



SLOVENSKI STANDARD
oSIST prEN ISO 14083:2022
01-april-2022

Toplogredni plini - Količinsko določanje in poročanje o emisijah toplogrednih plinov, ki nastanejo pri dejavnostih prometne verige (ISO/DIS 14083:2022)

Greenhouse gases - Quantification and reporting of greenhouse gas emissions arising from transport chain operations (ISO/DIS 14083:2022)

Treibhausgase - Quantifizierung und Berichterstattung über Treibhausgasemissionen von Transportvorgängen (ISO/DIS 14083:2022)

Empreinte carbone des opérations de transport - Exigences et lignes directrices pour la quantification (ISO/DIS 14083:2022)

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ICS:

13.020.40	Onesnaževanje, nadzor nad onesnaževanjem in ohranjanje	Pollution, pollution control and conservation
13.040.50	Emisije izpušnih plinov v prometu	Transport exhaust emissions

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Greenhouse gases — Quantification and reporting of greenhouse gas emissions arising from transport chain operations

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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).

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This document was prepared by Technical Committee ISO/TC 207, *Environmental management*.

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.

2022

Introduction

This document provides requirements and guidance for the quantification, assignment, allocation and reporting of greenhouse gas (GHG) emissions for transport chains for passengers and freight. This document is not intended to be judgemental in determining the best transport option. It is simply seeking to provide a measure of the GHG emissions.

This document provides such a calculation with its related reporting. It specifies how to source data as input for the calculation, taking into account that transport operations vary hugely, from multinational organizations operating multiple transport modes to deliver transport services across the globe, through small local operators delivering a simple service to a single user; hence this document has adopted a structure to make it widely applicable. To ensure that values for GHG emissions that result from vehicle and hub operation and associated energy provision are considered, this document takes into account the GHG emissions associated with production and distribution of energy (including, for example, production and distribution of liquid energy carriers or grid transmission of electricity). As a result, calculation results can enable a consistent comparison of possible different energy carriers by transport service operators, users and any other interested parties. Calculation results are only directly comparable if all options chosen are internally consistent.

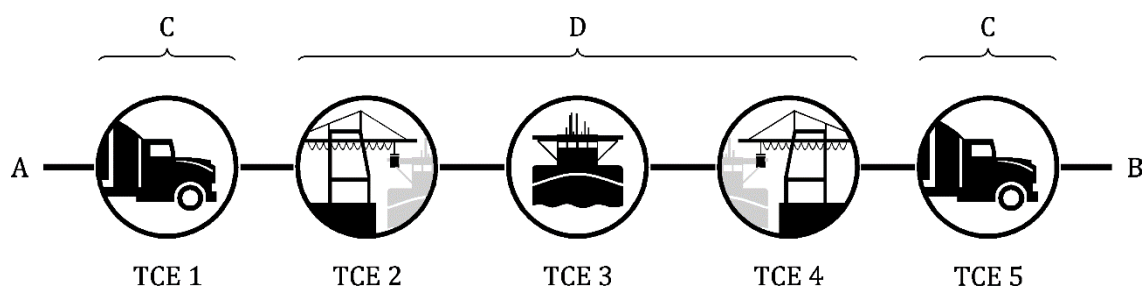
This document covers all modes of transport (land, water or in the air, irrespective of the means of transport i.e. vessel, vehicle or pipeline) and includes the operational emissions from transport hubs where they facilitate transfer of freight or passengers from one element of a transport chain to the next. It takes account of operation of empty trips required for subsequent transportation of freight or passengers. It is applicable at all stages along the entire transport chain (see also illustrative examples in Figure 1 and Figure 2). The outputs from such calculations would need to be combined with other calculations that are not within the scope of this document when it comes to the comparison of broader activities, for example:

It is applicable at all stages along the entire transport chain (see illustrative examples in Figure 1 and Figure 2)

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- Comparison of emissions from a journey consisting of a flight with an alternative journey by car, the latter requiring a hotel stay
- Carbon accounting of impact of near shoring, which might affect production processes along the overall supply chain

Figure 1 provides an illustrative example of a freight transport chain from the point where freight leaves its last point of production or transformation (A, freight consignor) to the point where freight reaches its first non-transport related operation (B, freight consignee). This transport chain consists of 5 transport chain elements (TCEs), the GHG emissions of which are calculated separately. The first and last transport chain elements (TCE 1, 5) represent road services (C) covering pre- and on-carriage; TCEs 2 to 4 represent a maritime shipping service (D) composed of maritime terminal operations (TCE 2, 4) and main carriage on sea (TCE 3).



