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## Biogas systems — Non-household and non-gasification

*Installations de méthanisation — Non domestique et sans gazéification*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 255, *Biogas*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

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# Introduction

## 0.1 General

The technical committee on biogas (ISO/TC 255) was established in 2011 in order to:

- provide liberalization and facilitation for international trade of biogas systems;
- contribute to international co-operation on technical regulations, standards and assessment procedures;
- curb discriminatory technical requirements as the main form of trade protectionism; and
- reduce and eliminate the technical barriers for international trade of biogas systems.

This document about biogas systems is applicable for biogas production by anaerobic digestion, biogas conditioning, biogas upgrading and biogas utilization. The main purpose of this document is the safe operation of biogas systems without damaging the environment.

The availability of a standard for biogas systems is necessary in order to:

- ensure that biogas systems are built, operated and maintained safely;
- facilitate development of regional and national regulations and incentive programs to regulate methane emissions;
- moderate communication between the different biogas parties through meaningful discussions;
- contribute to reinforcement of biogas flares' safety and business competitiveness with recognized terms and definitions that clarify actors' expectations related to procurement, contracts and services as well as reporting on biogas related action plans, road maps, etc.; and
- contribute to the use of standards by facilitating their development and furthering users' understanding and application of standards.

ISO/TC 255 intends to promote international technology exchange and to accelerate international application of biogas (products) and equipment by developing and maintaining globally harmonized standards. For the avoidance of doubt, it is noted that national legislation may apply which may deviate from or may be additional to the contents of this document.

## 0.2 Description of the applied technologies

Biogas systems are amongst others applied at industrial plants like food and beverage industries, waste water treatment plants, waste plants, landfill sites, and small-scale plants next to agricultural companies.

Biogas is produced by anaerobic digestion of organic matter.

Biogas mainly comprises methane, carbon dioxide, nitrogen, oxygen, hydrogen sulphide and/or water and furthermore could contain hydrogen, carbon monoxide, heavier hydrocarbons (including aromatic hydrocarbons), siloxanes and/or other substances.

Biogas can be treated in order to eliminate hydrogen sulphide, siloxanes, water and other substances and be upgraded to a gas with higher methane content. Sometimes the biogas is pressurized.

A description of the most common technologies used in biogas systems is included in [Annex B](#).

Guidelines to prevent risks from gasses and explosive atmospheres in buildings are included in [Annex C](#).