
Okoljski dokument za področje plina - Smernice za pripravo standardov z namenom zmanjšanja vpliva plinske infrastrukture na okolje v celotnem življenjskem obdobju

Gas-Specific Environmental Document - Guideline for incorporating within standards to minimize the environmental impact of gas infrastructure across the whole life cycle

Gasspezifisches Umweltdokument - Leitfaden, der die Aufnahme von Empfehlungen in Normen beschreibt, welche die Umweltauswirkungen der Gasinfrastruktur über den gesamten Lebenszyklus vermindern

Document environnemental spécifique au gaz - Lignes directrices à incorporer dans les normes afin de réduire l'impact environnemental des infrastructures gazières lors de leur cycle de vie

Ta slovenski standard je istoveten z: CEN/TR 16388:2012

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13.020.10	Ravnanje z okoljem	Environmental management
91.140.40	Sistemi za oskrbo s plinom	Gas supply systems

SIST-TP CEN/TR 16388:2013

en

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TECHNICAL REPORT
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English Version

**Gas-Specific Environmental Document - Guideline for
incorporating within standards to minimize the environmental
impact of gas infrastructure across the whole life cycle**

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directrices à incorporer dans les normes afin de réduire
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Aufnahme von Empfehlungen in Normen beschreibt,
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This Technical Report was approved by CEN on 9 July 2012. It has been drawn up by the Technical Committee CEN/SS S12.

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Foreword

This document (CEN/TR 16388:2012) has been prepared by the CEN Sector Forum Gas Infrastructure.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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1 Scope

The gas supply companies, in the widest sense of their activities (production, transport, distribution), have a long tradition in ensuring that networks and facilities are operated according to well-defined procedures. These procedures are the centrepiece of quality management systems. They are based on the general criteria of the series ISO 9000 and are currently being developed gas-specifically as EQAS (European Quality Assurance System) in CEN/TC 234 in order to adhere more efficiently to the procedures peculiar to the gas activities. Companies are more and more inclined to take into account environmental aspects since the series ISO 14000 resulting in EMAS (Environment Management System). As both the series and the system possess a similar structure, the measures to be taken are directly linked to the technical operations and therefore cannot be dissociated from them.

Environmental issues are expected to feature increasingly in CEN standardisation as the European Commission and its affiliated Member States press ahead with an array of proposals for potential directives. These directives are aimed at boosting the reduction of energy consumption, reducing emissions to air/water and, more generally, at forcing industry to consider any process which may have adverse impacts on the environment.

The CEN Sector Forum Gas Infrastructure (CEN/SFG_I) will take this opportunity to demonstrate through EQAS, the effectiveness of gas companies in this area who are continuously looking for the best technologies (although natural gas is by nature an environmentally friendly energy in comparison with other fossil fuels).

Environmental guides are other tools which CEN has introduced through its Technical Board Resolution C108/2000, by requesting the sector forums and their attached Technical Committees to implement the European Commission policy regarding standardisation.

This Technical Report, intended to be used when drafting or reviewing the standards of CEN/TC 234, does not claim to either lay down dedicated requirements for each operation described in each standard nor to set limit values (e.g. emissions) that would be the specific task of the experts in the working group concerned.

Rather, it serves the purpose of triggering an in-depth reflection on the environmental consequences whenever an operative action is planned or being executed. As a way of implementing the basic scheme it was agreed to accommodate the environmental indicators (EIs marked a to i) in the fields of Table 1 (numbered 1 to 49) which match operations/processes with installation/plant. For each field of the Table referenced then by a number and letters, the corresponding requirements are precisely described in Table 2 "Gas-specific Environmental Requirements".

2 Guidance tables

2.1 List of environmental indicators

Table 1

Ref.	Environmental Indicator (EI)	Definition of impact	Examples of source of impact
a	Resources used	All resources to carry out the work, including pipeline materials (steel, PE...) and reinstatement of materials. In particular those resources that come from non-sustainable sources.	Building new equipments (pipes, terminal, compressor station...)
b	Energy consumption/use	All fuels and other energy sources used to complete the work, particularly those from non-sustainable sources e.g. electricity, vehicle fuel, natural gas....	Civil engineering, (compressors, motorized tools)
c	Emissions to air	All gaseous and vapour releases to atmosphere that may have a detrimental effect upon Air Quality or Greenhouse Gas effect, essentially CO ₂ , CH ₄ , NO _x , CO, Volatile Organic Compounds (VOC) for natural gas.	Venting of gas, flaring (NO _x , CO ₂ , CH ₄ ,...); actions of 3rd
d	Emissions to water	All liquid discharges resulting from the work and in particular those that are released to controlled waters, i.e. streams, rivers, groundwater, seas etc. All emissions to water, defined by Chemical Oxygen Demand (COD), Biological Oxygen Demand (BOD), metal concentration...	Waste water of treatment process, ...