Key

- A freight consignor
- B freight consignee

- C road services
D shipping service

Figure 1 — Illustrative example of a multi-element freight transport chain

Figure 2 provides an illustrative example of a passenger transport chain from the point where passengers leave their departure location, A, to their destination, B. This transport chain consists of 5 transport chain elements (TCEs), the GHG emissions of which are calculated separately. The first transport chain element (TCE 1) represents transport of the passenger from home to the airport by private car (C); TCEs 2 to 4 represent an air travel service (D) composed of passenger terminal operations for the passenger and luggage (TCE 2, 4) and main carriage by plane (TCE 3). The on-carriage represented by transport chain element TCE 5 shows shuttle express via rail (E).

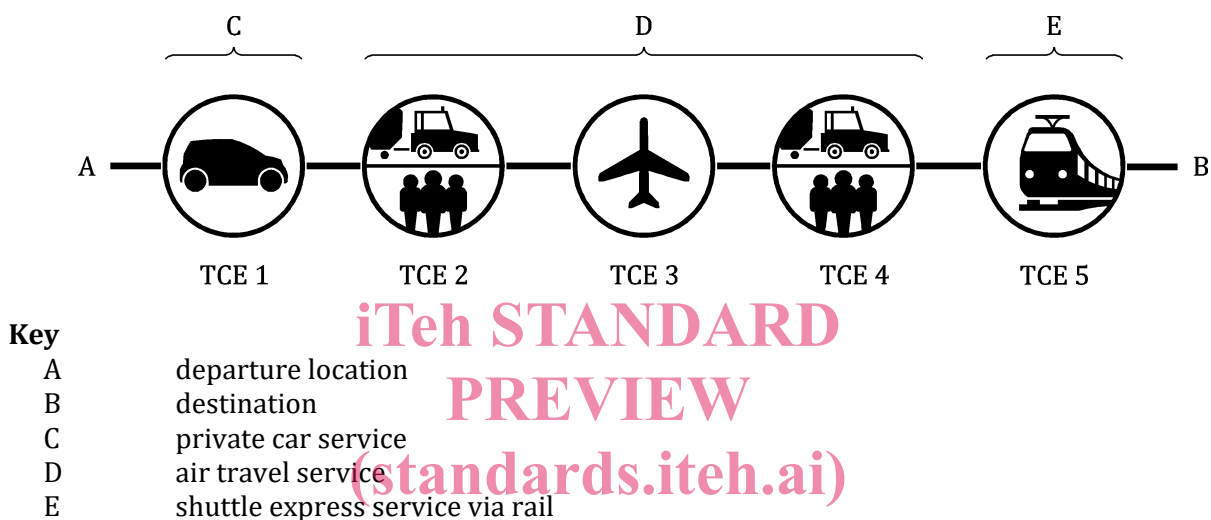


Figure 2 — Illustrative example of a multi-element passenger transport chain

The reporting set out in this document reflects the need to report information between the parties in a transport chain because information known to the transport or hub operator, when reported to the user of their service, will help the latter to quantify, better manage and reduce the impacts of their transport or hub activities. This is a standard for emission calculation and not for carbon balancing, therefore, offsetting is not part of this document.

This document is not intended to be used in isolation. It is aligned with the ISO 14064 series and ISO 14067 (Figure 3). It contributes to the carbon footprint of products (ISO 14067) and the life cycle assessment according to the ISO 14040 and ISO 14044. Figure 3 shows the relationship of ISO 14083 to other ISO standards of the ISO 14040 and 14060 family, using the example of a freight transport chain and including possible stages within the life cycle of a product bought online as well as example topics to be covered by a company's GHG inventory.

