CO2e Report for Transport Operations

BearingPoint®

Contents

1. Management Summary

Reporting Date: 15.10.2025

Company Name: ABC Transport

Leading KPI: CO2e (WTW)

Unit of Measurement: kg

Calculation Standard: GLEC 3.1 (March 2025)

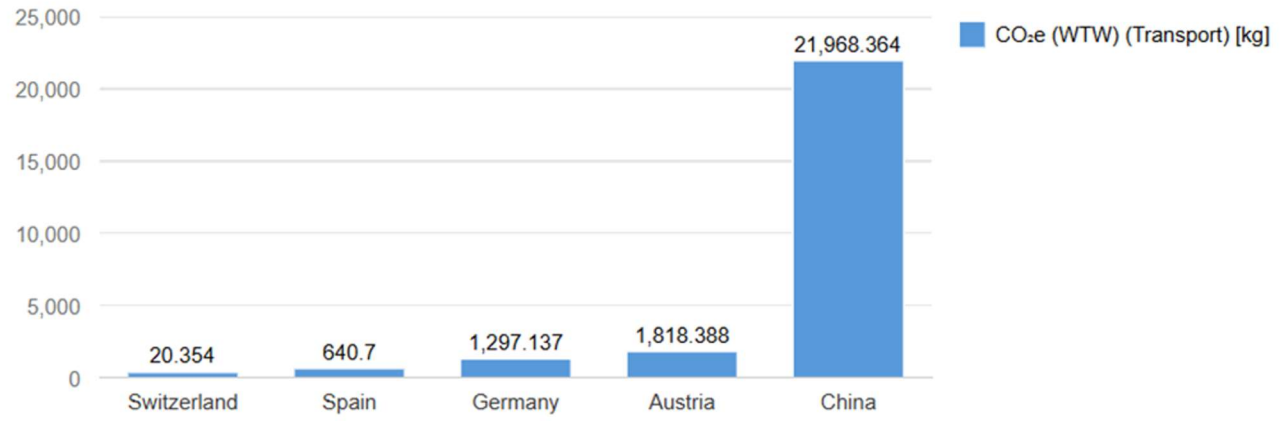
Reporting Period: 04.01.2023 – 16.02.2023

Calculation Results

Company Name	Reporting Period	Transport Mode	Total weight (kg)	Total TKM	Number of Shipments	CO2e WTW per TKM (kg)	Total CO2e WTW (kg)	Calculation Standard
ABC_TRANS_20251009 143103	04.01.2023 - 16.02.2023	Rail	7643	9661	1	0.019	178.7	GLEC_3_1
ABC_TRANS_20251009 143103	04.01.2023 - 16.02.2023	Ship	6668	184857	3	0.073	13439	GLEC_3_1
ABC_TRANS_20251009 143103	04.01.2023 - 16.02.2023	Plane	943	7973	4	0.788	6283	GLEC_3_1
ABC_TRANS_20251009 143103	04.01.2023 - 16.02.2023	Truck	41959	27644	12	0.212	5844	GLEC_3_1

