

DIN EN ISO 14083:2024-06 (E)

Greenhouse gases - Quantification and reporting of greenhouse gas emissions arising from transport chain operations (ISO 14083:2023)

| Contents | | Page |
|------------------------------------|---|-------------|
| European foreword | | 6 |
| Annex S (informative) | | 7 |
| Foreword | | 10 |
| Introduction | | 11 |
| 1 Scope | | 14 |
| 2 Normative references | | 14 |
| 3 Terms and definitions | | 14 |
| 3.1 | Terms related to transport chain operations | 14 |
| 3.2 | Terms related to greenhouse gases and energy | 19 |
| 3.3 | Terms related to quantification | 22 |
| 3.4 | Other terms | 24 |
| 4 General principles | | 24 |
| 4.1 | General | 24 |
| 4.2 | Relevance | 24 |
| 4.3 | Completeness | 25 |
| 4.4 | Consistency | 25 |
| 4.5 | Accuracy | 25 |
| 4.6 | Transparency | 25 |
| 4.7 | Conservativeness | 25 |
| 5 Quantification principles | | 25 |
| 5.1 | General | 25 |
| 5.2 | System boundaries | 25 |
| 5.2.1 | Transport operations and hub operations included | 25 |
| 5.2.2 | Processes included | 26 |
| 5.2.3 | Application of cut-off criteria | 27 |
| 5.2.4 | Processes not included | 27 |
| 5.2.5 | Optional processes | 27 |
| 5.2.6 | Optional quantification of black carbon emissions from transport operations | 28 |
| 5.2.7 | Carbon offsetting and GHG emissions trading | 28 |
| 5.3 | Conversion of energy carrier data into GHG emissions | 28 |
| 5.3.1 | General | 28 |
| 5.3.2 | Global warming potential | 28 |
| 5.4 | Calculation of transport activity | 28 |
| 5.4.1 | Passenger transport | 28 |
| 5.4.2 | Freight transport | 29 |
| 5.4.3 | Combined transport of freight and passengers (including passenger vehicles) | 30 |
| 5.4.4 | Use of distance adjustment factor | 30 |
| 5.5 | Calculation of hub activity | 30 |
| 5.5.1 | Passenger hub | 30 |
| 5.5.2 | Freight hub | 31 |
| 5.5.3 | Combined freight and passenger hub (including passenger vehicles) | 31 |
| 5.6 | Allocation | 31 |
| 5.6.1 | General | 31 |
| 5.6.2 | Allocation between passengers and freight | 32 |
| 5.6.3 | Allocation between passengers of different travel classes | 32 |

| | | |
|-----------|---|-----------|
| 5.6.4 | Allocation between ambient and temperature-controlled freight..... | 32 |
| 6 | General principles related to transport chains, transport chain elements, transport operation categories and hub operation categories..... | 32 |
| 6.1 | Transport chains and TCEs..... | 32 |
| 6.2 | Transport operations and hub operations related to TCEs..... | 32 |
| 6.3 | Transport operation categories and hub operation categories..... | 34 |
| 6.3.1 | General..... | 34 |
| 6.3.2 | Transport operation categories..... | 34 |
| 6.3.3 | Hub operation categories..... | 37 |
| 7 | Quantification actions..... | 39 |
| 7.1 | General..... | 39 |
| 7.2 | Establishment of GHG emission intensity of a TOC or a HOC..... | 40 |
| 7.2.1 | General..... | 40 |
| 7.2.2 | Selection of the option..... | 40 |
| 7.2.3 | Calculation with primary data (option A)..... | 40 |
| 7.2.4 | Calculation with a model (option B)..... | 41 |
| 7.2.5 | Selection of a value from a database of default values (option C)..... | 41 |
| 7.2.6 | Collection of a value from a contracted operator (option D)..... | 41 |
| 7.3 | Calculation of GHG emissions for a TCE..... | 41 |
| 7.4 | Calculation of GHG emissions for a transport chain..... | 41 |
| 8 | Quantification actions at the TOC level..... | 41 |
| 8.1 | General..... | 41 |
| 8.2 | Quantification of the GHG activity data of a TOC..... | 42 |
| 8.3 | Calculation of GHG emissions of a TOC..... | 42 |
| 8.3.1 | General..... | 42 |
| 8.3.2 | No allocation needed..... | 42 |
| 8.3.3 | Allocation needed..... | 43 |
| 8.4 | Calculation of transport activity of a TOC..... | 44 |
| 8.4.1 | General..... | 44 |
| 8.4.2 | Transport activity distance..... | 44 |
| 8.4.3 | Transport activity of a TOC of passengers — General case..... | 44 |
| 8.4.4 | Transport activity of a TOC of freight — General case..... | 45 |
| 8.4.5 | Transport activity of a TOC of passengers with multi-class vehicles..... | 45 |
| 8.4.6 | Transport activity of a TOC of freight with multi-temperature vehicles..... | 46 |
| 8.4.7 | Transport activity of a TOC with passengers and freight (whether including passenger vehicles or not)..... | 47 |
| 8.4.8 | Transport activities of a TOC with any other case..... | 48 |
| 8.5 | Calculation of GHG emission intensity for the TOC..... | 48 |
| 8.5.1 | General..... | 48 |
| 8.5.2 | General case..... | 48 |
| 8.5.3 | Case of a TOC of freight with multi-temperature vehicles..... | 49 |
| 9 | Quantification actions at the HOC level..... | 49 |
| 9.1 | General..... | 49 |
| 9.2 | Quantification of the GHG activity data of a HOC..... | 49 |
| 9.3 | Calculation of GHG emissions of a HOC..... | 50 |
| 9.3.1 | General..... | 50 |
| 9.3.2 | No allocation needed..... | 50 |
| 9.3.3 | Allocation needed..... | 51 |
| 9.4 | Quantification of hub activity of the HOC..... | 52 |
| 9.4.1 | Freight hub activity..... | 52 |
| 9.4.2 | Passenger hub activity..... | 52 |
| 9.5 | Calculation of GHG emission intensity for the HOC..... | 52 |
| 9.5.1 | General..... | 52 |
| 9.5.2 | General case..... | 52 |
| 9.5.3 | Case of a HOC of freight with multi-temperature conditions..... | 53 |
| 10 | Calculation of GHG emissions for a transport TCE..... | 53 |
| 10.1 | General..... | 53 |
| 10.2 | Calculation of transport activity..... | 53 |
| 10.3 | Selection of a GHG emission intensity..... | 53 |

