

# ISO14083 : Summary of requirements and key principles

BS EN ISO 14083:2023



BSI Standards Publication

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

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1. Changes in terminology
2. Concept of TOCs & HOCs
3. Dealing with empty mileage
4. Calculation process
5. Calculation methodology
6. Reporting
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# CHANGES IN TERMINOLOGY

Key points ;

- No longer talk about Well to Wheel or Tank to Wheel
- No longer talk about Scope 1 and Scope 3 emissions
- Introduction of Transport Operation Categories (TOCs) and Hub Operation Categories (HOCs)

# NEW TERMINOLOGY

EN 16258	ISO 14083
tank-to-wheels (TTW)	vehicle use (includes leakages of refrigerant)
well-to-tank (WTT)	vehicle energy provision
well-to-wheels (WTW)	total (vehicle use + vehicle energy provision)
vehicle operation system (VOS)	transport operation category (TOC)
leg (of a transport service)	transport chain element (TCE)
specific measured values	primary data (for the transport operation)
transport operator specific values	primary data (for the TOC)
transport operator fleet values	primary data (for the whole fleet)

## MAIN DIFFERENCES FROM EN16258

- Emphasis on transport chains rather than a transport service
- Focus on how transport and hub operations combine
- Includes refrigerant leakage
- Shortest Feasible Distance (SFD) or Great Circle Distance (GCD) used for activity distance
- Use a Distance Adjustment Factor (DAF) to convert actual distance into activity distance
- Reporting may be ; at organisational level or at transport chain element level

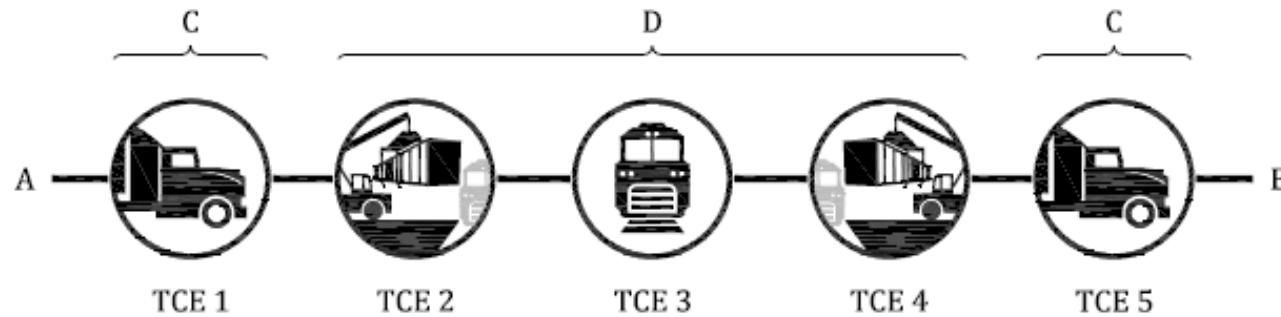
## CONCEPT OF TOCS & HOCS

Key definitions ;

- **Transport Operation Category (TOC)** = a group of transport operations that share similar characteristics (see annexes A-G for examples)
- **Hub Operation Category (HOC)** = a group of hub operations that share similar characteristics (see annex H for examples)
- **Transport Chain Element (TCE)** = a section of a transport chain within which the freight is carried by a single vehicle or transits through a single hub

# EXAMPLE OF A TRANSPORT 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 five transport chain elements (TCEs), the GHG emissions of which are calculated separately. The first and last TCEs (TCE 1, TCE 5) represent road services (C) covering pre- and on-carriage; TCE 2 to TCE 4 represent a rail freight service (D) composed of road/rail terminal operations (TCE 2, TCE 4) and main carriage by rail transport (TCE 3).