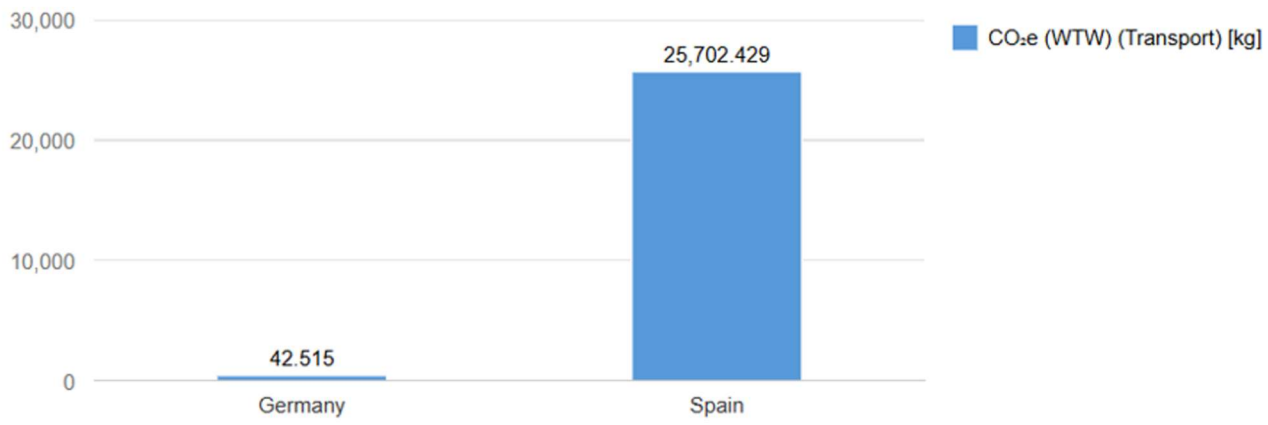
2. CO2e Analysis: Charts

CO2e (WTW) (Transport) [kg] per Source Country



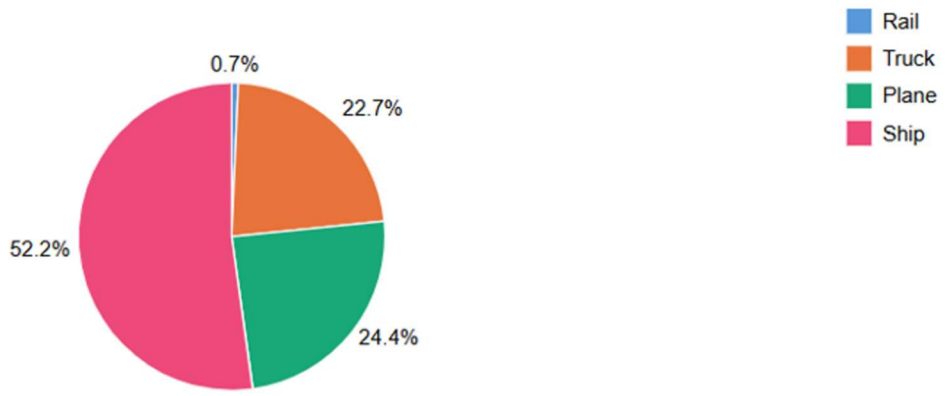
The chart shows a stark imbalance in CO2e emissions from transport across source countries. China dominates with 21,968.364 kg, which is more than 10 times the combined emissions of Austria, Germany, Spain, and Switzerland, highlighting a critical hotspot in the supply chain. This disparity underscores the urgent need to prioritize decarbonization strategies for China-sourced transport to achieve meaningful global impact.

CO2e (WTW) (Transport) [kg] per Target Country



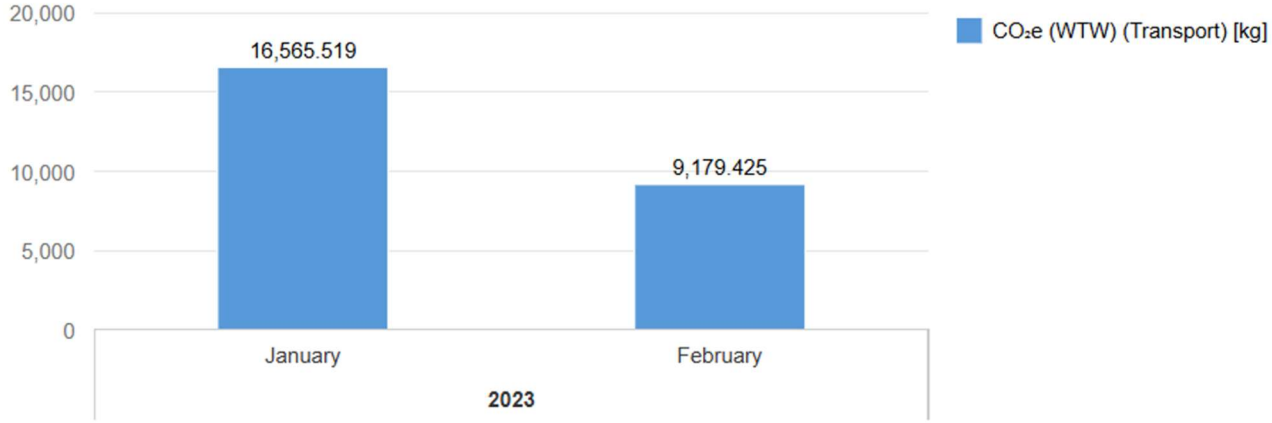
The chart reveals an overwhelming concentration of CO2e emissions in Spain, which accounts for 25,702.429 kg, compared to a negligible 42.515 kg in Germany. This stark contrast indicates that Spain is the primary driver of transport-related emissions among target countries, signaling a critical area for intervention. Immediate optimization of logistics and sourcing strategies for Spain-bound shipments could deliver the most significant sustainability impact.

