO 9001:2015 第 8.2.2 条中，规定了在确定产品与服务要求时需考虑适用的法律法规。这可能意味着，需将生态设计（eco-design）法规纳入考量。

在第 8.5.5 条"交付后活动"中，标准要求：组织在确定交付后活动范围时，应考虑其产品与服务的性质、使用方式及预期寿命。

这些活动可包括保修义务下的行为、合同约定的维护服务以及额外服务（如回收与最终处置）。

## 11.3 Excursus Ecodesign Directive

The Ecodesign Directive aims to define mandatory minimum requirements, e.g. for the energy efficiency for individual product groups such as electric motors, televisions, air-conditioning units, computers, street lighting, circulating pumps etc.

Based on these directives, product group-specific implementing measures, usually in the form or regulations, are developed and adopted.

Alternatively, the industry may submit relevant industry self-regulatory initiatives (SRI). Both the regulations and the relevant industry self-regulatory initiatives could then become binding obligations depending on the industry (product group).

So far, the focus has been on increasing energy efficiency. Requirements to increase material efficiency are to follow.

Note: This is now also being pursued in a targeted and consistent manner by the New Green Deal. The Life Cycle Assessment is gaining in importance, as the following graphic shows:

### 11.3 延伸内容：生态设计指令（Ecodesign Directive）

生态设计指令旨在为特定产品组（例如电动机、电视机、空调设备、计算机、道路照明、循环泵等）的能效设定强制性最低要求。

基于该指令，通常以法规形式制定并采纳针对不同产品组的具体实施措施。

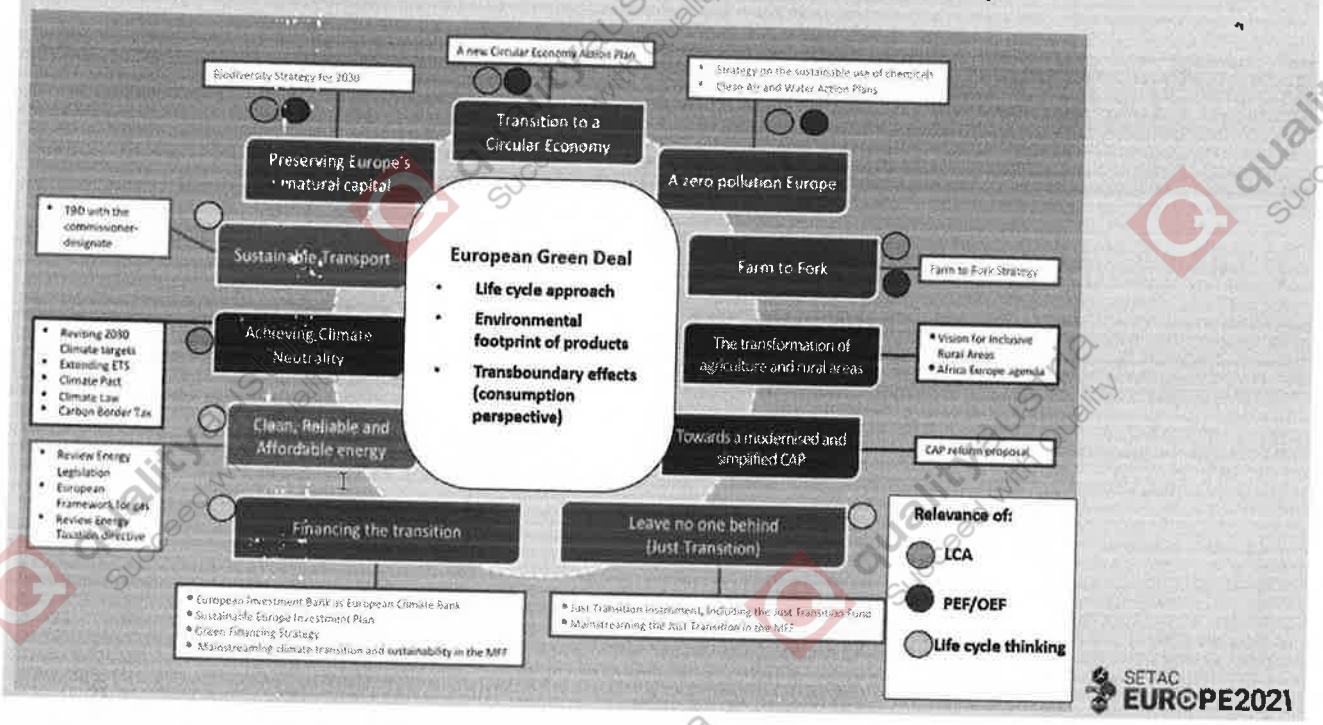
作为替代方案，行业也可提交相关的行业自律性倡议（SRI）。这些法规或行业自律性倡议，视产品组所属行业的不同，也可能成为具有约束力的义务。

迄今为止，重点主要集中在提升能源效率。下一步将要求提高材料使用效率。

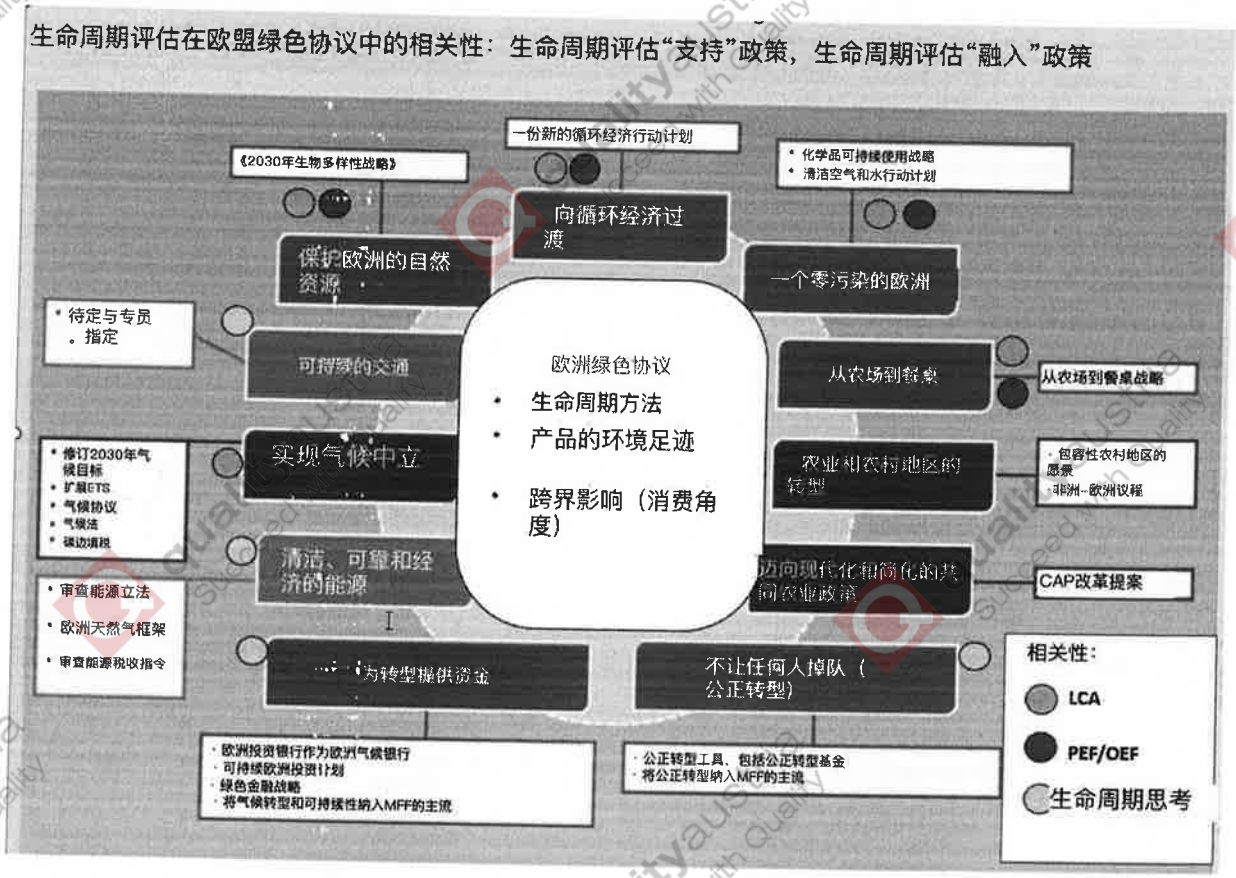
注：目前，这一方向也正在由"绿色新政（New Green Deal）"以有针对性且一致的方式推进。生命周期评估（LCA）的重要性正日益提升，如下图所示。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## Relevance of LCA in the EU Green Deal: LCA "in support" to policy and LCA "into" policy




## 生命周期评估在欧盟绿色协议中的相关性：生命周期评估"支持"政策，生命周期评估"融入"政策





Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

# 12. ISO 45001:2018 – Important Notes

The following is only a list of the additional points to the standard that need to be taken into account. The full standard is available on the **quality**austria Intranet.

# 12. ISO 45001:2018 – 重要说明

以下仅列出在审核或实施中需额外关注的标准要点，完整标准可在 Quality Austria 内部系统中获取。

## 12.1 Aim and Purpose of ISO 45001:2018

- ISO 45001 should manage the following at the workplace:
- The conditions and factors that affect, or can affect, the
  - health and
  - safety
    - of workers (including temporary workers, contractors)
    - of visitors or
    - other persons

  in order to prevent work-related injury or ill-health.

## 12.1 ISO 45001:2018 的目标与目的

ISO 45001 应在工作场所管理以下内容，以预防与工作相关的伤害或健康问题：

- 影响或可能影响的条件与因素
- 员工的健康与安全（包括临时工和承包商）
- 访客的健康与安全
- 其他相关人员的健康与安全

## 12.2 PDCA Cycle in ISO 45001:2018

- The most important difference in the PDCA cycle is the implementation of **worker participation** in leadership, as well as the expectations of workers in the context of the organization.

## 12.2 PDCA 循环在 ISO 45001:2018 中的变化

- 最显著的不同点是将员工参与与员工期望纳入组织领导力的考虑中，成为 PDCA 循环中的一部分。

## 12.3 Terms and Definitions in ISO 45001:2018

- (Concerns the German version): Be careful with terms that sometimes deviate from the technical terms commonly used in Austria; particularly in relation to Austrian Laws and Regulations.

## 12.3 术语定义

- （针对德文版）应特别注意某些术语可能与奥地利法律法规中常用的专业术语不同，翻译时需留意准确性。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## 12.4 Context of the Organization in ISO 45001:2018

- The consideration of worker expectations can be demonstrated through various activities or actions:
  - Occupational Health and Safety Committee meeting, OH&S assessments for companies with more than 100 employees;
  - Target discussions or employee interviews, workshops, etc.;
  - Collective bargaining agreements and works council agreements can also partially reflect the expectations of workers;
  - Additional possibilities, for example CIP ideas, results from surveys of psychosocial stress, periodical employee surveys (satisfaction), etc.

## 12.4 组织情境分析（Context）

员工期望的考虑可通过以下活动体现：
职业健康与安全委员会会议、员工面谈与目标讨论、超过 100 人的公司需执行 OH&S 评估；集体协议与员工代表协议也可能体现员工期望；也可参考 CIP 改进建议、心理社会压力调查、员工满意度问卷等结果。

## 12.5 Leadership in ISO 45001:2018

- Workers must be involved in the leadership and commitment. This can vary (OH&S assessments for companies with more than 100 employees, target discussions or employee interviews, workshops, etc.).
- The involvement of the management personnel responsible for occupational health and safety at the highest level, is **now mandatory as an audit interview** (see MD 22).
- The term "accountability" refers to the highest level of responsibility for decisions on occupational health and safety in the company (in German: employer = Arbeitgeber in ASchG or responsible Representative = verantwortlich Beauftragte)

### 12.5 领导力

- 必须让员工参与到职业健康与安全的领导与承诺中，如员工访谈、目标讨论、车间会议等方式。
- 最高层的职业健康与安全负责人必须参与审核访谈（依据 IAF MD 22）。
- "Accountability（问责）"指公司中对职业健康与安全决策负最终责任的角色（例如，奥地利《ASchG》法律下的"雇主"或"指定负责人"）。

## 12.6 Planning in ISO 45001:2018

- In this clause, the requirements for workplace evaluation and the other requirements for occupational health and safety are to be understood in the broadest sense.
- A direct link to points from the context analysis must be shown.
- ATTENTION:
  - Emergency situations must also be taken into account, not only normal operation.
  - The legal requirements and other requirements must take into account the relevant specifications, such as chapters of collective bargaining agreements.
- **Any intentional or persistent failure to comply with legal requirements must be considered a serious failure to meet the compliance obligations under OH&S policy.** This must result in an ineligibility for certification or in the suspension or withdrawal of an existing OH&S MS certification.
- The organization must be able to demonstrate that it has achieved compliance with legal OH&S requirements based on a self-assessment. We do not audit the entire system, but we take audit samples (objective evidence) that verify the truth of the organization's own statements.