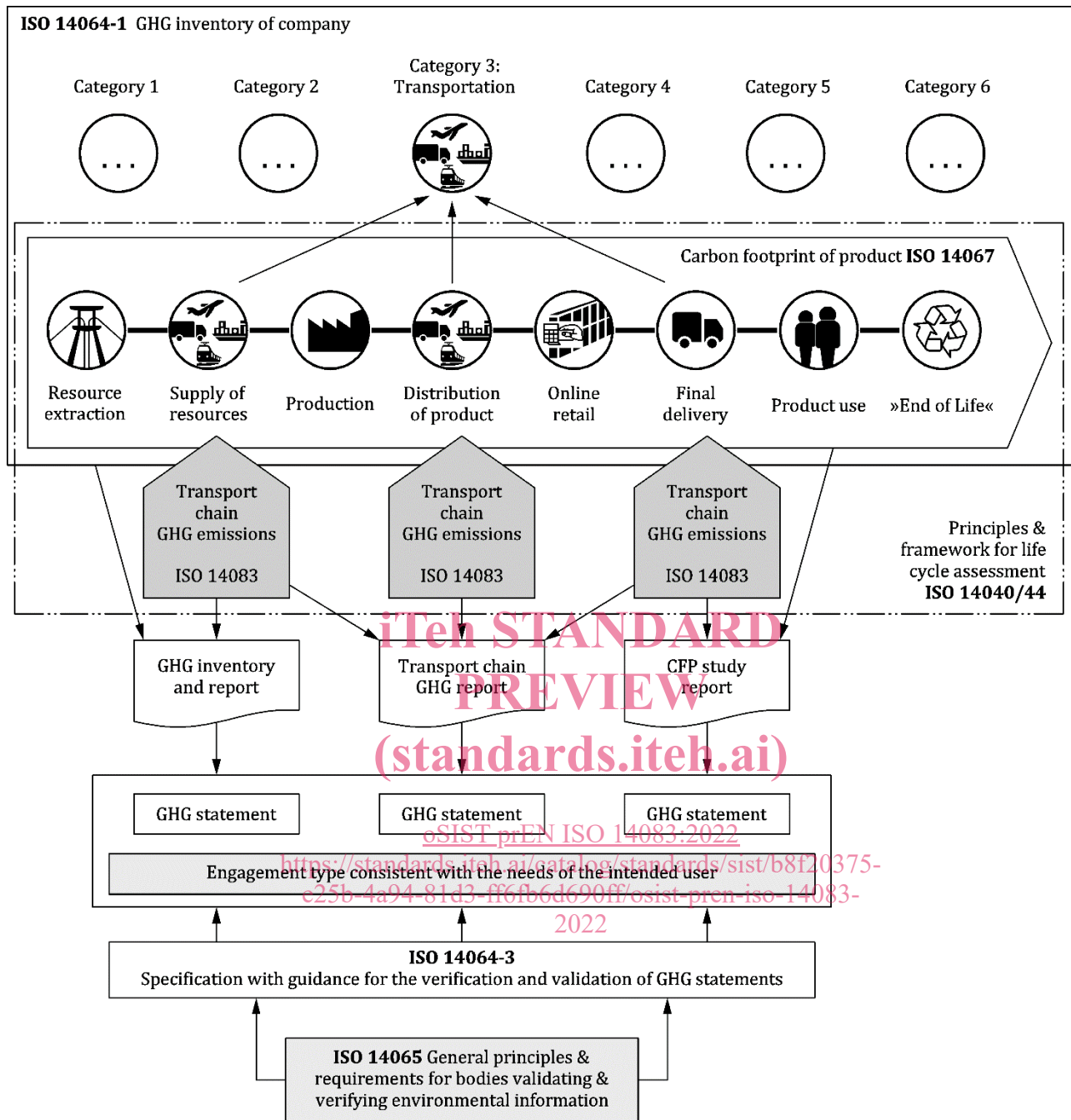


Figure 3 — Relationship among the ISO 14040 and 14060 family, using the example of a freight transport chain

NOTE GHG emission intensity per tonne- or passenger-km calculated according to ISO 14083 can be used as primary or secondary data for GHG quantification projects according to ISO 14067 and/or ISO 14064-1. These data would require adaptation or modification to reflect full life cycle based GHG-emissions taking into account, for example vehicle manufacture or transport infrastructure provision.

This document includes the work which has been developed in the **IWA 16:2015(E)** and builds the basis for the revision of EN 16258:2012 under the Vienna Agreement. The approach acknowledges, and is in line with, the valuable work conducted on GHG calculation and reporting that is documented in the aforementioned standards and by other protocols and organizations, including but not limited to, UNFCCC, Greenhouse Gas Protocol and the GLEC Framework for Logistics Emissions Accounting and Reporting.

Greenhouse gases — Quantification and reporting of greenhouse gas emissions arising from operations of transport chains

1 Scope

This document establishes a common methodology for the quantification and reporting of GHG emissions arising from the operations of transport chains of passengers and freight.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1 Terms relating to transport chain operations

3.1.1 charter

contract for the hire of a specific vessel, vehicle or aircraft from an owner for a specified period of time for the charterer's purposes subject to agreed restrictions

Note 1 to entry: The hiring period can vary between one voyage to several years.

3.1.2 collection and delivery round

trip with the purpose to collect and/or deliver freight at successive locations along the trip

Note 1 to entry: Typically, but not necessarily, the trip starts and ends at the same location.

3.1.3 consignment

separately identifiable amount of goods (available to be) transported from one consignor to one consignee via one or more modes of transport

Note 1 to entry: A consignment can consist of liquid or solid materials or substances, without any packaging (e.g. bulk freight), or of loose items of unpacked goods, packages, or unitized goods (on pallets or in containers) or goods loaded on transport units and carried on active means of transport or specified amounts of gas transported in a closed system.

[SOURCE: ISO 17261:2012, 3.12, modified — Note 1 to entry added; reference to specification in a single transport document removed.]