CO2e (WTW) (Transport) [kg] per Transport Mode



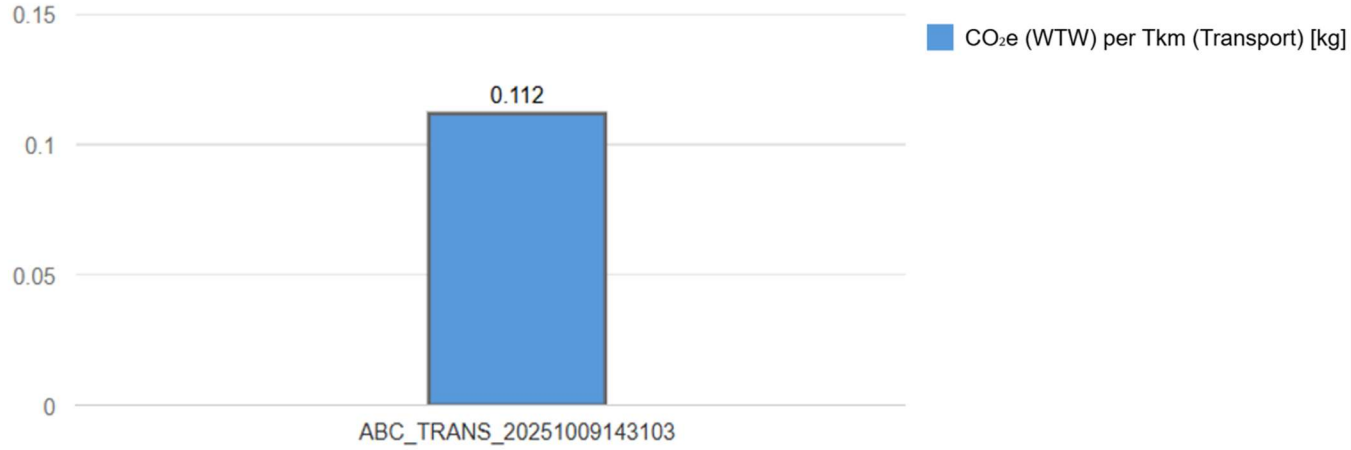
The chart highlights that shipping dominates transport-related CO2e emissions, accounting for 52.2%, followed by air transport at 24.4% and trucking at 22.7%, while rail contributes a negligible 0.7%. This distribution underscores the heavy environmental burden of maritime and air freight, which together make up over three-quarters of total emissions. To achieve significant reductions, strategies should focus on optimizing sea and air logistics, shifting more volume to rail where feasible, and accelerating the adoption of low-carbon technologies in high-impact modes.

