

# ENVIRONMENTAL MANAGEMENT SYSTEM REQUIREMENTS IN PUBLIC PASSENGER TRANSPORT ISO 14001 : 2004

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**Abstract:** All requirements of ISO 14001: 2004 are intended to be incorporated into any environmental management system. Companies from transport is facing daily with complex situations generated by various factors, form domain legislation up to special transport conditions, weather conditions etc. The management of transport activities is correlated with human resources involved by the specific documents management: visa validity for various countries, health insurance validity, driving license validity, passport etc. The ISO 14001 implementation and compliance requirements organizations / public transport operators keep people under control environmental issues. The application rate will depend on factors such as the organization's environmental policy, nature activities, products and services and where the conditions in which they operate.

**Keywords:** ENVIRONMENT, MANAGEMENT, TRANSPORT, PROCESS, PASSENGER, REQUIREMENTS, SYSTEM

## 1. Introduction

What is a standard?

DEF = "a document established by consensus and approved by a recognized body providing - for common and repeated use - rules, guidelines and features on the activities and results, thus ensuring an optimal level of order in a given context".

Quality: the extent to which a set of inherent characteristics fulfills requirements.

Requirement: need or expectation that is stated, generally implied or obligatory.

System management: system (set of interrelated or interacting elements) that establish policy and objectives and those objectives are achieved.

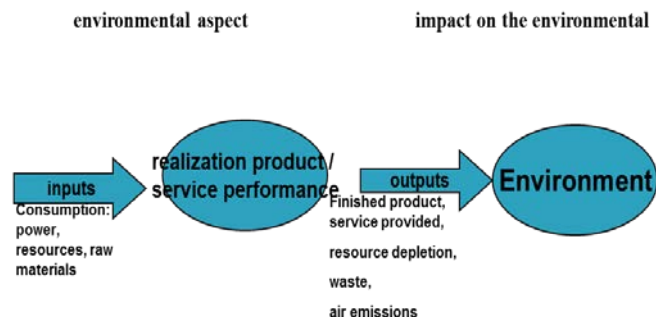
NOTE: A management system of an organization can include different management systems such as a quality management system, a financial management system or **an environmental management system.**

**ENVIRONMENT** = The environment in which an organization operates, including air, water, soil, natural resources, flora, fauna, people and relations between them

**ENVIRONMENTAL ASPECT** = Element's activities, products or services of an organization that can interact with the environment

**ENVIRONMENTAL IMPACT** = any change to the environment, harmful or beneficial, wholly or partially resulting from the organization's environmental aspects

**ENVIRONMENTAL PERFORMANCE** = Measurable results of the management of environmental aspects of an organization (the results can be measured against environmental policy, environmental objectives, environmental targets and other environmental performance requirements).



**Fig. 1** The relationship between environmental aspect and impact

Example: passenger services, with environmental issues: the use of fuel, emission of nitrogen oxides, noise generation, environmental impact: non-renewable resource consumption, air pollution, discomfort to residents.

Environmental issues are: emissions into the atmosphere, discharges into water, waste generation, contamination of soil and groundwater, use of raw materials and natural resources, energy use, emitted energy (heat, radiation, vibration) noise generation.

## 2. Overview certain requirements of the environmental management system of public passenger transport, ISO 14001 : 2004

In setting environmental policy can be taken into consideration:

- Mission, vision and development strategy of the organization;
- Requirements and communication with the stakeholders;
- Continuous improvement;
- Pollution prevention - reducing any significant deleterious environmental aspect;
- Coordination with other organizational policies (eg quality, health and safety);
- Local or regional specific requirements;
- Compliance with regulations and other relevant laws relating to the environment;
- Environmental policy cannot be established without current position to be known as an organization for the environment. This position can be known through preliminary environmental analysis. Results of the analysis should be documented and identify development opportunities for EMS.

Regarding environmental issues specific organization that conducts public passenger transport services must:

- Establish and maintain procedures to identify the environmental aspects of activities, products or services that you can control and over which supposedly has an influence,
- Determine environmental issues that have or may have a significant environmental impact,
- Ensure that issues with a significant impact are considered in setting environmental targets.

The relationship between environmental aspect and impact is a causal relationship – EFFECT. An environmental aspect (cause = input) refers to an item of business, product or service of an organization that may have a beneficial or detrimental environmental impact (Ex.: a discharge, an emission, consumption or reuse of a material).

An impact (effect = output) refers to changes that may occur on the environment of a particular aspect resultant (examples: pollution or water contamination, depletion of natural resources).

Issues related to activities, products and services in the public transport: design and development processes realization services, packaging and transport, environmental performance and practices of contractors and suppliers, waste management, extraction and distribution of raw materials and natural resources, distribution, use

and end of life of a product / service provided, natural ecosystem and biodiversity.

The types of records that should be found in an organization that acts as operator of public transport services, are: registration of complaints, records of training, process monitoring records, records for inspection, maintenance, calibration, relevant information about suppliers and contractors, environmental incidents reports, records of checks on emergency preparedness, the results of environmental management system audits and management reviews, decisions regarding external communications, information regarding the applicable legal requirements and other requirements to which the organization it has taken, information on environmental performance, information on the product manufactured (chemical composition and properties), information on the processes applied (operational control), records on permits, licenses and other legal authorization, communicating with stakeholders.