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

ATTENTION:

- We are competent auditors who assess a management system, not inspectors who carry out a comprehensive legal audit.
- If it is determined that **elementary basics of an occupational health and safety management system are not met**, a **major nonconformity** shall be issued, since compliance with legal OH&S requirements cannot be demonstrated. For example:
  - a **workplace evaluation** in accordance with § 4 ASchG (determination of actions) is (currently) not available, or
  - a §14 ASchG instruction etc. is (currently) not available, or
  - **no safety expert** has been appointed in accordance with § 73 ASchG,

  ***Note: are there similar legal requirements in your country?***
  - etc.

## 12.6 规划（Planning）

本条款应广义理解工作场所评估与其他职业健康安全要求。必须展示与组织情境分析的直接关联。
注意：

- 应急情况必须纳入考量，不能仅限于正常运营。
- 法律及其他义务应包括如集体协议等约定内容。
- 有意或持续违反法律义务的行为视为对 OH&S 政策合规义务的严重违反，**应导致不予认证或暂停/撤销认证资格。**
- 组织应通过自评证明符合法律要求。审核员仅抽样验证其真实性，而非进行全面法律检查。

  注意：
  我们是**管理体系审核员**，不是执行法律执法的监察人员。
  如果发现组织未满足职业健康安全管理体系的基本要素，将签发**严重不符合项（重大不符合）**，例如：
  - 缺少符合 ASchG §4 的工作场所评估（包含行动计划）
  - 缺少 ASchG §14 的法定指令或记录
  - 未按 ASchG §73 指定安全专家
  - .....（可视本国法律比照）

## 12.7 Support in ISO 45001:2018

- Evaluate the effectiveness of the actions taken and ensure that workers are competent and have the ability to identify hazards. In addition to the **job descriptions, the Ordinance on Proof of Expertise** and similar legal requirements must also be considered in this clause.
- Support applies not only to those persons who are directly or indirectly involved in the development of products and services, but to all persons who work in the organization. ATTENTION: connection to occupational health and safety.
- In the communication process, compliance with legal requirements and the expectations defined in the context must also be taken into account.

### 12.7 支持（Support）

- 需评估已采取措施的有效性，并确保员工具备识别危害的能力。除岗位说明书外，还应参考《能力证明条例》等法律要求。
- 支持适用于组织中所有人员，不仅限于直接或间接参与产品与服务开发者。注意：此处应与职业健康安全管理体系紧密连接。
- 在沟通过程中，也要考虑法律要求与组织情境中相关方的期望。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## 12.8 Operation in ISO 45001:2018

- ATTENTION if there are several employers at one workplace. In this case, the key question must be asked, who is the general contractor or who has responsibility (construction site coordinator) for occupational health and safety.
- The hierarchy of control recommends the STOP principle, but this is not mandatory; other "defined" hierarchy models may also be used.
- If temporary workers (leasing personnel) are employed, care must be taken to ensure that the **requirements of the Temporary Employment Act are complied** with (information about hazards before leasing out, etc.). **Outsourcing due to the transfer of risk is not permitted**.
- In the case of outsourcing, scrutinize the background and, above all, how the responsibility is defined and divided.
- The emergency response exercises do not necessarily have to be large-scale exercises, but the legal framework must be ensured (e.g., trade permit, Industrial Accident Ordinance etc.)

## 12.8 运行（Operation）

- 如一个工作场所存在多个雇主，必须明确谁是总承包商或谁承担职业健康与安全的总体责任（例如施工协调人）。
- 控制层级应依据 STOP 原则，但非唯一方式；其他正式建立的层级模型也可使用。
- 使用临时工（派遣人员）时，必须确保遵守《临时用工法》的要求（如在派遣前提供危害信息）。不得因转移风险而将 OH&S 责任外包。
- 若实施外包，必须明确其背景及责任划分方式。
- 应急演练不一定要大规模开展，但必须符合法律要求（如行业许可证、工伤事故条例等）。

## 12.9 Improvement in ISO 45001:2018

- ATTENTION: in the case of accidents, work-related illness, occupational diseases, incidents etc., take into account the legal requirements for improvement:
  - What did the company define as cause and as consequence in the accident report – how was this demonstrably implemented?
  - It must be questioned how the connection to the CIP system of the organization is or how the internal specifications and legal requirement for improvement are adhered to.

## 12.9 改进（Improvement）

注意：如发生事故、职业病、职业相关疾病或其他事件，应依据法律要求进行改进：

- 企业在事故报告中如何界定原因与后果？这些措施是否落实到位并有证据？
- 应追问这些改进与 CIP（持续改进）系统或组织内部/法定改进机制的关联性及其执行状况。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

# 13. Performance – Performance Evaluation – Continual Improvement

The audit reports must **reflect statements on the performance of the management system and the continual improvement** and thus also support a positive certificate decision (veto). Examples for this are given below for each standard.

The **evaluation of continual improvement** is ideally based on the definition of a baseline and the development towards it.

# 13. 绩效——绩效评估——持续改进

审核报告必须能够反映管理体系的绩效表现及其持续改进情况，从而为积极的认证决定（或否决权）提供支持。每个标准的具体示例如下。

持续改进的评估理想上应基于基准线的设定及其发展趋势。

## 13.1 Performance Indicators for ISO 9001

What is understood by performance indicators in a process approach?
Performance indicators are characteristic properties that have a significant influence on measurable results. Often, the purpose of a process in relation to the results of the QMS (e.g., meeting customer requirements, enhancing customer satisfaction) cannot be directly mapped in measurable quantities, therefore "indicators" with significant influence on these performance quantities are to be determined (customer feedback from surveys or complaints, likes on social media, sales figures etc.).

- Development of productivity
- Development of customer complaints
- Customer satisfaction in school grades or NPS
- Internal complaints
- Rejects
- Development of quality costs
- Statements on guarantees
- Statements on warranties
- Degree of objective achievement
- Employee satisfaction

## 13.1 ISO 9001 的绩效指标

在过程方法中，绩效指标的含义是什么？
绩效指标是对可测量结果具有重大影响的特性属性。由于质量管理体系的目标（如满足客户要求、提升客户满意度）往往无法直接量化，因此应确定对这些结果具有显著影响的"间接指标"（如客户调查或投诉反馈、社交媒体点赞数、销售数据等）。
例如：

生产率的发展情况
客户投诉的发展趋势
客户满意度（如学校评分/NPS 指数）


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

内部投诉数量
不合格品率
质量成本的发展趋势
关于保修或质保的声明
目标达成程度
员工满意度

## 13.2 Environmental Management

**Note I**: From 2025, respectively 2026, large enterprises will have to disclose relevant environmental performance indicators in accordance with **EFRAG ESRS E1 to E 5**. Environmental indicators that have already been required are defined here.
The presentation of performance becomes a requirement in the disclosure.

Key performance indicators here acc. to the EU Taxonomy regulation, which are also reflected in the disclosure requirements according to the EFRG Standards, are:

- Turnover: Proportion of turnover from products or services associated with Taxonomy-aligned economic activities (environmentally sustainable).
- CapEx: Proportion of capital expenditure from products or services associated with Taxonomy-aligned economic activities (environmentally sustainable).
- OpEx: Proportion of operating expenditure from products or services associated with Taxonomy-aligned economic activities (environmentally sustainable).

## 13.2 环境管理的绩效指标

**说明 I:**

自 2025/2026 年起，大型企业需根据 EFRAG 的 ESRS E1–E5 披露相关环境绩效指标，与 EU 分类法中的信息保持一致。

**关键指标包括:**

- **营业收入**中来自分类法对齐（环保）经济活动的比例
- **资本支出**中来自分类法对齐经济活动的比例
- **运营支出**中来自分类法对齐经济活动的比例

**Note II**: Annex IV of EMAS defines the core environmental performance indicators and how they are to be disclosed in the environmental statement. The obligatory core indicators focus on the following key environmental areas:

- Energy efficiency
- Materia efficiency
- Water
- Waste
- Land use with regard to biodiversity; and
- Emissions

**Absolute values, relative values** (relation to the unit of production) and **trends** are to be presented. EMAS promotes the **continual improvement**.

**说明 II:**

EMAS 附录 IV 定义了核心环境绩效指标及其披露方式，重点领域包括：

- 能源效率
- 材料效率
- 水资源利用
- 废弃物
- 生物多样性相关的土地利用
- 排放量

**必须披露:**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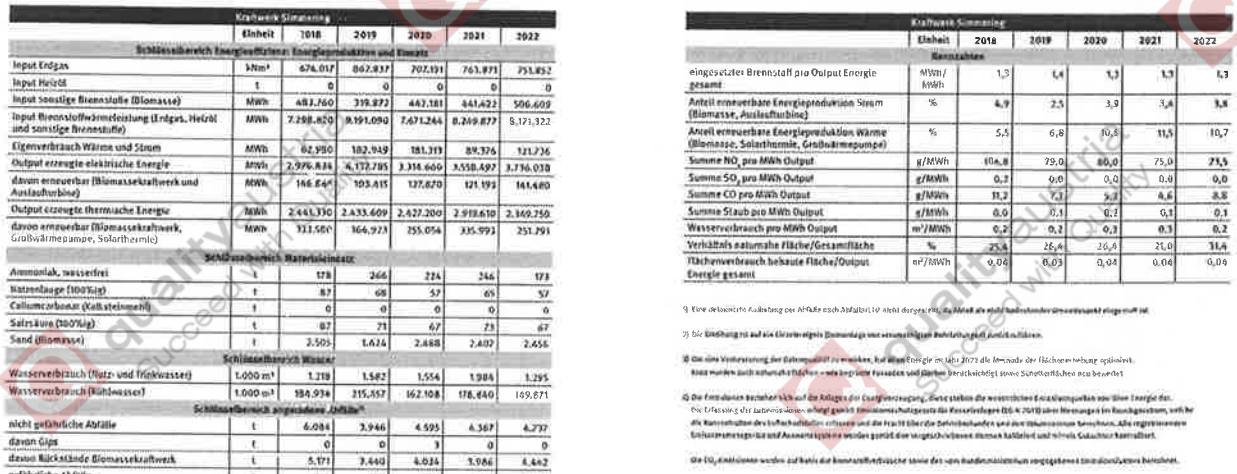
- 绝对值
- 相对值（每单位产出）
- 趋势变化

EXAMPLE:

**Kernindikatoren** **Kennzahlen**



| Kraftwerk Simmering | Einheit | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|
| **Schlüsselbereich Energieaufbringung: Energieproduktion und Einsatz** | | | | | | |
| Input Erdgas | kNm³ | 676.017 | 867.937 | 707.191 | 763.871 | 751.852 |
| Input Heizöl | t | 0 | 0 | 0 | 0 | 0 |
| Input sonstige Brennstoffe (Biomasse) | MWh | 483.760 | 399.972 | 447.181 | 441.422 | 506.609 |
| Input Brennstoffwärmeleistung (Erdgas, Heizöl und sonstige Brennstoffe) | MWh | 7.298.820 | 9.191.090 | 7.671.244 | 8.249.877 | 8.171.322 |
| Eigenverbrauch Wärme und Strom | MWh | 62.980 | 102.949 | 181.319 | 89.376 | 121.736 |
| Output erzeugte elektrische Energie | MWh | 2.976.834 | 4.172.785 | 3.314.669 | 3.558.497 | 3.736.038 |
| davon erneuerbar (Biomassekraftwerk und Austauschturbine) | MWh | 146.644 | 103.415 | 127.870 | 121.193 | 141.680 |
| Output erzeugte thermische Energie | MWh | 2.441.330 | 2.433.609 | 2.427.200 | 2.918.610 | 2.349.750 |
| davon erneuerbar (Biomassekraftwerk, Großwärmepumpe, Solarthermie) | MWh | 311.560 | 166.923 | 255.054 | 335.993 | 251.791 |
| **Schlüsselbereich Materialeinsatz** | | | | | | |
| Ammoniak, wasserfrei | t | 178 | 266 | 224 | 246 | 173 |
| Natronlauge (100%ig) | t | 87 | 68 | 57 | 65 | 57 |
| Calciumcarbonat (Kalksteinmehl) | t | 0 | 0 | 0 | 0 | 0 |
| Salzsäure (100%ig) | t | 87 | 71 | 67 | 73 | 67 |
| Sand (Biomasse) | t | 2.505 | 1.616 | 2.488 | 2.402 | 2.456 |
| **Schlüsselbereich Wasser** | | | | | | |
| Wasserverbrauch (Nutz- und Trinkwasser) | 1.000 m³ | 1.218 | 1.582 | 1.554 | 1.384 | 1.295 |
| Wasserverbrauch (Kühlwasser) | 1.000 m³ | 184.934 | 215.457 | 162.108 | 178.640 | 169.871 |
| **Schlüsselbereich angefallene Abfälle*** | | | | | | |
| nicht gefährliche Abfälle | t | 6.084 | 3.946 | 4.595 | 6.367 | 4.737 |
| davon Gips | t | 0 | 0 | 3 | 0 | 0 |
| davon Rückstände Biomassekraftwerk | t | 5.171 | 3.440 | 4.034 | 5.986 | 4.442 |
| gefährliche Abfälle | t | 316 | 209 | 526 | 256 | 566 |
| **Schlüsselbereich landschaftliche Vielfalt*** | | | | | | |
| Flächenverbrauch (bebaute, versiegelte Fläche) | m² | 238.451 | 221.111 | 221.111 | 240.191 | 217.990 |
| naturnahe Flächen (inkl. begrünte Fassaden und Dächer) | m² | 81.281 | 79.189 | 79.189 | 63.661 | 99.971 |
| **Schlüsselbereich Emissionen*** | | | | | | |
| $CO_2$-Äquivalent (fossile $CO_2$-Emissionen durch die Energieerzeugung) | 1.000 t | 1.359 | 1.776 | 1.446 | 1.563 | 1.534 |
| $NO_x$ (Stickoxide) | t | 568 | 519 | 459 | 486 | 447 |
| $SO_2$ (Schwefeldioxid) | t | 1 | 0 | 0 | 0 | 0 |
| CO (Kohlenmonoxid) | t | 61 | 48 | 30 | 30 | 56 |
| Staub | t | 0 | 0 | 1 | 1 | 1 |
| $SF_6$ | kg | 0 | 0 | 0 | 0 | 0 |

| Kraftwerk Simmering | Einheit | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|
| **Kennzahlen** | | | | | | |
| eingesetzter Brennstoff pro Output Energie gesamt | MWh/MWh | 1,3 | 1,4 | 1,3 | 1,3 | 1,3 |
| Anteil erneuerbare Energieproduktion Strom (Biomasse, Austauschturbine) | % | 4,9 | 2,5 | 3,9 | 3,4 | 3,8 |
| Anteil erneuerbare Energieproduktion Wärme (Biomasse, Solarthermie, Großwärmepumpe) | % | 5,5 | 6,8 | 10,5 | 11,5 | 10,7 |
| Summe $NO_x$ pro MWh Output | g/MWh | 104,8 | 79,0 | 80,0 | 75,0 | 71,5 |
| Summe $SO_2$ pro MWh Output | g/MWh | 0,2 | 0,0 | 0,0 | 0,0 | 0,0 |
| Summe CO pro MWh Output | g/MWh | 11,2 | 7,3 | 5,2 | 4,6 | 8,8 |
| Summe Staub pro MWh Output | g/MWh | 0,0 | 0,1 | 0,2 | 0,1 | 0,1 |
| Wasserverbrauch pro MWh Output | m³/MWh | 0,2 | 0,2 | 0,3 | 0,3 | 0,2 |
| Verhältnis naturnahe Fläche/Gesamtfläche | % | 25,4 | 26,4 | 26,6 | 21,0 | 31,4 |
| Flächenverbrauch bebaute Fläche/Output Energie gesamt | m²/MWh | 0,06 | 0,03 | 0,04 | 0,06 | 0,06 |