CO2e (WTW) (Transport) [kg] per Month



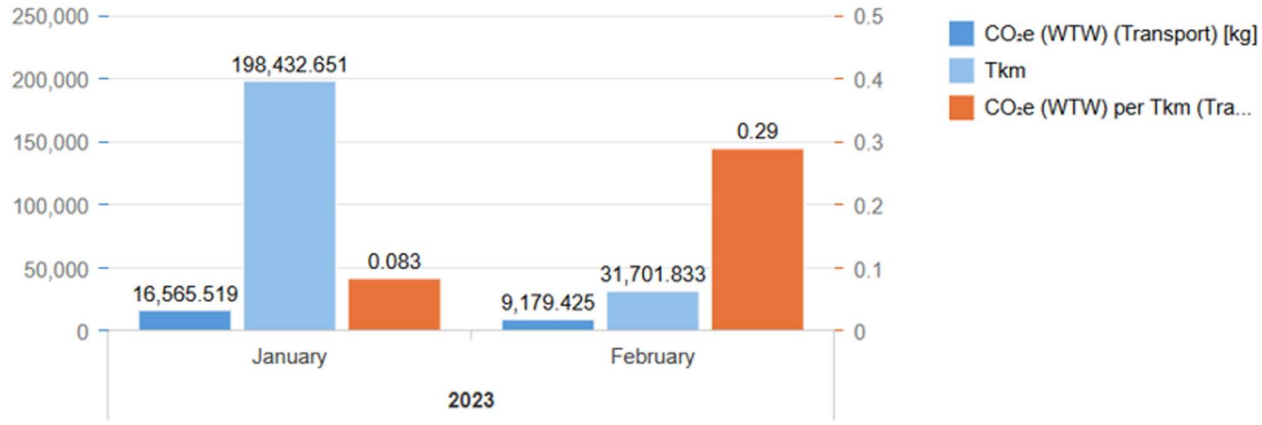
The chart shows a significant drop in transport-related CO2e emissions from 16,565.519 kg in January to 9,179.425 kg in February, marking a reduction of nearly 45% in just one month. This sharp decline suggests that recent operational or logistical changes have had a substantial positive impact on emissions.

CO2e (WTW) (Transport) [kg] per Tkm



The chart shows a CO2e intensity of 0.112 kg per ton-kilometer for the transport activity labeled ABC_TRANS_20251009143103. This metric indicates the carbon footprint per unit of freight moved, providing a critical benchmark for evaluating transport efficiency. Lowering this value through route optimization, modal shifts, or cleaner energy sources could significantly enhance sustainability performance.

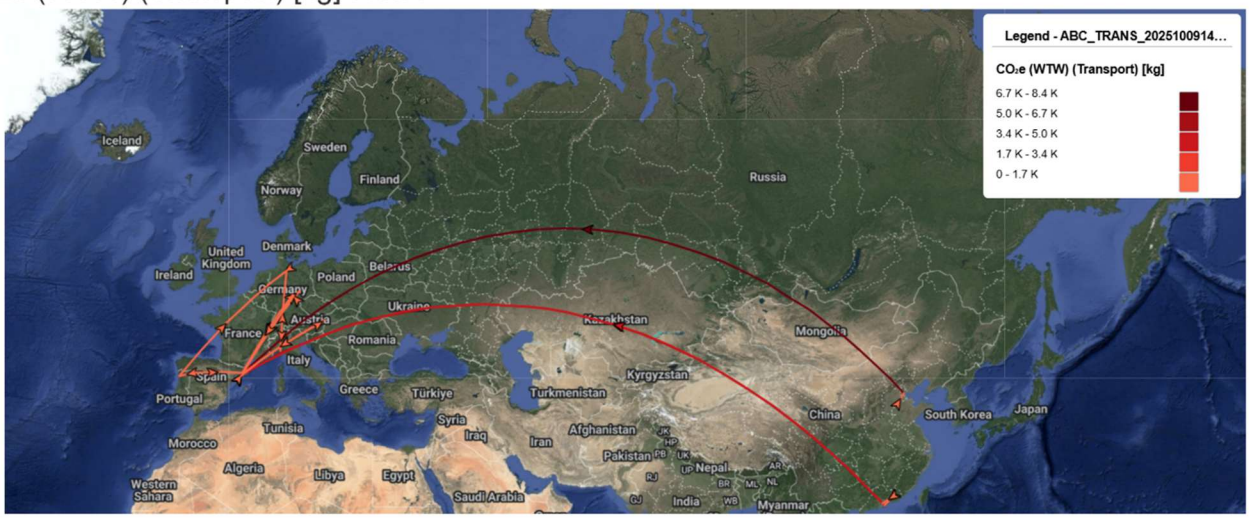
CO2e (WTW) (Transport) [kg], Tkm and CO2e (WTW) (Transport) [kg] per TKM per Year and Month



