



TNT CO₂ Reporting Services Methodology Description (EN16258)

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1. Declaration of the method and values used

The methodologies, calculations and systems used by TNT to disclose CO₂e emissions to customers have been established in accordance with the standard EN 16258:2012. Please consult this standard to get further information about processes not taken into account, guidelines and general principles. If you wish to make comparisons between these results and other results calculated in accordance with this standard, please take particular care to review the detailed methods used, especially allocation methods and data sources.

Key principles of the method and values used by TNT are detailed below:

Scope of calculations

The CO₂e calculation includes any transport activity needed to deliver the shipment (door to door). This includes transport directly operated by TNT and transport activities that are carried out on behalf of TNT by subcontractors or agencies. Any movements associated with the transportation of shipments are included (actual transport, empty trips). Activities for the handling of shipments in depots/hubs are not included (following specifications of the standard EN16258).

Vehicle operating system (VOS)

The method divides TNT' operational transport activities into several segments that have similar operational and performance related characteristics. The core segments are air transport, road transport and pick-up and delivery operations. A further breakdown of segments is done by country and traffic lane where applicable. This segmentation provides the basis for defining the various VOS used in the CO₂e calculation.

Allocation principles

The TNT method uses the product of distance and weight to allocate GHG emissions and energy consumption to single shipments. The resulting allocation unit is ton.km. For specific transportation services (e.g. use of dedicated vehicles) the distance is used as allocation unit. TNT believes this approach reflects reality in a more accurate way.

Transportation leg

Transportation activities carried out between two TNT locations are defined as a transportation leg. For each transportation leg, GHG emission and energy consumption values are calculated in accordance with the EN16258 standard. In case multiple vehicle or aircraft types are used on a single transportation leg, a weighted average of the applicable values is used. Several transportation legs make up the total journey of a shipment between its origin and destination.

Categories of values

A mix of value categories is used depending on data availability and transportation segment. TNT reported data is used when reliable and accurate data is captured and reported. In case this information is not available, default values are applied. Further details on the values used for the various measures are provided in the following sections. An overview of value categories is also included in the Annex of this document.

Modeled data for fuel consumption

Reported fuel consumption data is used where this data is available. For transportation activities where this data is not available, modeled fuel consumption data is used. This data is modeled based on transport parameters that are specific to TNT' operational activities (vehicle type, load capacity, fuel used, etc.). TNT uses modeled data provided by the Network for Transport and Environment (NTM). NTM is a Sweden based non-profit organization that has a long track record in establishing environmental performance data for transportation services.

Weight measure

The calculation of CO₂e emissions is based on real or actual weight. In the absence of a uniform and commonly agreed volumetric weight measure, real weight is considered the most appropriate weight measure as it is closely linked to operational activities.

Distance measure

Distances used in the method are specific to the TNT operations and represent actual distances. Distances are established based on reported data where available. In case distance data is not captured by TNT, distance data from external sources will be applied. For air activities, 95km are added to the Great Circle Distance (GCD) in alignment with the EU ETS principles.

Energy and GHG Emission factors

Factors applied by TNT to convert the fuel use into energy and GHG emissions are as specified in Annex A of the EN16258 standard.

Data update

Values that are input to the calculation are updated on a yearly basis (during quarter 1) in order to provide customers with the most accurate CO₂e information. All values are based on a full year scope (e.g. full year 2013). TNT is committed to continuously increase the accuracy of the calculation method and values used.

2. Customer disclosure

TNT discloses CO₂e emissions via standardized periodic and ad-hoc reports. The reports declare the below four results that have been calculated according the standard EN16258:

1. Well-to-wheels GHG emissions (G_w)
2. Tank-to-wheels GHG emissions (G_t)
3. Well-to-wheels energy consumption (E_w)
4. Tank-to-wheels energy consumption (E_t)

The emission and energy values are reported as absolute values. GHG emissions are reported in kilogram (kg) CO₂e and energy consumption is reported in Mega joule (MJ). Well-to-wheels GHG emissions (G_w) are

the key metric in the TNT CO₂e customer reports. This metric is the basis for all charts and tabular information provided in the reports.

Next to the above metrics, the TNT CO₂e customer reports also contain the following information:

Metric	Description
Customer name/reference	The name of the customer and the TNT customer reference (e.g. account number)
Reporting period	The reporting period is based on collection month and year. Underlying collection weeks are allocated to calendar months based upon the month that the Wednesday of the week falls into.
Country	Country in which the transportation activity gets invoiced. No filter is applied when 'global' is displayed.
Consignments	Total number of consignments/shipments. Consignments can contain several items
Weight over distance (ton.km)	Metric commonly used in transportation equal to the transportation of one ton of freight one kilometer
Weight (kg)	Total chargeable weight in kilogram (kg)
CO ₂ e (kg) per consignment	Metric specifying the kilogram (kg) CO ₂ e per consignment for the scope of the report
CO ₂ e (kg) per weight (kg)	Metric specifying the kilogram (kg) CO ₂ e per kilogram chargeable weight (kg) shipped for the scope of the report
CO ₂ e (kg) per ton.km	Metric specifying the kilogram (kg) CO ₂ e per ton.km for the scope of the report

Reporting scope

The scope of reporting covers all TNT line of business (International Express, Domestic Express and Special Services). Geographical scope per line of business:

- International Express: all countries included
- Domestic Express: BE, CH, CZ, DE, DK, ES, GR, HU, IE, IT, NL, PL, PT, RO, RU, SE, FI, TR, SL and GB
- Special Services: All international shipments. Scope of domestic shipments is same as Domestic Express

Shipments that are outside the scope as specified above are excluded from the output reports.