Figure: Excerpt from the *Wien Energie* Environmental Statement 2023 on the Simmering Power Plant including Biomass power plant, page 68 et seqq.
**示例：**维也纳能源公司 Simmering 发电站（含生物质）2023 年环境声明，第 68 页起。

Progress towards achieving environmental objectives can generally be measured with environmental performance indicators – see also ISO 14004 – for example:

- Amount of raw material and energy used;
- Number of emissions, such as $CO_2$, $NO_x$, PM
- Waste generated per quantity of final product;
- Efficiency of material and energy used;
- The number of environmentally relevant incidents (e.g., limit values exceeded);
- The number of environmentally relevant accidents (e.g. unforeseen release);
- Percentage of waste recycled;
- Percentage of recycled material used for packaging;
- The number of company car kilometers per production unit;
- Number of specific pollutants emitted, e.g., $NO_x$, $SO_x$, CO, VOC, Pb and CFC;
- Investments in environmental protection;
- The number of criminal prosecutions; total administrative fines;
- Land areas designated as wildlife habitat;
- The number of people trained in identifying environmental aspects;
- Percentage of budget spent on low-emission technologies.

Other environmental performance indicators can include:

- Degree of target achievement
- Number of recommendations for improvement and the recommendations already implemented thereof.
- Share of renewable energy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Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
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- Number of justified complaints, for example due to noise, odor, etc.
- Complaints from NGOs
- Material health in the product – Exclusion of CMR and endocrine disrupting agents
- Number of articles of positive reporting

**可衡量环境目标进展的绩效指标：**

- 原材料和能源使用量
- 二氧化碳、氮氧化物、颗粒物等排放量
- 每单位成品的废弃物产生量
- 材料与能源利用效率
- 与环境相关事件数量（如限值超标）
- 与环境相关事故数量（如泄漏）
- 废弃物回收比例
- 包装中再生材料占比
- 公司车辆单位产量行驶公里数
- 排放的特定污染物（$NO_x$、$SO_x$、CO、VOC、铅、CFC 等）
- 在环保方面的投资金额
- 刑事起诉次数、行政罚款总额
- 被划定为野生动物栖息地的土地面积
- 接受环境因素识别培训的人数
- 用于低排放技术的预算比例

**其他指标：**

- 环境目标达成度
- 改进建议数量及实施比例
- 可再生能源使用比例
- 合理投诉数量（噪音、异味等）
- 来自 NGO 的投诉
- 产品材料健康性（排除 CMR 和干扰内分泌物质）
- 有关产品的正面媒体报道数量

## 13.3 Performance Indicators in Energy Management

At this point, reference is also made to ISO 50006:

## 13.3 能源管理的绩效指标

可参考 ISO 50006 以建立指标系统。

| EnPI type | Useful for | Examples | Observation |
|---|---|---|---|
| Measured energy value | - Measuring reductions in absolute use or consumption of energy<br>- Meeting regulatory requirements based on absolute savings<br>- Monitoring and control of energy stocks and costs<br>- Understanding trends in energy consumption<br>- Obtained when measurement of energy consumption is given by a meter, with or without a conversion factor | - Energy consumption (kWh) for lighting<br>- Fuel consumption (GJ) of boilers<br>- Electricity consumption (kWh) during peak hours<br>- Peak demand (kW) in month<br>- Total energy savings (GJ) from energy efficiency related programmes | - Does not take into account the effects of relevant variables, giving misleading results for most applications<br>- Does not measure energy efficiency |


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| EnPI 型 | 有用的 | 示例 | 观察 |
|---|---|---|---|
| 测量能量值 | - 衡量能源绝对使用或消耗的减少<br>- 根据绝对节省满足监管要求<br>- 能源储存和成本的监控和控制<br>- 了解能源消耗的趋势<br>- 当能量消耗的测量由仪表给出，无论是否使用转换系数时获得 | 照明能耗（kWh）<br>锅炉燃料消耗（GJ）<br>峰值用电（kWh）<br>- 月中需求峰值（kW）<br>- 能源效率相关方案的总能源节约量（吉焦耳） | - 没有考虑相关变量的影响，对大多数应用给出误导性的结果<br>- 不测量能源效率 |

| EnPI type | Useful for | Examples | Observation |
|---|---|---|---|
| Ratio of measured values | - Monitoring energy efficiency of systems that have only one relevant variable<br>- Monitoring systems where there is little or no base load<br>- Standardizing comparisons across multiple facilities or organizations (benchmarking)<br>- Meeting regulatory requirements based on energy efficiency<br>- Understanding energy efficiency trends<br>- Can express the energy efficiency of a piece of equipment or a system | - kWh/tonne of production<br>- GJ/unit of product<br>- kWh/$m^2$ of floor space<br>- GJ/man-day<br>- litres of fuel per passenger kilometre<br>- Conversion efficiency of a boiler (%)<br>- Input energy/output energy (for instance, "heat rate" in power generation facilities)<br>- kWh/MJ for cooling systems<br>- kW/$Nm^3$ for compressed air systems<br>- L/100km<br>- kWh/value-added in unit of currency<br>- kWh/unit of sales | - Does not account for base load and nonlinear energy use effects; will be misleading for facilities with a large base load |
| Statistical model | - System with several relevant variables<br>- System with base load energy consumption<br>- Where comparison requires normalization<br>- Modelling complex systems where the relationship between energy performance and the relevant variables can be quantified;<br>- Organizational level energy performance with several relevant variables<br>- Illustrates the relationship between energy consumption and relevant variables | - Energy performance of a production facility with two or more product types<br>- Energy performance of a facility having a base load<br>- Energy performance of a hotel with variable occupancy rate and outside temperature<br>- Relationship between the energy consumption of a pump/fan and the flow rate | - For models with multiple variables relationships can be difficult to determine and models can take time to create and can be difficult to ensure accuracy<br>- May not be clear if any residual error is due to modelling error or lack of control over energy consumption<br>- May be inaccurate if not confirmed by statistical tests<br>- Requires a detailed system understanding to define the correct functional form of relationship expected when data are not linear<br>- Models should be maintained to ensure valid results |


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Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
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| EnPI 型 | 适用于 | 例子 | 观察 |
|---|---|---|---|
| 测量值比率 | - 监测只有一个相关变量的系统的能源效率<br>- 在基荷负荷很少或没有的情况下进行监测的系统<br>- 标准化在多个设施或组织之间的比较（基准比较）<br>- 根据能源效率满足监管要求<br>- 了解能源效率趋势<br>- 可以表达一台设备或系统的能效 | - 千瓦时/吨产量<br>-GJ/单位产品<br>- 平方米建筑面积的千瓦时<br>- GJ/人日<br>- 每乘客公里消耗的燃料升数<br>- 锅炉的转换效率（%）<br>- 输入能量/输出能量（例如，发电设施的"热率"）<br>- 冷却系统的千瓦时/兆焦耳<br>- 压缩空气系统的kW/Nm3<br>- 每100公里1升<br>- 千瓦时/增值单位货币<br>千瓦时/销售单位 | - 没有考虑基荷和非线性能源使用的影响；对于基荷较大的设施将具有误导性 |
| 统计模型 | - 具有多个相关变量的系统<br>- 具有基荷能源消耗的系统<br>- 当比较需要归一化时<br>- 建模复杂系统，其中能量表现和相关变量之间的关系可以量化；<br>- 组织层面的能量表现与几个相关变量<br>- 说明能源消耗与相关变量之间的关系 | - 具有两种或多种产品的生产设施的能源性能<br>- 具有基荷的设施的能量性能<br>- 酒店能源性能随入住率和室外温度变化<br>- 泵/风扇的能量消耗与流量之间的关系 | -对于具有多个变量的模型，关系可能难以确定，模型可能需要时间创建，并且可能难以确保准确性<br>- 可能不清楚剩余误差是否是由于建模误差或缺乏对能源消耗的控制。<br>- 如果未经统计测试确认，可能不准确<br>- 需要详细的系统基础知识，以定义在数据非线性的情况下预期关系的正确功能形式<br>- 应维护模型以确保有效结果 |

## 13.3.1 Potential Factors Affecting Energy Consumption

The **variables affecting** energy efficiency are identified (examples):

- Product mix
- Utilization of plants / facilities / equipment (sales planning)
- Ambient temperature (heating degree days, cooling degree days)
- Productivity (plant availability, availability of primary material, rejects)
- Machine operation in the paper industry (paper tear, use of chemicals, pulp quality)
- Selection of crude oil in the petrochemical industry (energy content, sulfur content)
- Storage of scrap in external warehouses during winter (foundry)
- Line losses: less consumption is measured than accounted for
- Peak load management: exclusion of plants in energy-intense production (monitoring load profile)
- Agility: energy monitoring enables a rapid response to changing conditions
- Budgeting: energy costs are budgeted (basic sales planning)
- Interrelationships: the energy planning process supports the identification of cause-and-effect relationships (action planning)
- Process orientation: processes are planned and optimized taking into account environmental and energy aspects
- Evidence-based decision making: decisions are made on the basis of data and predictions

- Plant evaluation analogous to workplace evaluation (determining influencing factors/ hazards and deriving actions)
- Climate neutrality: the carbon footprint can be calculated on the basis of the energy balance (ISO 14064)
- Life cycle perspective of products in terms of $CO_2$ becomes possible (see also life cycle perspective in ISO 14001:2015)
- Product design: consideration of energy efficiency and $CO_2$ emissions in the early stages of product / technology design and development (environmentally friendly / sustainable product design)
- Synergies **with occupational health and safety** are possible and have been realized:
- Better lighting concept saves costs, enhances concentration and reduces fatigue
- In some cases, light fixtures were covered due to conversions; this was not assessed in the workplace evaluation
- Synergies with waste and environment: Hg-vapor lamps have been replaced: in the future, also synergies with waste management – avoidance of hazardous waste
- Synergies with risk management: identifying risks of failure
- Synergies to increase quality

### 13.3.1 影响能源消耗的潜在因素

**变量示例：**

- 产品组合变化
- 设备利用率（如销售计划）
- 外界温度（冷负荷日、热负荷日）
- 生产率（设备运行率、原材料可得性、废品率）
- 造纸行业的机器运行参数（纸张断裂、化学品用量、纸浆质量）
- 石化行业中原油选择（能量含量、硫含量）
- 冬季废料储存在外部仓库（如铸造业）
- 线路损耗：实际耗能低于账面
- 峰值负荷管理：高能耗设备移出负荷曲线
- 灵活性：能源监控支持快速反应
- 预算控制：能源成本纳入销售预算
- 因果分析：能源规划识别因果关系并制定行动
- 过程导向：在规划时考虑环境与能源因素
- 证据决策：依赖数据与预测决策

**其他维度：**

- 类似工作场所评估方式对设备进行评估（影响因素、措施）
- **碳中和**：通过能源平衡计算碳足迹（参照 ISO 14064）
- **生命周期视角**：产品在 $CO_2$ 排放上的全过程视角（参见 ISO 14001）
- **产品设计**：在早期纳入能效与碳排考虑，实现绿色设计

**协同效应示例：**

- 与职业健康安全的协同：改善照明→省电、提高专注力、减少疲劳
- 与环境与废弃物的协同：更换汞灯→减少危险废物
- 与风险管理协同：识别运行故障风险
- 与质量提升协同：通过节能与过程优化提升产品一致性


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## 13.4 Performance Indicators in Occupational Health and Safety Management

- Number of serious accidents
- Number of serious accidents according to MD 22
- Number of reportable accidents
- Number of days lost
- Number of Near Misses
- Number of recommendations for improvement, and recommendations already implemented thereof
- Number of emergency exercises carried out
- Number of eliminated or substituted CMR substances

**13.4 职业健康安全管理体系的绩效指标**

- 严重事故数量
- 根据 IAF MD 22 的严重事故数量
- 法定报告事故数量
- 损失工作日数量
- 未遂事件数量（Near Misses）
- 改进建议数量及其已实施数量
- 开展的应急演练次数
- 被消除或替代的 CMR（致癌、致突变或生殖毒性）物质数量

The presentation of performance in the area of occupational health and safety could be as follows:

**职业健康与安全绩效可按如下方式展示：**

### OH&S Performance:

| | 2020 | 2021 | 2022 | 07 March 2023 |
|---|---|---|---|---|
| Near Miss 未遂事件 | 58 | 72 | 60 | 17 |
| Accident (each incident incl. a damage or loss)事故（包含所有有损失事件） | 70 | 70, 30 thereof commuting accidents | 65, 35 thereof commuting accidents | 18 |
| Accident (at least 1 day lost) 其中通勤事故 | 8 | 9 | 12 | 1 |
| Legal obliga- tion to report accidents (> 3 days lost) 法定需报告的事故（>3 天病假） | 3 | 5 | 5 | 0 |


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## 13.5 Examples of Continual Energy Performance Improvement

### 13.5.1 Annex A (informative) ISO 50001:2018

### A.10 Improvement

"Continual" implies occurrence over a period of time but can include intervals of interruption (unlike "continuous" which indicates occurrence without interruption). In the context of continual improvement, the expectation is that improvements occur periodically, over time. The rate, extent and timescale of actions that support continual improvement are determined by the organization, in light of its context, economic factors and other circumstances.