The identification of environmental impacts and assessment of associated impacts, it is a process that involves four steps are:

Step 1: Choosing an activity, product or service - to be sufficiently significant and comprehensive examination sufficiently well understood to be restricted for ex. flow charts, identifying entries and exits

Step 2: Identify the environmental aspects associated with activities, product or service

Step 3: Identify environmental impacts - real and potential beneficial or harmful associated with each aspect identified

Step 4: Assess the importance of impacts - which may vary from one organization to another. Quantification can help assessment.

Factors to be taken into consideration on environment: the severity of impact, impact intensity, frequency impact (probability of occurrence) duration of the impact (persistence); business related to: compliance with legal and regulatory requirements, difficulties and costs resulting from change impact, the effect of an activity or process change, stakeholder feedback, the effect on the public image of the organization.

In terms of operation will be examined: business processes in normal operating conditions; business processes in abnormal operating conditions (start and stop special equipment, power plant, test operations after repairs, special maintenance operations); predictable stops for emergencies or disasters.

There will be consulted and analyzed all existing documents and records, including: the documentation contained in the file for consent / authorization environmental records of inspections by the Environmental Protection Agency and other bodies responsible for the monitoring and verification authorities; sheets analysis, measuring, recording systematic or occasional other relevant documents (example: procedures, internal regulations, plans and programs for the prevention and / or intervention). The operator of public transport services must establish and maintain a procedure to identify to allow access to the legal and other requirements to which the organization has adopted and which are applicable to the environmental aspects of activities, processes and services.

Indicators that can be used to measure progress in achieving a goal:

- The quantity of raw materials or energy use / operation of the stream, their efficiency;
- The amount of emissions (CO<sub>2</sub>);
- The amount of waste produced, based on the amount of finished product;
- The number of environmental incidents (ex. Deviations from limits);
- Environmental accidents (ex. Recess unintended);
- Percentage of waste or recycled packaging;
- Investment in environmental protection;
- The number of complaints;
- Amounts of specific pollutants (NO<sub>x</sub>, SO<sub>x</sub>, CO, HCl, Pb)

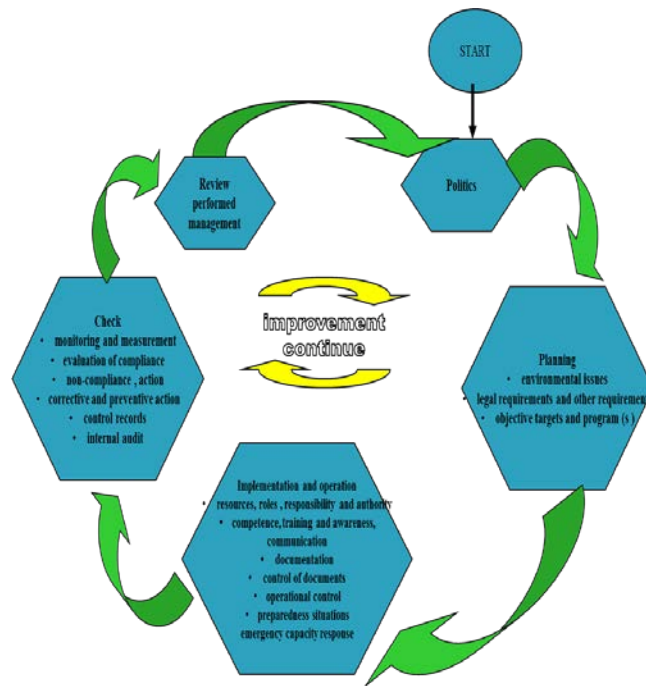


Fig. 2 Requirements of environmental management system

### 3. Conclusions

ISO 14001: 2004 specifies requirements for an environmental management system to enable an organization to develop and implement a policy and objectives which take into account legal requirements and other requirements to which the organization subscribes, and information about significant environmental aspects. It applies to those environmental aspects that the organization identifies as those which it can control and those which it can influence. It does not specify specific environmental performance criteria.

ISO 14001: 2004 is applicable to any organization that wishes to establish, implement, maintain and improve an environmental management system to ensure compliance with its declared policy environment and to demonstrate compliance with ISO 14001 : 2004 by

- a) making a self-determination and self-declaration, or
- b) seeking confirmation of compliance by the parties with an interest in the organization, such as customers, or
- c) request confirmation of self-declaration by a party external to the organization, or
- d) requires certification / registration of its environmental management system by an external organization.

All requirements of ISO 14001: 2004 are intended to be incorporated into any environmental management system. The application rate will depend on factors such as the organization's environmental policy, nature activities, products and services and where the conditions in which they operate.

The ISO 14001 implementation and compliance requirements organizations / public transport operators keep people under control environmental issues.

### References

- \*\*\* ISO 14001:2004 Environmental management systems -- Requirements with guidance for use
- \*\*\* ISO 14004:2004 Environmental Management Systems. Guidelines on principles, systems and techniques.