TNT continuously upgrades and optimizes its operational activities. It can therefore occur that energy and emission data cannot be calculated due to operational changes that are not yet capture in the calculation model. In this case the report displays 'no data'. TNT continuously updates the calculation model to minimize these occurrences.

Report frequency and availability

Reports can be provided at a monthly, quarterly and yearly basis. Reports are available by the third week after closing of the previous period. Emissions and energy data will be re-calculated for the previous three

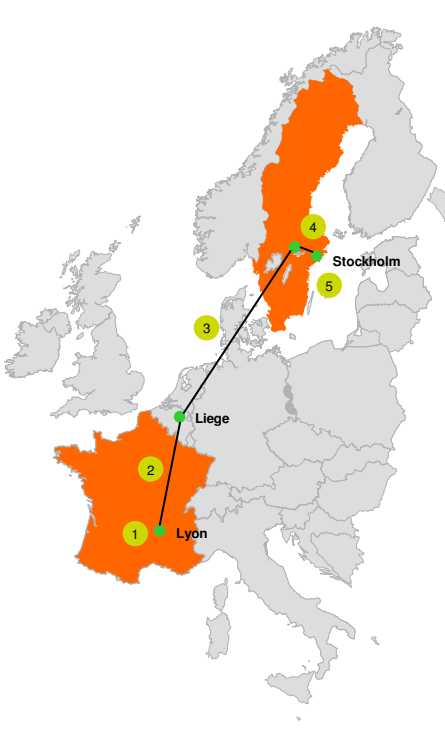
months to capture possible changes in the shipment data (e.g. credits). This might lead to minor misalignment of e.g. monthly and yearly customer reports.

3. Example calculation

The application of the EN16258 method can be illustrated using an example shipment. Steps in this calculation are:

- For each single shipment the routing is determined based on the shipment’s origin/destination and transportation service used
- The overall route is divided into the underlying transport legs
- The emission and energy data are established for each transportation leg in accordance with the standard EN16258
- By adding up the CO₂ emissions for the individual legs the total CO₂ emissions for the shipment are calculated
- The total CO₂ emissions for the customer and reporting period are the sum of the various individual shipments.

Table: Example calculation

Routing	Description
	<p>Shipment details:</p> <ul style="list-style-type: none"> ▪ Weight: 20kg ▪ Origin: Lyon (FR) ▪ Destination: Stockholm (SE) ▪ Service: International Express <p>Transportation legs:</p> <ol style="list-style-type: none"> 1. Pickup in Lyon 2. Air transport (European Air Network) 3. Air transport (European Air Network) 4. Road transport (Domestic Road Network) 5. Delivery in Stockholm <p>Results:</p> <ul style="list-style-type: none"> • WTW GHG (G_w): 67.8 kg CO₂e • TTW GHG (G_t): 55.5 kg CO₂e • WTW Energy (E_w): 918.6 MJ • TTW Energy (E_t): 776.2 MJ

4. Third party verification

TNT has received third party verification by SGS. SGS has verified the method, calculations and system to a reasonable level of assurance against the requirements of the EN16258. The verification statement can be provided upon request.

For inquiries and questions on this document and the CO₂ Services offered by TNT please send an email to: CO2Services@tnt.com

Annex: Categories of values used

The use of values depends on the vehicle operating system (VOS) as well as on geography. This results in a VOS and country specific view on the categories of values used. Below tables illustrates the overall approach taken, by focusing on core transportation segments. Geographical variations are not taken into account. More details on categories of values used can be provided on request.

Table: Illustration categories of values

Type of value	Transportation segment			
	Pickup & Delivery	Road transport	Air transport (TNT owned)	Air transport (Subcontracted)
Fuel consumption	-	-	TOSV	
Fuel consumption per km	DV ¹⁾	DV ¹⁾	-	DV ¹⁾
Distance	TOSV	TOSV	TOSV	DV ³⁾
Vehicle load	TOSV	TOSV	TOSV	DV ²⁾
Vehicle capacity	DV ¹⁾	DV ¹⁾	-	DV ¹⁾

1) Based on NTMCalc 3.0, The Network for Transport and Environment

2) Based on IATA, Financial Forecast, September 2013

3) Based on the Global Circle Distance calculator: <http://gc.kls2.com>

Legend

DV: Default value

TOFV: Transport operator fleet value

TOSV: Transport operator specific value

SMV: Specific measured value