Energy performance improvement can be demonstrated in several ways, such as:

a) reduction in normalized energy consumption for the scope and boundaries of the EnMS;

b) progress towards the energy target(s) and management of the SEUs.

It is recognized that improvements are achieved based on the priorities of the organization.

Examples of continual energy performance improvement include, but are not limited to, the following:

— Total energy consumption decreases over time under similar conditions, e.g. a commercial building in a region where the temperature does not vary significantly.

— Total energy consumption increases, but the measure of energy performance as defined by the organization improves. In this case, a simple ratio where there is one relevant variable and no baseload.

— Equipment has a predicted reduction in energy performance as it ages. A delay or reduction in the performance reduction curve due to proper operational and maintenance controls can demonstrate improved energy performance as defined by the organizational EnPIs.

— In resource extraction industries where energy performance tends to decline as resources are depleted, e.g. in a mining facility where the depth and production both vary, reducing the rate of decline relative to the EnB can be considered a performance improvement.

— In most situations and organizations, there are multiple relevant variables requiring normalization, e.g. a dairy producing three different products (milk, cheese, yogurt) and affected by weather.

## 13.5 持续能源绩效改进的示例

### 13.5.1 ISO 50001:2018 附录 A（信息性）——改进条款 A.10

- "持续（continual）"指在一段时间内重复发生，允许中断（不同于"连续 continuous"）。
- 在持续改进的语境中，预期是组织在一段时间内定期实现绩效提升。
- 改进的频率、程度和时间由组织依据其情境、经济状况和其他因素决定。

**能源绩效改进的证明方式包括：**

- 能源管理系统（EnMS）范围与边界内，经归一化处理的能源消耗减少
- 向能源目标推进的进展或对重点能源使用（SEUs）的管理改进

**持续能源绩效改进的示例包括但不限于：**

- 在温度变化不大的地区，商业建筑在相似条件下总能耗逐年下降
- 总能耗上升，但组织定义的能源绩效指标（EnPI）表现提升（如单一变量比值改善）
- 设备随着老化能效下降，若通过维护控制延缓这种下降，即可视为绩效提升
- 资源开采行业中，如采矿深度与产量变化使得能效趋降，若下降速率减缓，即为改进
- 多变量影响存在时（如乳品厂生产牛奶、奶酪、酸奶等），通过归一化处理体现绩效提升


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

13.5.2 Annex C (informative) ISO 50003:2021

**Energy performance improvement**

C.1 When reviewing energy performance improvement for the purposes of making a recommendation at the certification decision point(s) in a certification cycle, the following issues are important to consider.

— Energy performance improvement shall be evaluated by comparing the EnPI value against the corresponding EnB (see ISO 50001:2018, 9.1.1). This can be done at a number of different levels including equipment, process, system or facility level.

— As indicated in ISO 50001:2018, A.4, demonstrating continual energy performance improvement across the scope and within the boundary(ies) of the EnMS does not mean all EnPI values improve. Some EnPI values improve and others do not; but across the scope of the EnMS, the organization demonstrates energy performance improvement.

— Similar to a single site, a multi-site organization can define energy performance improvement at several levels. That could include organization wide, by site, by system, by process or equipment. The data for energy performance improvement for the sampled sites as well as other sites is available through the central function.

— For a multi-site organization, not every site will contribute equally to the energy performance improvement of the multi-site organization. However, the data are expected to be available at the central function and confirmed at the sample sites

C.2 The organization can choose a number of methods including but not limited to ratios, linear regression, nonlinear regression, complex models, simulation, equipment and system test methods.

C.3 The auditor should expect to see that for each EnPI the organization has done the following:

a) collected energy consumption and potential relevant variable data at the level determined by the EnPI;

b) determined which variables significantly affect energy performance and are, thus, relevant;

c) established appropriate EnPIs using relevant variables.

C.4 If there are no relevant variables, then absolute energy consumption reduction can demonstrate energy performance improvement.

NOTE Additional information on energy performance metrics, EnBs and EnPIs can be found in ISO 50006 and ISO 50047.

## 13.5.2 ISO 50003:2021 附录 C（信息性）——能源绩效改进评估

**认证审核中能源绩效改进的评估要点：**

- 能源绩效改进需通过 EnPI 与 EnB 的对比评估（参见 ISO 50001:2018 第 9.1.1 条）
- EnPI 不必全部改进，整体 EnMS 范围内的绩效改进才是关键
- 多场所组织可按组织整体、场所、系统、流程或设备层面定义绩效改进
- 抽样场所以外的场所绩效数据应由中心职能统一掌握并在现场验证

**可采用的方法包括：**

- 比率分析
- 线性回归
- 非线性回归
- 复杂模型或仿真分析
- 设备和系统测试方法

**审核员应确认：**

- 组织是否收集了 EnPI 所需的能源数据和相关变量数据
- 是否识别了显著影响能源绩效的变量
- 是否据此建立了适当的 EnPI

若无相关变量，**绝对能源消耗的降低**也可证明能源绩效改进。

**附注：** 更多关于能源绩效指标（EnPI）、基准线（EnB）可参考 ISO 50006 和 ISO 50047。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## 13.5.3 Findings from our Book about ISO 50001:2018

Excerpt from the chapter "Is energy performance improvement a MUST?" (Summary, free translation)

When seeking certification of the energy management system against ISO 50001:2018, an organization must demonstrate its continual energy performance improvement. This is a specific requirement of the standard and therefore a MUST. At the same time, this requirement is also a clear opportunity to present and communicate the results achieved such as increase in efficiency, reduction of greenhouse gas emissions and cost reductions etc.

Understanding and using the terminology correctly is highly recommended, especially with this technical standard, so that different approaches to the topic do not arise.

ISO 50001:2018 is very specific when it comes to providing evidence in relation to the continual energy performance improvement. According to DIN ISO 50003:2016 (Note; revision ISO 50001:2021), a major nonconformity shall be issued if evidence cannot be provided.

However, ISO 50001:2018 requires organizations to demonstrate their continual energy performance improvement but does not specify the energy performance levels to be achieved. Therefore, the users have many options open. It makes absolutely no sense to determine energy performance improvement on basis of one or two performance indicators. This would, in many cases, make it even more difficult to provide evidence. Taking into account the different energy uses and subordinated intended results and energy targets also allows for numerous verification options.

Targeted leadership by top management and planning across all levels and functions are essential for continual energy performance improvement. Energy intensity is a risk factor in many organizations. Thus, in addition to evaluating performance and reduction of specific consumption, it is also important to demonstrate success – reduction of cost.

Performance improvement or success cannot be demanded – they must be worked out and understood. ISO 50001 has stood the test as a successful management tool for this purpose, and supports continual improvement through the persistent pursuit of Plan-Do-Check-Act.

## 13.5.3 节选自《ISO 50001:2018 解读》一书的研究发现

章节标题为"能源绩效改进是否是强制要求？"（摘要，自由翻译）

当组织希望依据 ISO 50001:2018 认证其能源管理体系时，必须展示其能源绩效的持续改进。这是标准的明确要求，因此是强制性的。同时，这一要求也是组织展示和传达自身成果的重要机会，例如能效提升、温室气体减排和成本节约等。

正确理解并使用标准中的术语非常重要，尤其在面对如此技术性的标准时，以避免因理解差异而产生偏差。ISO 50001:2018 对于如何提供持续能源绩效改进的证据具有高度明确性。根据 DIN ISO 50003:2016（注：2021 年已修订），如果无法提供此类证据，将必须被判定为重大不符合项。

然而，虽然 ISO 50001:2018 要求组织必须展示持续改进，但并未具体规定必须达到的能源绩效水平。因此，用户拥有多种实现方式和验证路径。若仅依赖一两个能源绩效指标来衡量改进，大多数情况下反而会使提供证据变得更困难。考虑到不同的能源用途、相应的子目标与预期结果，组织可以建立多个层次的验证策略。

持续能源绩效改进的实现，离不开高层管理的有力引导以及全层级、跨职能的系统性规划。能源密集型企业尤其需要评估自身的绩效与特定消耗指标的改善成果，同时也要强调实际效果，例如节能带来的成本降低。

绩效提升或成果的实现并不能被强制要求，而是必须通过系统性的推进、过程的理解与持续努力来达成。ISO 50001 已被验证为一种成功的管理工具，通过持续运用"计划–执行–检查–改进（PDCA）"循环，有力支持企业实现持续改进。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## 13.5.4 Reference to FAQs of the DIN

After DAkks exerted pressure on the DIN Standardization Committee, there is now a DIN statement on energy performance improvement available. The following screenshots are slides used in **quality**austria training courses (e.g., RUMEM, RIMS).

## 13.5.4 参考 DIN 常见问题（FAQs）

在德国国家认可机构（DAkkS）对 DIN 标准化委员会施压之后，DIN 现已就能源绩效改进问题发布了正式说明。以下截图摘自 qualityaustria 培训课程中的部分幻灯片（例如 RUMEM、RIMS 课程中使用）。

### One page management FAQ

qualityaustria
Erfolg mit Qualität

| | Answer | Reference ISO 50001 | Comment |
|---|---|---|---|
| Is a single index enough? | Usually not | Question | In general, there are several energy sources and several significant energy uses, which means that there are usually several energy-related key-figure. **Borderline case:** an organization has **only one energy source and significant energy use** |
| What makes an indicator an EnPi? | | 3.4.4 ISO 50006 | Show the **actual performance.** Normalized by significant influencing factors / variables; simple matrix, ratio, model |
| Is a global indicator necessary? | Yes | | Addressee is the **organization** |
| Must the global indicator improve? | Yes | | Should provide a **general trend development** |

### 一页管理常见问题

qualityaustria
质量奥地利
符合质量要求

| | 回答 | 参考 ISO 50001 吗 | 评论 |
|---|---|---|---|
| 单一指数够吗？通常不够 问题 | | | 一般来说，有几个能源来源和几个重要的能源使用，这意味着通常有几个与能源相关的关键数字。边缘情况：一个组织只有一个能源来源和重要的能源使用。 |
| 是什么使指标成为EnPi? | | 3.4.4 ISO 50006 | 显示实际性能。通过显著影响因素/变量归一化；简单的矩阵、比率、模型 |
| 全球指标是必要的吗? | 是 | | 收件人是组织 |
| 全球指标必须改进吗? | 是 | | 是否应该提供一般趋势发展 |


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## One page management FAQ

| Question | Answer | Reference ISO 50001 | Comment |
|---|---|---|---|
| At what level is the improvement to be demonstrated in multi-site procedures? | Overall level | | The multi-site organization as a whole must demonstrate its performance improvement.<br><br>It is not necessary for each site to demonstrate an improvement in energy performance on its own. |
| Can there be an improvement even if the total energy consumption has increased? | Yes | | Yes, as long as it can be demonstrated that efficiency has improved. |

## 一页式管理常见问题解答

| 问题 | 回答 | 参考 ISO 50001 | 评论 |
|---|---|---|---|
| 在多站点程序中，改进应在哪个级别得到展示? | 总体水平 | | 整个多站点组织必须展示其绩效改进。<br><br>每个站点不需要单独展示能源性能的改善。 |
| 即使总能耗增加，也能有所改善吗? | 是 | | 是的，只要能够证明效率有所提高。 |

## One page management FAQ

| Question | Answer | Reference ISO 50001 | Comment |
|---|---|---|---|
| Do you need at least one EnPI for each SEU? | Yes | 6.3 | |
| Are you free to define the SEUs? | Yes | 3.5.6 | Enables the organization to establish a focus-oriented energy management – free to define the SEUs. → establish criteria<br><br>Former draft of DAkks-Guideline containing recommendations, but it was never published. |
| Does the methodology for measuring performance need to be included in the action plans? | Yes | 6.2.3 | Planning...<br>- How the results will be evaluated, including the method(s) used to verify energy performance improvement |


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## 一页式管理常见问题解答

质量奥特里亚
符合质量要求

| 问题 | 回答 | 参考 OSI 50001 | 评论 |
|---|---|---|---|
| 你至少需要一个东南大学的EnPI吗? | 是 | 6.3 | |
| 你是否有权定义SEUs? | 是 | 3.5.6 | 使组织能够建立以重点为导向的能源管理——自由定义SEUs。建立标准。<br><br>DAkks-Guideline 的前版本包含建议，但从未出版。 |
| 绩效衡量方法是否需要在行动计划中包含? | 是 | 6.2.3 | 计划...<br>– 如何评估结果，包括用于验证能源性能改进的方法 |

## One page management FAQ

qualityaustria
Erfolg mit Qualität

| Question | Answer | Reference ISO 50001 | Comment |
|---|---|---|---|
| How do you deal with non-achievement of objectives? | Improvement | | Analyze the cause<br>Correction, corrective actions<br>Improvement of the planning process<br><br>In the event of system failure (major nonconformity), corrective actions must be taken before a certificate is issued. (see ISO 50003) |

## 一页管理常见问题

质量奥地利

| 问题 | 回答 | 参考 ISO 50001标准 | 评论 |
|---|---|---|---|
| 如何处理目标未实现的情况? | 改进 | | 分析原因 纠正，纠正措施 改进规划过程<br><br>在系统故障（重大不符合）的情况下，必须在颁发证书之前采取纠正措施。（见ISO 50003） |


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

# One page management FAQ



| Question | Answer | Reference ISO 50001 | Comment |
|---|---|---|---|
| **How are improvements outside the SEUs evaluated?** | **positive** | | **All improvements** are incorporated into the overall view of the organization... even those that are not SEUs.<br><br>*Note: Quality Austria: In addition to direct energy performance improvement, there is also indirect improvement, for example on other environmental aspects such as water consumption, quality, or OH&S.* |
| **How should the design of combined heat and power plants be assessed when evaluating the improvement in energy-related performance?** | | | ...Installation of a cogeneration unit may count as a **new/changed static factor** with the consequence that a **new baseline** has to be established,... |

# 一页式管理常见问题解答



| 问题 | 回答 | 参考 OSI 50001 | 评论 |
|---|---|---|---|
| SEUs之外的改进是如何评估的? | 积极的 | | 所有的改进都被纳入组织的整体视图中... 即使是那些不是 SEUs 的改进。<br><br>注：奥地利质量：除了直接的能源性能改善外，还有间接的改善，例如在其他环境方面，如水消耗、质量或OH&S。 |
| 在评估与能源相关的性能改善时，如何评估热电联产厂的设计? | | | ...安装一个热电联产机组可以算作一个新的/改变的静态因素，其结果是必须建立一个新的基线。.... |


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

# 14. Reporting Requirements

Preparing the audit report must comply with the **quality**austria quality criteria.

