SLOVENSKI STANDARD
oSIST prEN ISO 6338:2026

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Metoda za izračun emisij toplogrednih plinov v obratu za utekočinjeni zemeljski plin (ISO 6338:2023)

Method to calculate GHG emissions at LNG plant (ISO 6338:2023)

Methode zur Berechnung der Treibhausgasemissionen einer LNG-Anlage (ISO 6338:2023)

Méthode pour calculer les émissions de GES dans les usines GNL (ISO 6338:2023)

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Method to calculate GHG emissions at LNG plant

Méthode pour calculer les émissions de GES dans les usines GNL

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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.

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This document was prepared by Technical Committee ISO/TC 67, *Oil and gas industries including lower carbon energy*, Subcommittee SC 9, *Production, transport and storage facilities for cryogenic liquefied gases*.

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.

Introduction

Natural gas will play a key role in the energy transition (e.g. by replacing coal to produce electricity) and the use of LNG to transport natural gas is expected to increase. The process of liquefying natural gas is energy-intensive. Gas producers are increasingly accountable for their greenhouse gas (GHG) emissions and the ambition to reduce them. Furthermore, there is an emerging marketing demand for GHG data to enable commercial mechanisms such as offsetting to be utilized.

There is no standardized and auditable methodology to calculate the carbon footprint of the whole LNG chain (including but not limited to the well, upstream treatment, transportation, liquefaction, shipping, regasification and end user distribution). Various standards indicate possible approaches but these are not consistent in their results or easily applicable.

Method to calculate GHG emissions at LNG plant

1 Scope

This document provides a method to calculate the GHG emissions from an LNG liquefaction plant, onshore or offshore.

The frame of this document ranges from the inlet flange of the LNG plant's inlet facilities up to and including the offloading arms to truck, ship or railcar loading. The upstream supply of gas up to the inlet flange of the inlet facilities and the distribution of LNG downstream of the loading arms are only covered in general terms.

This document covers:

— all facilities associated with producing LNG, including reception facilities, condensate unit (where applicable), pre-treatment units (including but not limited to acid gas removal, dehydration, mercury removal, heavies removal), LPG extraction and fractionation (where applicable), liquefaction, LNG storage and loading, Boil-Off-Gas handling, flare and disposal systems, imported electricity or on-site power generation and other plant utilities and infrastructure (e.g. marine and transportation facilities).

— natural gas liquefaction facilities associated with producing other products (e.g. domestic gas, condensate, LPG, sulphur, power export) to the extent required to allocate GHG emissions to the different products.

— all GHG emissions associated with producing LNG. These emissions spread across scope 1, scope 2 and scope 3 of the responsible organization. Scope 1, 2 and 3 are defined in this document. All emissions sources are covered including flaring, combustion, cold vents, process vents, fugitive leaks and emissions associated with imported energy.

The LNG plant is considered "under operation", including emissions associated with initial start-up, maintenance, turnaround and restarts after maintenance or upset. The construction, commissioning, extension and decommissioning phases are excluded from this document but can be assessed separately.

The emissions resulting from boil-off gas management during loading of the ship or any export vehicle are covered by this document. The emissions from a ship at berth, e.g. mast venting are not covered by this document.

This document describes the allocation of GHG emissions to LNG and other hydrocarbon products where other products are produced (e.g. LPG, domestic gas, condensates, sulphur, etc.).

This document defines preferred units of measurement and necessary conversions.

This document also recommends instrumentation and estimations methods to monitor and report GHG emissions. Some emissions are measured and some are estimated.

This document is applicable to the LNG industry.

Applications include the provision of method to calculate GHG emissions through a standardized and auditable method, a means to determine their carbon footprint.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.