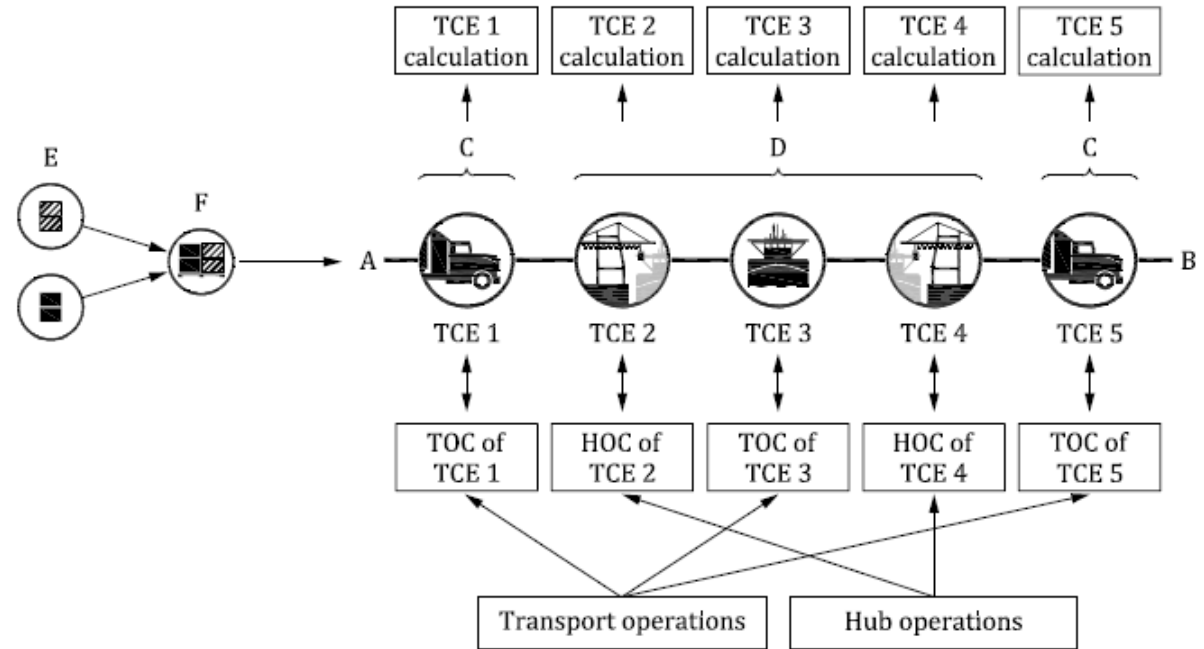


**Key**

- A freight consignor
- B freight consignee
- C road services
- D rail freight service

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

# GENERAL PRINCIPLES OF A TRANSPORT CHAIN



- Key**
- A cargo consignor
  - B cargo consignee
  - C road services
  - D maritime shipping service
  - E shipment
  - F consignment

Figure 4 — Diagrammatic relationship between operations and TCEs for an example freight transport chain