It is important to address the following points in audit reports:

**14. 报告要求**

编写审核报告必须符合 Quality Austria 的质量标准。在审核报告中需特别关注以下要点：

## 14.1 General

Each audit report contains statements on the scope, overall impression, strengths, potentials / opportunities, performance of the management system, internal audits and the management review.

**14.1 通用要求**

每份审核报告都必须包含以下方面的说明：审核范围，整体印象，优势，潜力 / 机遇，管理体系的运行绩效，内部审核情况，管理评审情况

## 14.2 Quality Management

The requirements regarding quality management acc. to ISO 9001 are highlighted in the respective gray text boxes in the audit report template. There are no additional requirements. Attention: special requirements for specific models (consider TL9000, ISO 13485).

**14.2 质量管理**

关于 ISO 9001 质量管理的要求，已在审核报告模板中的灰色文本框中突出显示。无额外要求。

注意：某些特定模型有特殊要求，例如 TL 9000、ISO 13485。

## 14.3 Environmental Management

- Determination of **environmental aspects and environmental impacts**: the relevant environmental aspects and impacts are listed.
- **Samples of laws**:

  14.3.1 **(Official) Decisions**, including at least 1 decision (see also webinar 2022 – "auditing of decisions")

  **Laws**: § xy AWG (Waste Management Act), § xyz WRG (Water Rights Act) → **no citation of entire laws** such as AWG, Ordinance of Flammable Liquids

  - Example: Federal Law Gazette 102/2002 as amended by 200/2021 Federal Act on Sustainable Waste Management (Waste Management Act 2002 – AWG 2002). *Currently in the legal register: §15 General Obligations of Waste Holders, para 5a The waste holder is responsible for ensuring that a) the waste is handed over to a waste collector or waste treatment operator authorized to collect or treat the type of waste and b) the environmentally sound recovery or disposal of this waste is explicitly commissioned*: → Official decision DISPOSAL COMPANY xy 6 October 2010 FA13A-37.10-63/2010/6; Contract BI413095 dated 1 July 2022 Obligations in chapter 6; chapter 6.8 reference to §15 para 5a for the transfer of waste: → OK

### 14.3.3 Possible customer requirements


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
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14.3.4 Possible voluntary (industry) agreements

14.3.5 Check of **external reports from the authorities IPPC or Seveso**:

14.3.5.1 **Example: Latest Environmental Inspection**: Notice of hearing, dated, reference number XXXXX-2018. Findings: Not a Seveso com- pany, no complaints in the past three years, Water: no threshold ex- ceeded, Soil: no threshold exceeded. No violation of environmental reg- ulations in the past three years. No deficiencies during inspection tours from authorities; 3-year inspection interval.

14.3.5.2 If there were any deficiencies, were these inputs to the improvement process? Were the deficiencies corrected?

**Note**: The **samples of laws** should be **congruent** with the **relevant environmental aspects and environmental impacts**.

## 14.3 环境管理

- 对环境因素和环境影响的识别：应列出相关的环境因素和环境影响。
- 法律示例：

14.3.1（官方）决定：

应至少包括 1 项官方决定（另见 2022 年网络研讨会"审核决定"）

14.3.2 法律条文：

如：§ xy AWG（《废弃物管理法》）、§ xyz WRG（《水权法》）
→ 不得引用整部法律名称，如 AWG、《易燃液体条例》等。

示例：联邦法律公报第 102/2002 号，依据 2021 年第 200/2021 号法律修订的《可持续废弃物管理法》（AWG 2002）
当前法律登记条款为：§15 废弃物持有者的一般义务，第 5a 款：
废弃物持有者有责任确保：
a）废弃物交由有权收集或处理该类废弃物的收集者或处理者，且
b）已明确委托以环保合规方式对该废弃物进行回收或处置。
→ 官方决定：DISPOSAL COMPANY xy，2010 年 10 月 6 日，编号 FA13A-37.10-63/2010/6；
合同编号 BI413095，签订日期 2022 年 7 月 1 日，第 6 章为义务内容，第 6.8 节引用 §15 第 5a 款有关废弃物移交的规定：
→ 合规 OK

14.3.3 可能的客户要求

14.3.4 可能的自愿性（行业）协议

14.3.5 权力机关出具的外部报告核查（如 IPPC 或 Seveso）：

14.3.5.1 示例：最新环境检查报告：
听证通知书，注明日期，参考编号 XXXXX-2018。
结论：非 Seveso 公司，过去三年无投诉；水质：未超出限值；土壤：未超出限值。
过去三年无违反环境法规的情况；在政府检查中未发现缺陷；检查周期为三年一次。

14.3.5.2 如存在缺陷，这些是否被作为持续改进的输入？缺陷是否已整改？

## 14.4 Occupational Health and Safety Management

- If it is determined that elementary basics of an occupational health and safety management system are not met, a major nonconformity shall be issued, since compliance with statutory / legal OH&S requirements cannot be demonstrated.
- Nonconformity regarding the non-compliance with relevant regulatory requirements:

14.4.1 If a nonconformity regarding non-compliance with relevant regulatory requirements is identified during the audit, this must be communicated, without delay, to the audited organization.

14.4.1.1 Note: this refers to the Administrative Criminal Law (essentially non-compliance with obligations under the Worker Protection Act (ASchG) and the associated regulations).

14.4.2 This regulation is applicable independent of whether a normative nonconformity has been identified during the audit!

- The organization must be able to demonstrate that it has achieved compliance with the statutory / legal OH&S requirements based on its own assessment.

14.4.3 We dc not audit the entire system, but we take audit samples (objective evidence) that verify the truth of the organization's own statements.

14.4.4 We are competent auditors who assess a management system, not inspectors who carry out a comprehensive legal audit.

- The term "WORKER" is often equated only with the employee. ISO 45001 considers the term "worker" to include all persons "performing work or work-related activities that are under the control of the organization". This includes company employees, workers from contractors, contractors, etc.
- The following personnel are mandatory to be interviewed during the audit and at the closing meeting (*)

14.4.5 The management with legal responsibility for OH&S (e.g. managing directors by commercial law, responsible Representatives acc. to § 23 ArbIG, etc.)*

14.4.6 Employees' representatives with responsibility for OH&S (e.g. Safety representative, safety engineers, works council, etc.)*

14.4.7 Legal obligation of safety representatives, safety engineers / OH&S physician regarding employees

14.4.8 Personnel responsible for monitoring employees' health (e.g. occupational phy- sician, emergency response officer, first aiders, etc.)*

14.4.9 Managers and permanent and temporary employees

14.4.10 Note:

14.4.10.1 MD 22 does not require the works council or the occupational physician to participate in the audit as a "mandatory" interview partner; these persons are only mentioned as examples.

14.4.10.2 If you cannot talk to relevant persons "face-to-face", you are free to use "remote tools such as Microsoft Teams, telephone etc."; this requires a note in the audit documentation (preferably in the audit plan or audit report).

14.4.10.3 The organization representatives mentioned above and marked with an asterisk (*) must be invited to participate in the closing meeting. If one


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

of them does not show up for the closing meeting, please make a shore note about the reason for absence in the audit documentation.

### 14.5 职业健康与安全管理

如果发现组织未满足职业健康与安全管理体系的基本要求，应判定为**重大不符合项**，因为无法证明其符合法定的职业健康与安全要求。

关于违反相关法律法规要求的不符合项：

**14.5.1 若在审核过程中识别出违反相关法律法规的情况，必须立即告知被审核方。**

**14.5.1.1 注：**

此类情况适用于**行政刑法**（主要涉及违反《工人保护法》（ASchG）及其相关条例中的法定义务）。

**14.5.2**

该规定适用于所有审核情况，**无论是否识别出规范性不符合项。**

组织必须能够基于**自身评估**证明其符合法定的职业健康与安全要求。

**14.5.3**

审核过程中并不会审查整个系统，而是采取抽样方式（通过**客观证据**）来验证组织声明的真实性。

**14.5.4**

我们是具备能力的审核员，负责评估管理体系，**并非负责进行全面法律合规性审查的执法检查员。**

"工作人员（WORKER）"一词常被误认为仅指正式员工。根据 ISO 45001，工作人员包括所有**在组织控制下从事工作或与工作相关活动的人员**，包括公司员工、承包商员工、承包商本人等。

以下人员在审核期间以及末次会议中为**必须访谈对象**（标注 *）：

**14.5.5**

*对职业健康与安全负有法定责任的管理人员（如依据《商业法》的董事、根据 §23 ArbIG 规定的责任代表）*

**14.5.6**

*负责职业健康与安全的员工代表（如安全代表、安全工程师、员工委员会等）*

**14.5.7**

安全代表、安全工程师、职业健康医生对员工的法定义务

**14.5.8**

*负责员工健康监测的人员（如职业医生、应急响应负责人、急救人员等）*

**14.5.9**

管理层成员以及正式和临时员工

**14.5.10 注释：**

**14.5.10.1**

依据 IAF MD 22，**不强制**员工委员会或职业医生必须作为"必须访谈对象"参加审核；他们仅作为示例列出。

**14.5.10.2**

若无法与相关人员**面对面交谈**，可使用远程工具（如 Microsoft Teams、电话等）进行访谈；但必须在审核文件中注明（最好在审核计划或审核报告中说明）。

**14.5.10.3**

上述标有星号（*）的组织代表**必须被邀请参加末次会议**。若其中任何一人缺席，请在审核记录中简要说明缺席原因。

### 14.5 Energy Management

- Procedures for evaluating compliance with relevant legislation / legal requirements
- Statements on the energy planning process*
- Statements on the energy performance indicators, in particular on the energy performance improvement per SEU
- Statements on improvement of the EnMS; these may refer to the EnMS and/or the improvement of the energy performance
  - Example: The organization initiated an **awareness campaign** on saving energy.


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
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The objectives of the campaign are XY.

- An **Inhouse training course** on the topic of preparing greenhouse gas inventories was attended.
- In addition to the analysis of the energy flows, a **first greenhouse gas inventory** acc. to ISO 14064 for scope 1 and 2 was prepared.
- Tabular or graphical representation of **target and actual values for each SEU**

■ Statements on improvement shall be included in each audit report.

*) Insert the following table

| Parameter 参数 | Year | | | |
|---|---|---|---|---|
| | 2018 | 2019 | 2020 | 2021 |
| Annual energy consumption [GWh]<br>年度能源消耗 [GWh] | 58,5 | 57,9 | 50,7 | 48,3 |
| Number of energy sources<br>能源来源数量 | 4* | 4 | 4 | 4 |
| Number of significant energy uses<br>重点能源使用数量 | 4 | 4 | 6 | 6 |
| Number of EnMS effective personnel<br>EnMS 有效人员数量 | 9 | 9 | 15** | 15 |
| * ... since 2018, new energy source: District heating from biomass (partial substitution of gas)<br>** ... Number of people in the extended energy team<br>* 自 2018 年起，新增能源来源：来自生物质的区域供热（部分替代天然气）<br>** 扩展能源团队中参与 EnMS 的人员数量 | | | | |

Note: Changes in the significant energy use and EnMS effective personnel have an impact on the calculation.

## 14.6 能源管理

审核报告中应包含以下内容：

- **对相关法律法规合规性的评估程序；**
- **关于能源规划过程的说明（*）；**
- **关于能源绩效指标的说明，尤其是每个重点能源使用（SEU）项目的能源绩效改进情况；**
- **关于能源管理体系（EnMS）改进的说明，这些说明可以涉及对 EnMS 本身的改进，或对能源绩效的提升。**

**示例说明内容：**

- 组织启动了一项节能意识宣传活动，活动目标为 XY。
- 组织内部开展了一场关于温室气体清单编制的培训课程。
- 除了能源流分析外，还依据 ISO 14064 编制了范围 1 和 2 的首份温室气体清单。
- 每项 SEU 的目标值与实际值应以**表格或图形**方式展示。

**每份审核报告中都必须包含对改进情况的说明。**

**备注：** 重点能源使用的变更与 EnMS 有效人员数量的变化将影响绩效计算结果。


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

# 15 Informative Part for Audit Preparation 信息性部分：用于审核准备

## 15.1 Business Licenses

https://www.gisa.gv.at/
Accessed on 20 July 2023

Since April 2015, a uniform, efficient and effective system for trade administration has been in use nationwide. The new centralized "GewerbeInformationsSystem Austria (GISA)" was implemented as a cooperative project jointly by the Federal Government, the City of Vienna, the provinces and cities with their own statutes, and replaced 14 decentralized registers. The implementation of the project was directed by the City of Vienna.