| | | |
|---|--|-----------|
| 10.4 | General case | 54 |
| 10.5 | Case of differentiation by passenger classes | 54 |
| 10.6 | Case of differentiation by cargo temperature | 54 |
| 10.7 | Case of transport of passengers and freight in the same vehicle | 54 |
| 11 | Calculation of GHG emissions for a hub TCE | 54 |
| 11.1 | General | 54 |
| 11.2 | Quantification of hub activity | 55 |
| 11.3 | Selection of a GHG emission intensity | 55 |
| 11.4 | General case | 55 |
| 11.5 | Case of differentiation by cargo temperature | 55 |
| 11.6 | Case of transfer of passengers and freight at the same hub | 55 |
| 12 | Results | 56 |
| 12.1 | For one transport chain | 56 |
| 12.1.1 | Calculation of GHG emissions | 56 |
| 12.1.2 | Calculation of transport activity | 56 |
| 12.1.3 | Calculation of GHG emission intensities | 57 |
| 12.2 | For a set of transport chains | 57 |
| 12.2.1 | General | 57 |
| 12.2.2 | Calculation of GHG emissions | 57 |
| 12.2.3 | Calculation of transport activity | 57 |
| 12.2.4 | Calculation of GHG emission intensities | 58 |
| 12.3 | For a transport service | 58 |
| 12.4 | For a set of transport services | 58 |
| 12.5 | For a transport mode | 58 |
| 13 | Reporting | 58 |
| 13.1 | General | 58 |
| 13.2 | Reporting at the organizational level | 58 |
| 13.2.1 | Reporting boundaries | 58 |
| 13.2.2 | Report | 58 |
| 13.2.3 | Periodicity | 59 |
| 13.3 | Reporting at the level of transport or hub services | 59 |
| 13.3.1 | Granularity | 59 |
| 13.3.2 | Report | 59 |
| 13.4 | Supporting information | 60 |
| 13.4.1 | General | 60 |
| 13.4.2 | Description of the calculation method | 60 |
| 13.4.3 | Transparent reporting from the use of modelled data or default GHG emission intensities | 65 |
| Annex A (normative) Air transport | | 67 |
| Annex B (normative) Cable car transport | | 69 |
| Annex C (normative) Inland waterway transport | | 71 |
| Annex D (normative) Transport by pipeline | | 73 |
| Annex E (normative) Rail transport | | 75 |
| Annex F (normative) Road transport | | 78 |
| Annex G (normative) Sea transport | | 82 |
| Annex H (normative) Hubs | | 88 |
| Annex I (normative) Approach to account for refrigerant leakage GHG emissions from mobile air conditioning and temperature-controlled freight units during transportation operations | | 92 |
| Annex J (normative) Additional requirements and guidance for GHG emission factors | | 95 |
| Annex K (informative) GHG emission factors and sources | | 99 |

| | |
|--|------------|
| Annex L (informative) Additional guidance for allocation to passenger according to passenger class of travel | 104 |
| Annex M (informative) General guidance on the approach to modelling of GHG emissions of transport chains | 110 |
| Annex N (informative) Additional guidance for use of ICT equipment and data servers related to transport operations | 115 |
| Annex O (informative) Quantification of GHG emissions arising from (re)packaging processes at logistics hubs | 118 |
| Annex P (informative) Quantification of black carbon emissions from transport operations | 120 |
| Annex Q (informative) Selection of sources of default GHG emission intensities | 122 |
| Annex R (informative) Comparison of GHG emission categorization used in the GHG Protocol and this document | 124 |
| Bibliography | 127 |