This combined chart provides a deeper view of emissions efficiency over time. In January, total CO2e emissions were 16,565.519 kg with 198,432.651 ton-kilometers (Tkm) moved, resulting in an intensity of 0.083 kg/Tkm. By February, emissions dropped to 9,179.425 kg, but because freight volume fell even more sharply to 31,701.833 Tkm, the intensity spiked to 0.29 kg/Tkm, signaling that while absolute emissions improved, transport efficiency worsened significantly.

3. CO2e Analysis: Maps

CO2e (WTW) (Transport) [kg] Flows



The map visualization highlights the geographical distribution of CO2e emissions from transport flows, with the heaviest emission routes concentrated between China and Europe, particularly toward Spain. The color gradient indicates that the most carbon-intensive flows fall in the 6.7K–8.4K kg range, underscoring the significant impact of long-haul intercontinental shipments.

CO2e (WTW) (Transport) [kg] Heatmap

The map visualization highlights the geographical distribution of CO2e emissions from transport flows, with the heaviest emission routes concentrated between China and Europe, particularly toward Spain. The color gradient indicates that the most carbon-intensive flows fall in the 6.7K–8.4K kg range, underscoring the significant impact of long-haul intercontinental shipments.

4. Vehicles and emissions factor applied

System Setup/ Client specific configuration

Vehicle Classes and Vehicle Classes Consumption

Vehicle Class	Display Name	TKM per Parcel	Maximum Load Weight	Maximum Load Volume	Maximum Load Factor	Energy Type	Energy Type Name	CO2e per Tkm	Consumption	Emission Factor
GLEC3_1_CCWG_AVERAGE_DRY	CCWG Average (Unknown trade lane, Dry)	115615	1	1	100	131	HFO (HSHFO)	72.7 gCO2e per TKM	0 KG per 100 km	0 kgCO2e per KG
GLEC3_1_CCWG_AVERAGE_DRY	CCWG Average (Unknown trade lane, Dry)	68959	1	1	100	131	HFO (HSHFO)	72.7 gCO2e per TKM	0 KG per 100 km	0 kgCO2e per KG
GLEC3_1_ARTIC_TRUCK1_40T_ASIA_AFRICA_DIESEL	Artic Truck (up to 40t, Asia and Africa, Average / Mixed Goods, Diesel)	14068	1	1	100	2	Diesel fuel	123.2 gCO2e per TKM	0 LT per 100 km	3.24 kgCO2e per LT
GLEC3_1_TRAIN_EU_AVERAGE	Train EU Average (Traction type: Unknown)	9661	1	1	100	2	Diesel fuel	18.5 gCO2e per TKM	0 LT per 100 km	3.24 kgCO2e per LT
GLEC3_1_PLANE_UNKNOWN_LONG_HAUL	Plane, Unknown, Long Haul (> 1500km)	7705	1	1	100	11	Jet fuel (Jet A / A-1)	788 gCO2e per TKM	0 KG per 100 km	3.88 kgCO2e per KG
GLEC3_1_ARTIC_TRUCK1_40T_ASIA_AFRICA_DIESEL	Artic Truck (up to 40t, Asia and Africa, Average / Mixed Goods, Diesel)	5154	1	1	100	2	Diesel fuel	123.2 gCO2e per TKM	0 LT per 100 km	3.24 kgCO2e per LT
GLEC3_1_ARTIC_TRUCK1_40T_ASIA_AFRICA_DIESEL	Artic Truck (up to 40t, Asia and Africa, Average / Mixed Goods, Diesel)	5020	1	1	100	2	Diesel fuel	123.2 gCO2e per TKM	0 LT per 100 km	3.24 kgCO2e per LT
GLEC3_1_VAN_EUROPE_SOUTH_AMERICA	Van (<3.5t, Europe and South America)	1502	1	1	100	2	Diesel fuel	840 gCO2e per TKM	0 LT per 100 km	3.24 kgCO2e per LT
GLEC3_1_VAN_EUROPE_SOUTH_AMERICA	Van (<3.5t, Europe and South America)	1003	1	1	100	2	Diesel fuel	840 gCO2e per TKM	0 LT per 100 km	3.24 kgCO2e per LT
GLEC3_1_VAN_EUROPE_SOUTH_AMERICA	Van (<3.5t, Europe and South America)	716	1	1	100	2	Diesel fuel	840 gCO2e per TKM	0 LT per 100 km	3.24 kgCO2e per LT