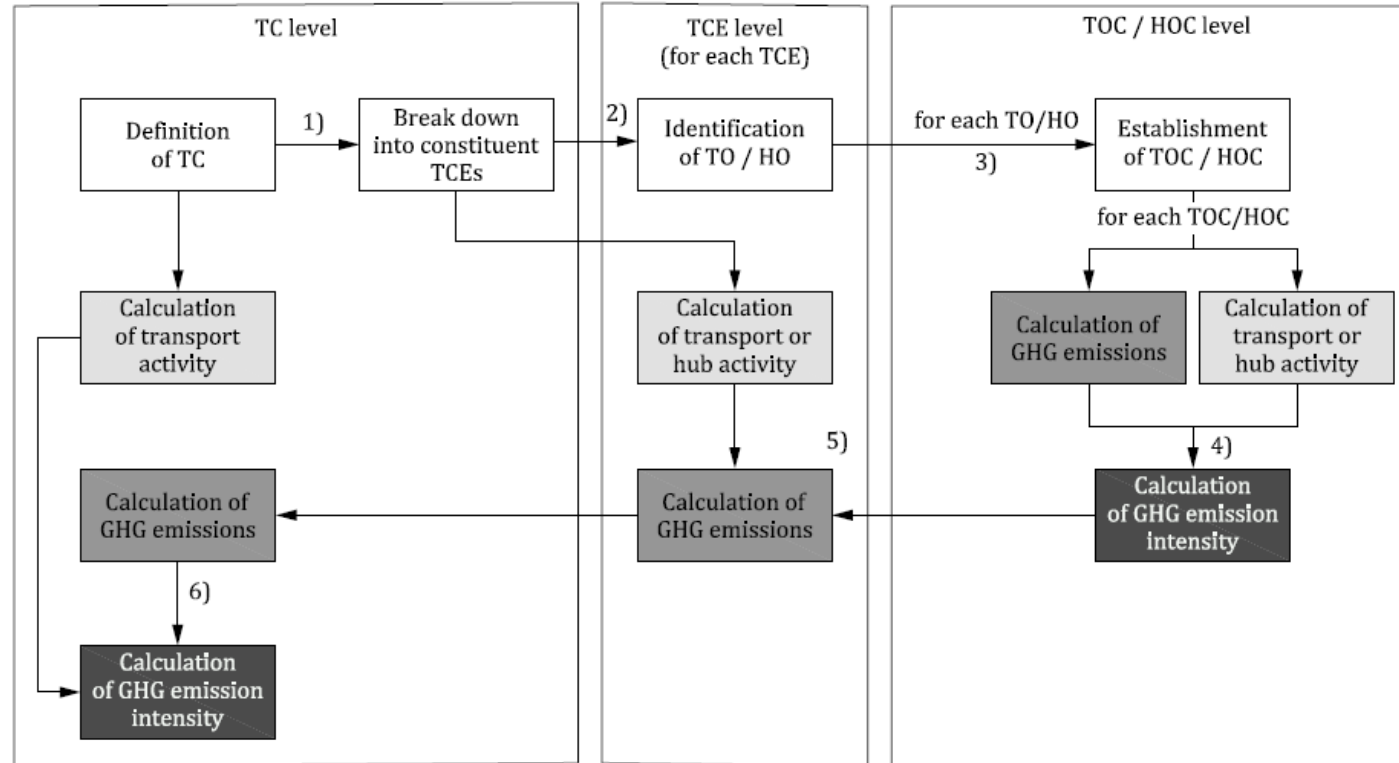
## QUANTIFICATION PRINCIPLES

- Carbon offsetting is excluded (5.2.7)
- Transport activity for freight transport is **Tonne/KMs** (5.4.2)
- Hub activity is Tonnes of freight (outbound) (5.5.2)

## DEALING WITH EMPTY MILEAGE

“The TOC should include loaded trips and all the empty trips related to them. Hence the **GHG emissions for a single transport or hub operation cannot be calculated without reference to the TOC or HOC in which it takes place**. This means, for example, the GHG emissions from point A to point B for a full truckload truck cannot be calculated without taking into consideration the movements and transport operations of this truck before A and after B that make a complete match to the TOC definition. It is therefore crucial to **create transparency on the TOC definition and its level of granularity**.”

# CALCULATION PROCESS



- Transport chain broken down into its elements
- Each TCE relates to a transport or hub operation
- Each transport or hub operation relates to a TOC or HOC
- GHG emission intensity is established for each TOC or HOC
- GHG emissions of each TCE is calculated based on the corresponding emission intensity and transport or hub activity of this TCE
- Finally, the GHG emissions of the transport chain are the sum of the emissions of its TCEs

A large part of the standard is devoted to the formulae to be used in the emissions calculation.

This is an example for the calculation of Tonne/Kilometres

#### 8.4.4 Transport activity of a TOC of freight — General case

In this general case, calculation of the freight transport activity of a TOC shall be made using [Formula \(8\)](#):

$$T_{\text{TOC},f} = \sum_1^c M_i \times s_{ci} \quad (8)$$

where

$T_{\text{TOC},f}$  is the freight transport activity of the TOC;

$M_i$  is the mass of an individual consignment  $i$  in the TOC;

$s_{ci}$  is the transport activity distance of an individual consignment  $i$  in the TOC;

$c$  is the number of consignments in the TOC.

**NOTE 1** In situations where the transport activity distance travelled by each consignment is unknown, freight transport activity can be calculated either by multiplying the total mass of consignments by the average transport distance travelled by each consignment.

**NOTE 2** In situations where an alternative option for the quantity of freight is being used,  $M_i$  can be replaced in [Formula \(8\)](#) by the appropriate unit, e.g. number of items or number of TEUs.

## REPORTING FORMAT

- Part of the implementation of the standard is the establishment of a report.
- Report can be at organisational level or at the level of transport or hub services.
- At ***organisational level***, the reporting may be split, for example, by business unit, geographical region, subsidiary or other relevant criteria.
- Reporting should be at least annually.
- At the ***level of transport or hub services*** ;
  - The report may be for a single TCE or a set of TCEs that comprise a part of, or a full transport chain
  - The aggregation of transport chains for reporting purposes can be done in accordance with contractual agreements and/or period of implementation of these services

## REPORTING FORMAT

“Supporting information shall ensure transparency and a clear understanding of the reporting by the full potential group of users of this document.”

## USEFUL ANNEXES

Annex F ; Road Transport

Annex H ; Hubs

Annex K ; Emission Factors

Annex Q ; Default GHG Emission Intensities

## IMPACT ON LSP'S

- We do not expect an immediate direct impact on chemical LSPs from the launch of this standard.
- We will continue to follow the GLEC framework which will be revised to take account of this standard
- There will be a new Cefic/ECTA guideline on emissions calculation which will be presented at the RC workshop in September
- The SQAS questions will be updated in line with the revised GLEC Module 5.