The Federal Government, the provinces and cities jointly took an important step to reform the trade administration. GISA simplifies and standardizes the trade administration.

The centralized administration of the trade register reduces the administrative burden and brings benefits to citizens and companies alike. In the long term, the project will strengthen Austria as a business location.

**15.1 营业执照**

网站：https://www.gisa.gv.at/（访问时间：2023 年 7 月 20 日）

自 2015 年 4 月起，奥地利全国实施统一、高效的商贸行政管理系统。新的集中式"奥地利商业信息系统（GewerbeInformationsSystem Austria，简称 GISA）"作为联邦政府、维也纳市、各州及具有自治权的城市合作开发的项目，取代了原先 14 个分散的注册系统。该项目由维也纳市主导实施。

联邦、各州和城市共同推动了商贸管理改革的重要一步。GISA 简化并标准化了商贸行政流程。中央化的登记管理系统降低了行政负担，为公民和企业带来了便利，从长远来看，该项目将增强奥地利作为商业中心的吸引力。

## 15.2 Laws

https://www.ris.bka.gv.at/Gesamtabfrage/
https://eur-lex.europa.eu/homepage.html?locale=de

**15.2 法律法规链接**

- 奥地利法律信息系统（RIS）
  https://www.ris.bka.gv.at/Gesamtabfrage/
- 欧盟法令数据库（EUR-Lex）：https://eur-lex.europa.eu/homepage.html?locale=de

## 15.3 Environmental Management 环境管理

### 15.3.1 Environmental Conditions

- **Digitized Soil Map**: https://bodenkarte.at/; accessed on 20 July 2023
- **Red List Flora and Fauna in Austria:** Federal Environmental Agency: OASIS 2.0; Austrian Species Conservation Information System (Version 2.0) https://www.umweltbundesamt.at/umweltthemen/naturschutz/artenschutz/artenschutz-datenbank; accessed on 20 July 2023

  https://www.umweltbundesamt.at/umweltthemen/naturschutz/rotelisten; accessed on 20 July 2023


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

- **Digitized Maps Nature Conversation:** http://www.doris.at/themen/umwelt/natur.aspx
- **Water Quality Classes:** https://www.umweltbundesamt.at/wasser/daten-karten/oberflaechenwasserkoerper
- **Ground-level Ozone –** Ozone monitoring areas: https://www.umweltbundesamt.at/ozon-aktuell

### 15.3.1 环境条件

- 数字化土壤地图：https://bodenkarte.at/（访问时间：2023 年 7 月 20 日）
- 奥地利红色名录（动植物）：联邦环境署 OASIS 2.0 物种保护数据库
  https://www.umweltbundesamt.at/umweltthemen/naturschutz/artenschutz/artenschutz-datenbank
  https://www.umweltbundesamt.at/umweltthemen/naturschutz/rotelisten
  （访问时间：2023 年 7 月 20 日）
- 自然保护数字地图（奥地利上奥州 DORIS 系统）：
  http://www.doris.at/themen/umwelt/natur.aspx
- 地表水水质等级：https://www.umweltbundesamt.at/wasser/daten-karten/oberflaechenwasserkoerper
- 近地臭氧监测区域：https://www.umweltbundesamt.at/ozon-aktuell

## 15.3.2 Risks / Hazards

- **National Flood Risk Management Plan**: https://www.bmlrt.gv.at/wasser/wisa/hochwasserrisiko/oeffentlichkeitsbeteiligung-risikomanagementplan2021.html; accessed on 20 July 2023
- **Natural Hazards:** Maps are used to provide initial information about possible hazards from various natural hazards such as floods, earthquakes, storms, hail and snow. Furthermore, current weather warnings for floods, hail and heavy rain events, earthquakes etc. are also available. http://www.hora.gv.at/

### 15.3.2 风险 / 危害信息

- 国家洪水风险管理计划：
  https://www.bmlrt.gv.at/wasser/wisa/hochwasserrisiko/oeffentlichkeitsbeteiligung-risikomanagementplan2021.html（访问时间：2023 年 7 月 20 日）
- 自然灾害地图（HORA）：提供洪水、地震、风暴、冰雹、降雪等自然灾害的初步风险信息，并含当前天气预警：https://www.hora.gv.at/

## 15.3.3 BAT Reference Documents

- https://www.umweltbundesamt.de/themen/wirtschaft-konsum/beste-verfuegbare-techniken/sevilla-prozess/bvt-merkblaetter-durchfuehrungsbeschluesse


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Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
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### 15.3.3 最佳可用技术（BAT）参考文件

- BAT 信息与欧盟塞维利亚程序链接：https://www.umweltbundesamt.de/themen/wirtschaft-konsum/beste-verfuegbare-techniken/sevilla-prozess/bvt-merkblaetter-durchfuehrungsbeschluesse

### 15.3.4 CO2 Conversion

- CO2 calculator of the Federal Environmental Agency: https://secure.umweltbundesamt.at/co2mon/co2mon.html
- BAFA in Germany: specific emission factors of energy sources: https://www.bafa.de/SharedDocs/Downloads/DE/Energie/eew_infoblatt_co2_faktoren_2021.html
- List of CO2 emissions from standard fuels used in the European Emissions Trading System: https://www.dehst.de -> Publications -> Search Item CO2 -> Guideline ...
- Ecoinvent for Life Cycle Assessments https://ecoinvent.org
- IEA: International Energy Agency: Emission factors for energy generation from fossil fuels https://www.iea.org/data-and-statistics/data-product/emissions-factors-2022#emissions-factors

### 15.3.4 $CO_2$ 转换与计算

- 奥地利联邦环境署 $CO_2$ 计算器：https://secure.umweltbundesamt.at/co2mon/co2mon.html
- 德国 BAFA：能源来源的特定排放因子：https://www.bafa.de/SharedDocs/Downloads/DE/Energie/eew_infoblatt_co2_faktoren_2021.html
- 欧盟排放交易体系中标准燃料的 $CO_2$ 排放因子清单：https://www.dehst.de → Publications → CO2 → 指南
- Ecoinvent 生命周期评估数据库：https://ecoinvent.org
- 国际能源署 IEA：化石能源发电的排放因子：https://www.iea.org/data-and-statistics/data-product/emissions-factors-2022#emissions-factors

### 15.3.5 EDM Portal

- **https://secure.umweltbundesamt.at/edm_portal/home.do**; accessed on 20 July 2023
- Search for Seveso Inspections: https://secure.umweltbundesamt.at/edm_portal/cms.do?get=/portal/informationen/seveso-III.main
- IPPC: Search for Environmental Inspection Reports
- BAT Conclusions and BAT Reference Documents (BREFs)
- List of Wastes

### 15.3.5 EDM 环境数据管理平台

- 奥地利 EDM 环保数据管理门户：https://secure.umweltbundesamt.at/edm_portal/home.do（访问时间：2023 年 7 月 20 日）
- Seveso 工厂检查记录查询：https://secure.umweltbundesamt.at/edm_portal/cms.do?get=/portal/informationen/seveso-III.main
- IPPC 环境检查报告查询
- BAT 结论与 BAT 参考文件（BREFs）


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

- 废弃物清单

## 15.4 Occupational Health and Safety Management

Segregated storage of incompatible dangerous substances: **AUVA**
Combined storage of hazardous components acc to TRGS 510: **DENIOS**

### 15.4 职业健康与安全管理

不兼容危险物质的分开储存信息：AUVA（奥地利事故保险机构）
根据 TRGS 510（德国危险物质技术规则）的危险化学品联合储存规则：DENIOS 公司提供实践资料


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

# 16 Further Information 附加信息

ISO 14001:2015: Annex A (informative) – Guidance on the use of this International Standard

ISO 14004:2016: Environmental management systems – General guidelines on implementation

ISO 14031:2021: Environmental management – Environmental performance evaluation – Guidelines

ISO 50004:2021 Energy management systems — Guidance for the implementation, maintenance and improvement of an energy management system

ISO 50006:2017 Energy management systems – Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) – General principles and guidance

ISO 50015:2018 Energy management systems – Measurement and verification of energy performance of organizations – general principles and guidance

ISO 14064-1:2019 Greenhouse gases – Part 1: Specification with guidance at the organizational level for quantification and reporting of greenhouse gas emissions and removals

Barbist, Ahammer, Fabian, Löffler (Hrsg.) 2015: – Compliance in der Unternehmenspraxis, LexisNexis Verlag ARD Orac GmbH & CO KG, Wien, 2. Auflage

Quality Austria (2017): Umweltmanagementsysteme ISO 14001:2015 – Das Praxishandbuch zur Umweltmanagementnorm, AUSTRIAN STANDARD PLUS GMBH Heinestraße 38, 1020 Wien

Matzik / Popper / Schulik (2018): Beauftragte im Betrieb - Handbuch für Beauftragte und Geschäftsführer, TÜV AUSTRIA Fachverlag

Loerzer (2022): Product Compliance Management - Praxishandbuch für die Ermittlung, Umsetzung und Einhaltung von Produktkonformität, Austrian Standards PLUS GMBH Heinestraße 38, 1020 Wien

Quality Austria/ConPlusUltra/sattler energie consulting (Hrsg.): Energiemanagementsysteme ISO 50001:2018 - Das Praxishandbuch zur Energiemanagementnorm / ISBN 978-3-85402-382-1 / Buch

- ISO 14001:2015：附录 A（信息性）– 本国际标准的使用指南
- ISO 14004:2016：环境管理体系 – 实施的一般指南
- ISO 14031:2021：环境管理 – 环境绩效评估指南
- ISO 50004:2021：能源管理体系 — 实施、维护和改进指南
- ISO 50006:2017：能源管理体系 – 利用基准线（EnB）和绩效指标（EnPI）衡量能源绩效的通用原则和指南
- ISO 50015:2018：能源管理体系 – 能源绩效的测量与验证指南
- ISO 14064-1:2019：温室气体 – 第 1 部分：组织层面的量化与报告规范及指南
- Barbist, Ahammer, Fabian, Löffler (编著) (2015)：《企业实践中的合规》，LexisNexis Verlag ARD Orac GmbH & CO KG，维也纳，第 2 版
- Quality Austria (2017)：《环境管理体系 ISO 14001:2015 – 实用手册》，AUSTRIAN STANDARD PLUS GMBH，维也纳
- Matzik / Popper / Schulik (2018)：《企业中的委托人 – 委托人和总经理手册》，TÜV AUSTRIA Fachverlag
- Loerzer (2022)：《产品合规管理 – 产品合规识别、实施与遵守的实用手册》，Austrian Standards PLUS GMBH，维也纳
- Quality Austria / ConPlusUltra / Sattler Energie Consulting（编著）：《能源管理体系 ISO 50001:2018 – 实用手册》，ISBN 978-3-85402-382-1


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## A.1 ANNEX CONTEXT – RISKS – OPPORTUNITIES 附录：背景 – 风险 – 机会

| Area / Standard require-ment 区域 / 标准要求 | Risk 风险 | Opportunities 机会 | Notes 备注 |
|---|---|---|---|
| **Context 背景** | **Internal context:** Language barriers among employees can promote unsafe conditions or emergencies<br><br>Different levels of training (employee does not understand what damage can be caused by his/her actions)<br>内部背景：员工之间语言障碍可能导致不安全状况或紧急事件。<br><br>培训水平不同（员工不了解其行为可能造成的后果）。<br><br>**External context:** Negative media reports<br>Criminal proceedings by authorities<br>Lawsuits from interested parties<br><br>**External context:** Critical citizens' initiative that wants to prevent a new plant from being constructed<br>外部背景：负面媒体报道、政府刑事诉讼、利害相关方的诉讼。<br>外部背景：反对建设新厂的市民倡议组织。 | Multilingual work instructions / Pictograms, Trainings<br>使用多语言工作指引 / 图示、员工培训。<br><br>Early establishment of communication channels to relevant target groups in order to build confidence<br><br>及早与相关目标群体建立沟通渠道以建立信任。<br><br>Mediation to integrate the interests of the citizens' initiative<br><br>通过调解方式整合市民倡议的利益诉求。 | See also A.6.1.1<br>参见 A.6.1.1 |


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

| Area / Standard require-ment 区域 / 标准要求 | Risk 风险 | Opportunities 机会 | Notes 备注 |
|---|---|---|---|
| **Environ-mental con-dition 环境条件** | **Climate change**: Im-pact of climate change on different industries, such as tourism, agri- culture, forestry, en- ergy- and water man- agement or infrastruc- ture 气候变化：对旅游、农业、林业、能源与水管理、基础设施等行业的影响。<br><br>**Climate change: risks of flooding events** in river valley locations; Heavy rain events flood companies that do not have waterbod- ies nearby;<br><br>Storm damage Hail damage Mudslides, ...<br>洪水风险（尤其是河谷地区）、强降雨使没有邻水区域的企业也被淹。<br>暴风、冰雹、泥石流等灾害。<br><br>**Water shortage** Droughts can limit op-erations. (Industrial water, cooling water)<br><br>Water pollution (espe-cially in companies that need pure / clean water – food)<br>缺水：干旱限制运营（工业用水、冷却水）。<br>水污染（如食品行业等需洁净水源的公司）。<br><br>**Scarcity of land / land use** can jeopard- ize plant expansions.<br>土地稀缺 / 土地使用问题危及工厂扩建。 | **Climate change**: Strategic positioning as a climate-neutral company with corre-sponding internal and external communica-tion 气候变化：可将企业战略定位为"气候中和企业"，并在内部和外部进行积极沟通。 | See also A.6.1.1<br>See also emergency planning<br><br>See A.6.1.1<br><br>参见 A.6.1.1，参见应急预案 |