5. Methodology and definitions

Transparent public reporting of supply chain emissions, including logistics, is becoming a core element of corporate best practice. This report aligns with the guidelines set by the Global Logistics Emissions Council (GLEC) Framework, released by the Smart Freight Centre. It acknowledges the GHG-Protocol, CDP Reporting, Global Green Freight Action Plan and supports the implementation of ISO 14083.

This report provides a comprehensive overview of current sustainability progress. Results are presented in terms of total emissions and emission intensity.

Calculations are concluded in the unit of CO2-equivalent (CO2e), which represent the impact of the entirety of Greenhouse Gases (GHGs) that are required to be considered following the GHG Protocol. The resulting CO2e value is given in Well-to-Wheel (WTW). WTW analysis refers to specific lifecycle analysis applied to transportation fuels and their use in vehicles. The WTW stage includes resource extraction, fuel production, delivery of the fuel to vehicle, and end use of fuel in vehicle operations.

TKM: EF: Surcharges: Utilization:

$$\underbrace{\frac{Weight[kg] * Distance[km]}{1000}}_{\text{TKM:}} * \underbrace{\frac{CO2eWTW[kg]}{[tkm]}}_{\text{EF:}} * \underbrace{Empty\ Runs[\%] * Temp\ Range\ Surcharge[\%]}_{\text{Surcharges:}} * \underbrace{\frac{1}{Avg.Utilization[\%]}}_{\text{Utilization:}} = CO2eWTW[kg]$$

Data Quality Report

Overview

Request Id	Request Name	Calculation Standard	Scenario	Business Unit	Shipments Overview
57344	ABC_TRANS_20251009143103	GLEC_3_1	ABC_TRANS_20251009143103	DEFAULT	Number of Shipments: 12, Shipment errors: 0, Shipment errors (%): 0

Glossary of Terms

The following table provides an overview of key terms used throughout this report

Term	Description
GLEC	Global Logistics Emissions Council is a recognized global standard for calculating GHG emissions from transport chains (including logistics and freight).
CO2e (WTW) (kg)	Includes all greenhouse gas emissions (such as methane and nitrous oxide) converted to their CO2 equivalent in kilogram associated with the production, transportation, and storage of a fuel or energy source until it reaches the point of use including emissions from combustion
Tkm	Tonne-kilometre is a unit of measure of freight transport which represents the transport of one tonne of goods by a given transport mode over one kilometre
Distance (km)	Great Circle Distance (GCD): measures shortest path between 2 points on the surface of the earth. Shortest Feasible Distance (SFD): measures distances taking into consideration various constraints that may affect the actual route taken, such as terrain, traffic patterns, and available transportation infrastructure.
Parcel	The most granular identifier for uploaded data. For each uploaded record, this number must be unique.
Shipment	The unique shipment number of a shipment that consists of individual parcels.A shipment number within this report corresponds to the route number in the uploaded file.

Parameter	Unit of Measure	Remark
Vehicle Class		Technical key of the vehicle used for delivery
Maximum Load Weight	kg	Maximum weight that can be transported by a specific vehicle
Maximum Load Volume	m3	Maximum volume that can be transported by a specific vehicle
Maximum Load Factor	%	Percentage of the maximum load weight that is transported
Energy Type		Energy type used
Consumption		Fuel consumption of the specific vehicle
CO2e per Tkm	gr / Tkm	CO2e emissions in gr for transporting 1t cargo for 1km
Emission Factor (CO2e)	kg CO2e / unit	CO2e emissions in kg per unit of measure of fuel used