Ref.	Environmental Indicator (EI)	Definition of impact	Examples of source of impact
e	Waste	All unwanted materials and equipment removed for disposal or recycling, e.g. Excavated materials, removed equipment, oil.	Excavation, removal of equipment, use or maintenance of engines, welding
f	Nuisances	The release of unpleasant odours, dust or the generation of noise and vibration.	Installation, operation, maintenance or removal of the gas plant and equipment (regulating stations, compressors, pipelines)
g	Risk to environment by accident or misuse	The impact on the normal operation of gas plant and equipment from unwanted and uncontrolled acts. The effect of these acts should be considered on the other environmental indicators in this table.	Third party intervention (excavator) natural risks (earthquake,...), human or equipment failure
h	Environmental impact on land	The requirement to enter temporarily or to permanently take land to install, operate, or maintain the gas network and the impact this may have on the biodiversity of the area, including environmentally sensitive areas (e.g. forests, protected areas, etc.).	The impact of activities (e.g. construction of station on a protected land)
i	Migration of dangerous substances Impact on soil	The exceptional release of inappropriate substances to the ground with the potential to migrate into the soil.	The impact of past, present or future activities (e.g. decommissioning and removal of mostly former gas production plants)

2.2 Gas infrastructure specific Environmental Requirements

Table 2

Reference	Guidance for implementing Environmental Requirements
	(See subsequent matrix " <i>Environmental scheme for gas companies</i> " for the numbering of activities 1 to 49)
TRANSMISSION AND DISTRIBUTION	
Planning Designing (1 and 8)	<i>general risk assessment</i> (a to i) : considering the use of natural resources required by the new asset across its life cycle and seek minimising their use; equally considering the use of energy required ; considering the quality of materials with respect to the life time for 8: giving particular attention to con-urbanisation

Reference	Guidance for implementing Environmental Requirements
Construction (2 and 9)	<p>(See subsequent matrix "<i>Environmental scheme for gas companies</i>" for the numbering of activities 1 to 49)</p> <p><i>natural resources</i> (a) : limiting importation of materials (sand, stones), considering possible deviation from planning and higher impact on environment</p> <p><i>energy consumption</i> (b) : using high efficiency equipment and targeting the best use of equipment</p> <p><i>water contamination</i> (d) : taking into account weather conditions, avoiding potential contamination of ground water</p> <p><i>waste</i> (e) : using separation of disposal (materials, welds, soil)</p> <p>for 9 : considering the variety of materials the pipelines are made of, including still existing obsolete ones (e.g. tar-coated metal sheets)</p> <p><i>noise, dust</i> (f) : particularly for 9 giving attention to con-urbanisation, minimizing disturbances and impact on local surroundings (noise, dust, traffic)</p> <p><i>risk assessment</i> (g) : following procedure to eliminate/mitigate any possible accident/incident</p> <p><i>land</i> (h): limiting the access to sites</p>
Commissioning (3 and 10)	<p><i>resources</i> (a) : choosing a source of water not used for another activity</p> <p><i>air</i> (c) : minimizing the release of CH₄, N₂, CO₂</p> <p><i>waste water</i> (e) : using a disposal of test water</p> <p><i>risk assessment</i> (g) : following procedures to eliminate/mitigate any possible accident/incident</p>

Reference	Guidance for implementing Environmental Requirements
	(See subsequent matrix " <i>Environmental scheme for gas companies</i> " for the numbering of activities 1 to 49)
Operation (4 and 11)	<i>air –CH₄</i> (c) : minimizing gas leakages/losses <i>risk</i> (g) : mitigating the risk of 3 rd party interference, failure of pipeline, natural occurrences (landslide, flooding) for 11 :particularly with regards to cast iron and polyethylene
Maintenance (5 and 12)	<i>air</i> (c) : minimizing the release of CH ₄ (e.g. valves) <i>waste</i> (e) : reducing to small quantities → consideration at the discretion of the gas companies <i>dust</i> (f) : avoiding dust emissions during pigging operations <i>risk</i> (g) : minimizing the risk during maintenance operations (spillage)
Repair Renovation (6 and 13)	<i>resources</i> (a) : limiting importation of materials (sand, stones), considering possible deviation from planning <i>energy</i> (b) : using high efficiency equipment and targeting at the best use of equipment <i>water</i> (d) : taking into account weather conditions to avoid potential contamination of ground water <i>waste</i> (e) : use separation of disposal (materials, welding, soil) <i>noise</i> (f) : minimizing disturbances and impact on local surroundings (noise, dust, traffic), particularly for 13 given con-urbanisation <i>risk</i> (g) : following procedures to eliminate/mitigate any possible accident/incident <i>land</i> (h) : limiting access to sites