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

| | | | |
|---|---|---|---|
| **Compliance obligations**<br>合规义务 | Old and new legislation with inspection requirements, reporting obligations and administrative penalties are not taken into account or not correctly understood<br><br>→ Liabilities<br>→ Administrative penalties<br>→ Attorneys' fees<br>→ Loss of image in the public eye<br><br>新旧法律对检查、报告义务和行政处罚的要求未被识别或理解错误:<br>→ 法律责任<br>→ 行政处罚<br>→ 律师费用<br>→ 企业形象受损 | Active and consistent implementation of legal management<br><br>Trends in environmental legislation, such as the Ecodesign Regulation are detected at an early stage and proactively pursued (innovation leader)<br><br>积极、持续地落实法律管理。<br><br>对环境立法趋势（如生态设计法规）进行前瞻性识别并主动应对（成为创新引领者）。 | |


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

| Area / Standard requirement 区域 / 标准要求 | Risk 风险 | Opportunities 机会 | Notes 备注 |
|---|---|---|---|
| **Emergency preparedness and response** 应急准备与响应 | Accidents with property damage and personal injury (environmental damage) 发生财产损失、人身伤害或环境破坏的事故。 | Crisis management team; crisis management including communication: training, plans, evaluation exercises; 建立危机管理小组；进行包含沟通机制的危机管理培训、计划与评估演练。 | See also 8.2 参见 8.2 |
| **Life cycle analysis** 生命周期分析 | | Changes of (development of new) **business models** towards **user concepts and leasing** incl. servicing and long-term customer loyalty, e.g. climate-neutral printing for copiers, … 商业模式转向用户导向和租赁模式，包括服务与长期客户关系管理，例如气候中和复印机打印服务等。 | |
| **Innovation / State of the art** 创新 / 技术现状 | State of the art is obsolete; Keyword IPPC installations (is then part of compliance obligations) 当前技术水平已过时；如 IPPC（污染预防与控制）设施问题会转变为合规义务。 | Introduction of new technologies (financed by funding), e.g. to improve air quality 引进新技术（通过资助项目），例如改善空气质量。 | A.6.1.1 |


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Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## A.2 ENVIRONMETNAL ASPECTS AND ENVIRONMENTAL IMPACTS 环境因素与环境影响

| **Environmental aspect** 环境因素 | **Environmental impact** 环境影响 | **Impact on the organization** 对组织的影响 | **Contribution of the organization** 对组织的影响 | **Particularly affected** 特别影响区域 / 对象 |
|---|---|---|---|---|
| **Air** 空气 | Change in climate (increase in temperature, precipitation, natural events)<br>(Global warming potential GWP, $CO_2$ equivalents)<br>气候变化（气温上升、降水增加、自然灾害增加）<br>全球变暖潜力（GWP）、$CO_2$当量 | Increase in temperature in the region and thus direct / indirect effects<br>地区气温上升，进而带来直接 / 间接影响 | Greenhouse gas emissions<br>温室气体排放 | Alpine regions such as Austria, Switzerland<br>Industries: Tourism Agriculture Forestry Energy and water management Infrastructure<br>Indirect: Upstream and downstream industries, e.g. insurances<br>阿尔卑斯地区如奥地利、瑞士<br>行业：旅游、农业、林业、能源和水管理、基础设施<br>间接影响：上下游行业如保险业 |
| **Air** 空气 | Formation of ground-level ozone<br>(Ethane equivalent)<br>地面臭氧形成（乙烷当量） | Health of employees<br>Health of neighbors (interested parties, interest groups)<br>员工健康、邻近居民健康（利害相关者、公众） | Emissions of CO, $NO_x$, VOC (alkanes, alkenes) 一氧化碳、氮氧化物、挥发性有机物（烷烃、烯烃）排放 | Frequency of sum- mer smog in the re- gion?<br>Areas of high popula- tion density<br>Regions with more atmospheric inver-sion<br>夏季光化学烟雾频发地区<br>人口密集区<br>大气逆温频繁区域 |


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Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
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| | | | | |
|---|---|---|---|---|
| **Air 空气** | Negative impact by air pollutants (people, keyword: Steyregg, transport) 空气污染造成负面影响（人员健康，例如 Steyregg 案、交通排放） | Limitation of production (reduction) 生产受限（产量下降） | Pollutant emissions 污染物排放 | Chemical industry 化学工业 |
| **Water 水** | Pollution, contamination with specific environmental toxins in groundwater or surface water<br><br>地表或地下水受特定环境毒素污染 | Company has its own water well or uses bank filtrate for drinking water supply<br>企业使用自备井或地下滤水作为饮用水源 | Specific emissions to receiving waters<br><br>Contamination with bacteria, drugs or microplastics could also be considered here.<br>向水体的特定排放<br>细菌、药物残留或微塑料污染 | e.g. high nitrate concentration in the "March region" in the east of Lower Austria;<br><br>E-Coli contamination increases after flood events;<br>例如：奥地利下奥州东部"March 地区"硝酸盐浓度高<br>洪水后易发生大肠杆菌污染 |
| **Water 水** | Aquatic eutrophication<br><br>(Phosphate equivalents)<br>水体富营养化（磷当量） | Impact of water quality on the company's activity?<br>水质对企业生产活动造成影响 | Wastewater missions, wastewater treatment<br><br>(Oxygen content, BOD (biological oxygen demand), COD (chemical oxygen demand))<br><br>废水排放、废水处理（溶解氧、BOD、COD 等） | Agriculture, Food processing, ...<br>农业、食品加工业 |


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Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
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| Environmental | Environmental impact 环境影响 | Impact on the organization 对组织的影响 | Contribution of the organization 对组织的影响 | Particularly affected 特别影响区域 / 对象 |
|---|---|---|---|---|
| **Water** 水 | Water temperature 水温变化 | The company takes cooling water from the receiving water. Now, as a result of low water flow, it could be that the temperature has risen. What does this mean for the organization's energy balance? 企业从受纳水体取用冷却水。由于水量减少，水温升高，对企业能源平衡产生影响 | At what temperature is the cooling water fed back into the receiving water? 冷却水以何种温度排回受纳水体? | Energy supplier<br><br>France had a problem cooling the nuclear power plants in the summer of 2022 because the river carried too little water.<br>能源供应企业<br>示例：法国在 2022 年夏季因河流水量不足，核电厂冷却出现困难 |
| **Water** 水 | Ground water level decreases 地下水位下降 | As a result of climate change, it is getting warmer, droughts are increasing, precipitation is decreasing, and the regeneration of ground water is sinking. The company operates its own well. 气候变化导致气温升高、干旱增加、降水减少，地下水补给量降低。企业自设水井。 | How does the company deal with the water it uses? Can the water be recirculated and purified? How can water consumption be reduced? 企业如何管理其水资源使用? 是否可循环净化? 如何减少用水? | In the east of Austria, the amount of precipitation has decreased by 10 to 15%.<br><br>France had a problem cooling the nuclear power plants in the summer of 2022 because the river carried too little water.<br>例如奥地利东部降水量减少 10%–15%<br><br>法国核电厂在 2022 年夏因河水不足无法冷却 |


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## A.3 EXCERPTS FROM POSSIBLE CRIMINAL LAW PROVISIONS FROM SELECTED LAWS

### Auszug Check Strafbestimmung Gewerbeordnung

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| Gesetz | § | Tatbestand | Strafe | Art | Relevanz | Check |
|---|---|---|---|---|---|---|
| BGBl.Nr. 194/1994 zuletzt geändert durch BGBl. I Nr 42/2008 | 366 (1) | 1. ein Gewerbe ausübt, ohne die erforderliche Gewerbeberechtigung erlan zu haben; | bis zu 3600 € | Verwaltungs-strafe | | |
| | 366 (1) | 2. eine genehmigungspflichtige Betriebsanlage §(74) **ohne die erforderliche Genehmigung** errichtet oder betreibt; | | Verwaltungs-strafe | | |
| | 366 (1) | 3. eine genehmigte Betriebsanlage **ohne die erforderliche Genehmigung ändert** oder nach der Änderung **betreibt** (§§ 81 f); | | Verwaltungs-strafe | | |
| | 366 (1) | 4. entgegen § 69 Abs. 1 oder § 71 **Maschinen, Geräte, Ausrüstungen** oder deren Teile oder Zubehör in den inländischen Verkehr bringt oder im Inla ausstellt; | | Verwaltungs-strafe | | |
| | 366 (1) | 7. entgegen § 84c Abs. 1 nicht alle notwendigen Maßnahmen ergreift, um **schwere Unfälle zu verhüten** oder deren **Folgen für Menschen und Umwelt** zu begrenzen; | | Verwaltungs-strafe | | |
| | 366 (1) | 9. wer es entgegen den Bestimmungen des § 365 u unterlässt, die **Geldwäschemeldestelle** umgehend zu informieren, oder die erforderlichen Auskünfte zu erteilen oder Unterlagen heraus zugeben | | Verwaltungs-strafe | | |


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
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## Auszug Check Strafbestimmung Gewerbeordnung

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| Gesetz | § | Tatbestand | Strafe | Art | Relevanz | Check |
|---|---|---|---|---|---|---|
| BGBl.Nr. 194/1994 zuletzt geändert durch BGBl. I Nr. 42/2008 | 367 | 1. trotz der gemäß § 8 Abs. 2 oder 3 oder gemäß § 9 oder gemäß § 16 Abs. 1 bestehenden Verpflichtung zur Bestellung eines Geschäftsführers ein Gewerbe ausübt, **ohne die Anzeige** gemäß § 39 Abs. 4 über die Bestellung eines dem § 39 Abs. 2 entsprechenden Geschäftsführers **erstattet** zu haben; | **bis zu 2180 €** | Verwaltungs - strafe | | |
| | 367 | 2. trotz der gemäß § 8 Abs. 2 oder 3 oder gemäß § 9 oder gemäß § 16 Abs. 1 oder gemäß § 39 Abs. 1 bestehenden Verpflichtung zur Bestellung eines Geschäftsführers eines der im § 95 angeführten Gewerbe ausübt, **ohne die Genehmigung** der Bestellung eines Geschäftsführers erhalten zu haben; | | Verwaltungs - strafe | | |
| | 367 | 25. **Gebote oder Verbote** von gemäß § 82 Abs. 1 oder § 84d Abs. 7 erlassenen Verordnungen nicht befolgt oder die gemäß den Bestimmungen der §§ 74 bis 83 und 359b in Bescheiden **vorgeschriebenen Auflagen oder Aufträge nicht einhält**; | | Verwaltungs - strafe | | |
| | | 27. die gemäß § 84 **in Bescheiden vorgeschriebenen Aufträge nicht einhält** ; | | Verwaltungs - strafe | | |
| | | 57. entgegen § 84c Abs. 4 **kein Konzept zur Verhütung schwerer Unfälle** ausarbeitet, verwirklicht und zur Einsicht der Behörde bereithält oder ein solches bei Änderungen des Betriebs nicht überprüft und erforderlichenfalls ändert; | | Verwaltungs - strafe | | |

## Auszug Check Strafbestimmung Wasserrechtsgesetz

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| Gesetz | § | Tatbestand | Strafe | Art | Relevanz | Check |
|---|---|---|---|---|---|---|
| Wasserrechtsgesetz 1959 BGBl. Nr. 215/1959 zuletzt geändert durch BGBl. I Nr. 123/2006 | 137 (1) | 7. ein Organ der wasserrechtlichen Bauaufsicht (§ 120), der Talsperrenaufsicht (§ 23a) oder der Gewässeraufsicht ( § 133) oder einen Talsperrenverantwortlichen (§ 23a) oder einen Abwasserbeauftragten ( § 33) an der **Ausübung seiner Tätigkeit hindert** ; | **bis zu 3630 €** | Verwaltungs - strafe | | |
| | 137 (1) | 10. den **Zweck der Wasserbenutzung** (§ 21 Abs. 4) **ohne Bewilligung ändert**; | | Verwaltungs - strafe | | |
| | 137 (1) | 16. ohne wasserrechtliche Bewilligung oder entgegen einer solchen eine gemäß §§ 31a oder 31c bewilligungspflichtige Maßnahme setzt oder eine bewilligungspflichtige Anlage errichtet oder betreibt, nach § 38 bewilligungspflichtige besondere bauliche Herstellungen vornimmt, eine nach § 40 bewilligungspflichtige Entwässerungsanlage errichtet oder betreibt, nach § 41 Abs. 1 oder 2 bewilligungspflichtige Schutz - oder Regulierungswasserbauten errichtet, eine nach § 50 Abs. 8 bewilligungspflichtige Räumung oder Spülung von Kanälen, Stauräumen, Ausgleichsbecken oder ähnliche Maßnahmen vornimmt oder nach § 56 bewilligungspflichtige vorübergehende Eingriffe in den Wasserhaushalt vornimmt; | | Verwaltungs - strafe | | |
| | 137 (1) | 24. **Einleitungen in eine Kanalisationsanlage** (§ 32b) vornimmt und dabei die gemäß § 33b Abs. 3 **erlassenen Emissionsbegrenzungen** oder die vom Kanalisationsunternehmen zugelassenen Abweichungen **nicht einhält** oder die **Einleitungen ohne Zustimmung** des Kanalisationsunternehmens vornimmt | | Verwaltungs - strafe | | |


Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
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## Auszug Check Strafbestimmung Wasserrechtsgesetz

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| Gesetz | § | Tatbestand | Strafe | Art | Relevanz | Check |
|---|---|---|---|---|---|---|
| Wasserrechtsgesetz 1959 BGBl. Nr. 215/1959 zuletzt geändert durch BGBl I Nr. 123/2006 | 137 (2) | 2. ohne gemäß § 10 Abs. 2 oder 3 erforderliche wasserrechtliche Bewilligung oder entgegen einer solchen Grundwasser erschließt oder benutzt, in den Grundwasserhaushalt eingreift, hiefür dienende Anlagen errichtet, ändert oder betreibt oder artesische Brunnen errichtet oder betreibt; | bis zu **14530€** im Falle der **Uneinbringlichkeit** mit **Ersatzfreiheitsstrafe** bis zu vier Wochen | Verwaltungsstrafe | | |
| | 137 (2) | 7. die gemäß § 105 in Bescheiden vorgeschriebenen Auflagen und Nebenbestimmungen oder die gemäß § 21a in Bescheiden nachträglich vorgeschriebenen anderen oder **zusätzlichen Auflagen nicht einhält** ; | | Verwaltungsstrafe | | |
| | 137 (2) | 8. anzeigepflichtige Maßnahmen ( §§ 32b, 34, 114 Abs. 1, 115) in Angriff nimmt, **ohne diese drei Monate vorher** der Wasserrechtsbehörde anzuzeigen. | | Verwaltungsstrafe | | |
| | 137 (3) | 10. durch **auffallende Sorglosigkeit** oder vorsätzlich eine erhebliche, nicht durch eine Bewilligung gedeckte **Gewässerverunreinigung** bewirkt ( § 31 Abs. 1); | **36340 €** im Falle der **Uneinbringlichkeit** mit **Ersatzfreiheitsstrafe** bis zu sechs Wochen | Verwaltungsstrafe | | |



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## Auszug Check Strafbestimmung Umweltinformationsgesetz

| Gesetz | § | Tatbestand | Strafe | Art | Relevanz | Check |
|---|---|---|---|---|---|---|
| Umweltinformationsgesetz BGBl. Nr. 495/1993 zuletzt geändert durch BG I Nr. 95/2015 | 15 (1) | 1. wer als Betreiber einer Betriebseinrichtung (Art. 2 Z 4 EG -PRTR-V) einen Betriebsangehörigen nachweislich bestraft, verfolgt oder belästigt, weil er der Behörde konkrete Anhaltspunkte für einen Verstoß gegen die in § 9b Abs. 1 genannten Bestimmungen angezeigt hat, bzw | Bis zu **1815€** | Verwaltungsstrafe | | |
| | 15 (1) | **2.a Meldepflicht** entgegen einer gemäß **§ 12** nicht nachkommt | bis zu **3 630 €**, im **Wiederholungsfall** bis zu 7 270 € | Verwaltungsstrafe | | |
| | 15 (1) | 2b Pflicht zur **Bekanntmachung von Emissionsdaten** gemäß **§ 13** nicht nachkommt | | | | |
| | 15 (1) | 3. **Informationspflicht** über die **Gefahr von schweren Unfällen** gemäß **§ 14** nicht nachkommt | bis zu **7270 €**, im **Wiederholungsfall** bis zu **14 530€** | | | |




Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

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## Auszug Check Strafbestimmung ASchG

| Gesetz | § | Tatbestand | Strafe | Art | Relevanz | Check |
|---|---|---|---|---|---|---|
| Arbeitnehmer:Innenschutzgesetz BGBl. Nr. 450/1994 zuletzt geändert durch BGBl. I Nr 136/2001 | 130 (1) | 1. nicht dafür sorgt, daß die Arbeitnehmer bei ernster und unmittelbarer Gefahr gemäß § 3 Abs. 3 und 4 vorgehen können, | von 145€ bis 7 260€, im **Wiederholungsfall** mit Geldstrafe von 290 € bis 14 530€ | | | |
| | 130 (1) | 2. die Verpflichtungen nach § 3 Abs. 5 verletzt, | | | | |
| | 130 (1) | 3. die Verpflichtung zur Bestellung einer geeigneten Person gemäß § 3 Abs. 6 verletzt, | | | | |
| | 130 (1) | 4. die Verpflichtungen betreffend Sicherheits - und Gesundheitsschutzkennzeichnung verletzt, | | | | |
| | 130 (1) | 5. die Verpflichtung zur **Ermittlung und Beurteilung der Gefahren** verletzt, | | | | |
| | 130 (1) | 6. die **durchzuführenden Schutzmaßnahmen** nicht festlegt oder nicht für **deren Einhaltung** sorgt, | | | | |
| | 130 (1) | 11. **die Informations -, Beteiligungs- oder Anhörungspflichten** gegenüber den Arbeitnehmern oder die **Unterweisungspflicht** verletzt, | | | | |
| | 130 (1) | 13. die Verpflichtung zur Erstellung, Aufbewahrung und Übermittlung von **Aufzeichnungen und Berichten über Arbeitsunfälle** verletzt, ausgenommen die Aufzeichnungspflicht nach § 16 Abs. 1 Z 3 | | | | |

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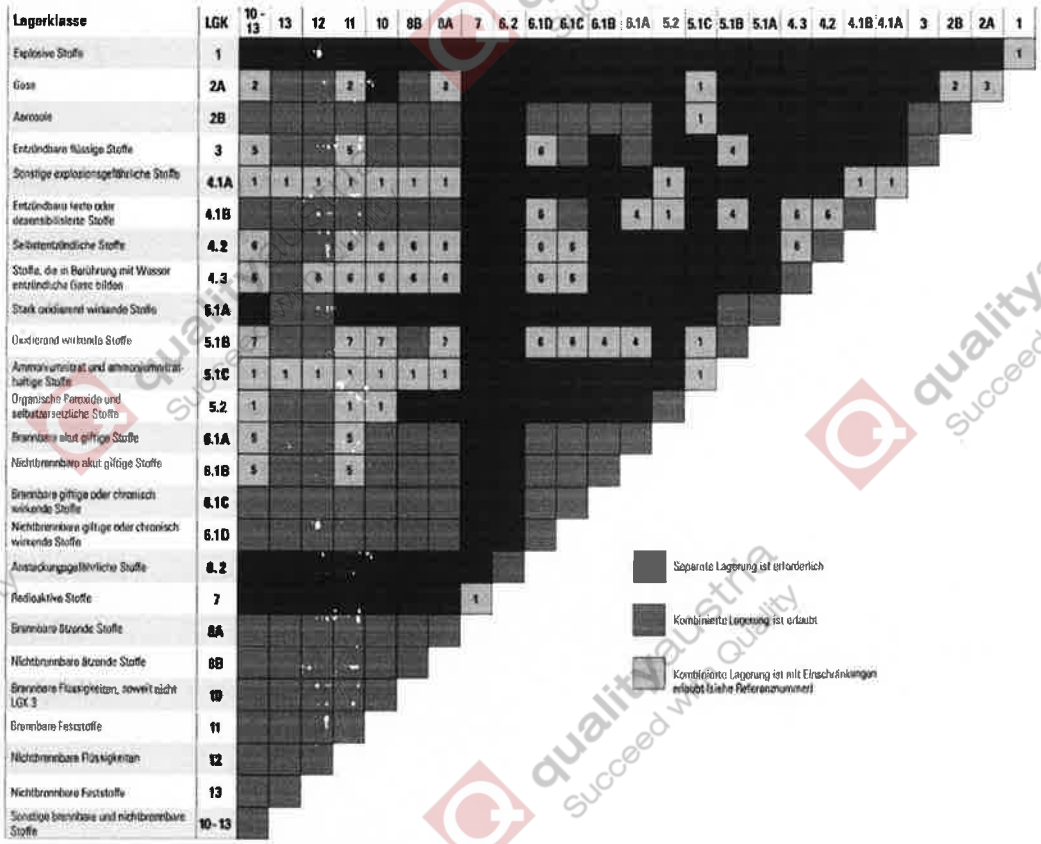
## Auszug Check Strafbestimmung Umweltinformationsgesetz

| Gesetz | § | Tatbestand | Strafe | Art | Relevanz | Check |
|---|---|---|---|---|---|---|
| Umweltinformationsgesetz BGBl. Nr. 495/1993 zuletzt geändert durch BG I Nr. 95/2015 | 15 (1) | 1. wer als Betreiber einer Betriebseinrichtung (Art. 2 Z 4 EG -PRTR-V) einen Betriebsangehörigen nachweislich bestraft, verfolgt oder belästigt, weil er der Behörde konkrete Anhaltspunkte für einen Verstoß gegen die in § 9b Abs. 1 genannten Bestimmungen angezeigt hat, bzw | Bis zu **1815€** | Verwaltungsstrafe | | |
| | 15 (1) | **2.a Meldepflicht** entgegen einer gemäß **§ 12** nicht nachkommt | bis zu **3 630 €**, im **Wiederholungsfall** bis zu 7 270 € | Verwaltungsstrafe | | |
| | 15 (1) | 2b Pflicht zur **Bekanntmachung von Emissionsdaten** gemäß **§ 13** nicht nachkommt | | | | |
| | 15 (1) | 3. **Informationspflicht** über die **Gefahr von schweren Unfällen** gemäß **§ 14** nicht nachkommt | bis zu **7270 €**, im **Wiederholungsfall** bis zu **14 530 €** | | | |

## A.4 SEGREGATION OF INCOMPATIBLE DANGEROUS GOODS (PROHIBITION OF STORING TOGETHER)

IMS Calibration 2022, Ecki Bauer





Customer Service Center: A-4020 Linz, Am Winterhafen 1
Phone: +43 732 34 23 22, Fax: +43 732 34 23 23,
www.qualityaustria.com E-Mail: office@qualityaustria.com

## A.5 AUDIT INSPECTION TOUR – STORAGE OF CHEMICALS – POSSIBLE QUESTIONS AND CHECK POINTS

**审核巡视 – 化学品储存 – 可能的问题与检查点**

IMS Calibration 2022, Ecki Bauer, supplemented by Axel Dick IMS 校准 2022，Ecki Bauer 编写，Axel Dick 补充

| **Question / Checkpoint**<br>**问题 / 检查点** | **Y** | **N** |
|---|---|---|
| Relevant **official decision** reviewed? Decision No.:<br>是否查看了相关的官方决定？决定编号： | | |
| What is stored? **储存的物质有哪些?**<br>**Flammable liquids**; Type/Quantity: 易燃液体；类型 / 数量：<br>**Liquified gases**; Type/Quantity: 液化 体；类型 / 数量：<br>**Corrosive substances**; Type/Quantity: 腐蚀性物质；类型 / 数量：<br>**Gases**; Type/Quantity: 气体；类型 / 数量：<br>**Toxic substances;** Type/Quantity: 有毒物质；类型 / 数量：<br>**Other substances**; Type/Quantity:其他物质；类型 / 数量：<br><br>**Labeling** of storage racks? 储物架是否有标签标识？<br><br>**Storage of poisons**: **有毒物质的储存**:<br>Inaccessible to unauthorized persons? For example, lockable safety cabinet? Warning signs available and clearly visible?<br>**是否对无授权人员不可接触？例如：可上锁的安全柜？是否设有明显可见的警告标识?**<br>Compliance with the **segregation of incompatible dangerous goods / substances**? 是否遵守了不相容危险物质的分开储存要求？ | | |
| Current **list of hazardous substances** available?<br>是否有最新的危险化学品清单？ | | |
| **Current safety data sheets** available (not older than 2 years)?<br>**是否提供了最新的安全数据表（不超过两年）？** | | |
| Suitable **first aid equipment** (see SDS) available?<br>是否根据安全数据表配备了适当的急救设备？ | | |
| Is there sufficient **natural ventilation**? 是否具备足够的自然通风？ | | |
| Are the **emergency exits** clearly marked? 应急出口是否有清晰标识？ | | |
| Suitable **PPE** (see SDS) available? 是否根据 SDS 提供了合适的个人防护装备（PPE）？ | | |
| Is there **evidence** of employee instruction? 是否有员工培训记录的证据？ | | |
| **Interviews** with the employees on site (for example, possible hazards, emergency)是否对现场员工进行了访谈（例如关于潜在危险或应急响应）？ | | |


Customer Service Center: A-4020 Linz, Am Winterhafen 1
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| | | |
|---|---|---|
| Is the **fire protection plan** available? 是否提供了消防预案? | | |
| Is there a **fire alarm system** in the storage area? Latest inspection on:<br>储存区是否设有火灾报警系统? 最近一次检测日期: | | |
| **Suitable fire extinguisher** available? Latest inspection on:<br>是否提供了适当的灭火器? 最近一次检测日期: | | |
| Is the **emergency response plan** available? 是否有应急响应计划? | | |
| Possible risk due to flooding (e.g., receiving waters nearby) in case of heavy ra<br>储存区是否存在因暴雨导致洪水的潜在风险（例如附近有受纳水体）? | | |
| Suitable **binding agents** available? 是否配备了合适的吸附剂? | | |
| **Eye washes** available? 是否设有洗眼器? | | |
| **Emergency shower** available?是否配备了应急冲淋设备? | | |
| **Waste Management Concept:** Statements on substances?<br>废物管理方案中是否有关于储存物质的说明? | | |
| **Waste containers** properly labeled / ...and correctly used?<br>废物容器是否正确标识 / 正确使用? | | |
| Are the following **functions made known**?<br>Extinguishing officer?<br>First aider?<br>以下角色是否已明确告知?<br>灭火责任人?<br>急救员? | | |
| **Emergency numbers** posted on site?现场张贴的紧急联系电话? | | |


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