

Methodology Validation Opinion

The methodology developed in:
Transportation Emission Measurement Tool, version 1.3.

Prepared by:

***TCI-IIMB Supply Chain Sustainability Lab,
Indian Institute of Management, Bangalore***

has been validated in accordance with ISO 14064-3:2019 as
meeting the principles and rules specified in

ISO 14083:2023

*For the calculation methodology of carbon emissions equivalent (CO₂e) generated by freight
transportation across the following modes: road, inland waterway, air, sea and rail.*

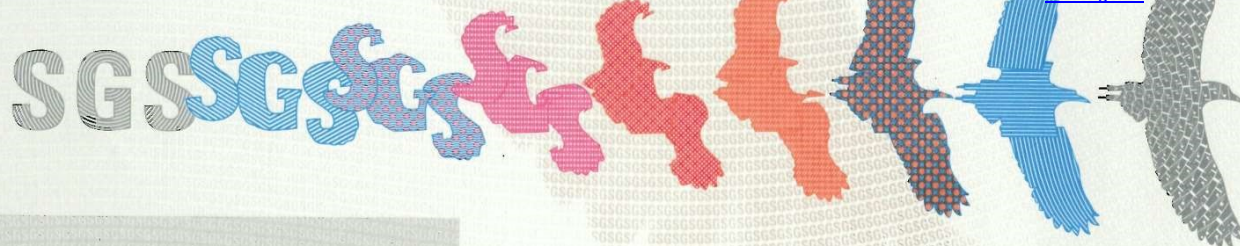
Approved by

M^a Lourdes Martín Mangas
Technical Director of Sustainability and Climate Change

Date: 1st October 2024

SGS Tecnos S.A.U.
C/Trespaderne 29, Edificio Barajas I, 2^a Planta, 28042 – Madrid (España)

www.sgs.es



Methodology Validation Opinion

TCI-IIMB Supply Chain Sustainability Lab, Indian Institute of Management, Bangalore, through the Transportation Emission Measurement Tool, version 1.3, presents the methodology applied to calculate emissions generated in the global, holistic transport chains, using Transport Chain Elements (TCEs). TCI-IIMB Supply Chain Sustainability Lab, Indian Institute of Management, Bangalore calculates five TCEs: road, air, sea, rail and inland waterways transport.

SGS has planned and performed the current work to obtain the information, explanations and evidence considered necessary to validate the methodology used.

Scope

The methods used to calculate emissions from transportation are:

- Fuel-based method: This method involves determining the amount of fuel consumed during the transportation journey and multiplying with the appropriate emission factor for that fuel applicable for mobile combustion.
- Distance-based method: This method involves determining the mass, distance, and mode of each shipment, then applying the appropriate mass-distance emission factor for the mode used, tonne-km is the most used mass-distance. Here, the transport emissions factor depends upon several factors, such as the type of mode, weight of the shipment or load, distance travelled, fuel efficiency, and fuel type.

Transportation emission factors for all modes of transportation have been validated (sources of information used and their calculation methodologies).

Level of Materiality

The materiality required of the validation was considered by SGS to be below 5%.

Opinion

Based on the process and procedures conducted, SGS concludes that the presented GHG statement:

- Is materially correct and is a fair representation of GHG data and information, and
- Has been prepared in accordance with the requirements of ISO 14083:2023, in relation to its quantification, control and notification.

This opinion shall be interpreted with Transportation Emission Measurement Tool, version 1.3., along with the documents "India ISO14083 application white paper ver 1.3 23rd Sep 2024.docx" and "India ISO14083 application calculation sheet ver 1.3 23 Sep 2024.xlsx" as a whole.

Note: This Statement is issued, on behalf of Client, by SGS Tecnos S.A.U. ("SGS") under its General Conditions included in http://www.sgs.com/terms_and_conditions.htm. A full copy of this statement and the supporting GHG Assertion may be consulted at TCI-IIMB Supply Chain Sustainability Lab, Indian Institute of Management, Bangalore. This Statement does not relieve Client from compliance with any bylaws, federal, national or regional acts and regulations or with any guidelines issued pursuant to such regulations. Stipulations to the contrary are not binding on SGS and SGS shall have no responsibility vis-à-vis parties other than its Client.

