Diageo Scope 3 Logistics CO_2e emissions Report

Introduction

Diageo is committed to understanding and reducing carbon emissions along the total value chain, including Scope 3 indirect emissions. A key part of Diageo's Scope 3 profile is emissions from the transportation and distribution of finished goods by third parties. We continue to refine and improve the accuracy and completeness of data captured for this area. This has resulted in a comprehensive determination of the extent of greenhouse gas emissions associated with the transport and distribution of finished goods, which has been subject to independent limited assurance by PricewaterhouseCoopers LLP ("PwC" LLP). This document presents the data and methodologies associated with Diageo's scope 3 logistics CO_2e emissions.

Performance data for the year ended 30 June 2016, 2017 and 2018

Dataset	Region	2016 CO_2e Emissions (tonnes)	2017 CO_2e Emissions, (tonnes)	2018 CO_2e Emissions, (tonnes)
Road-and-rail	North America	124,138	86,828	92,865
	Europe	67,402	66,515	63,642
	Asia Pacific	11,016	11,664	16,849
	Latin America	17,644	15,410	12,263
	Africa	44,300	45,105	42,530
Ocean	Global	38,887	43,550	41,998
Total*		**303,387**	269,072	270,147$^{\Delta}$

$^{\Delta}$ Within PwC LLP's independent limited assurance scope. For PwC LLP's limited assurance report, please click https://www.diageo.com/en/in-society/our-role-in-society/our-reporting/

Reporting guidelines

The methodology used for the reporting of Diageo's scope 3 logistics carbon emissions is based on the WRI Greenhouse Gas Protocol *Corporate Value Chain (Scope 3) Accounting and Reporting Standard* ('the Protocol') and relates specifically to Category 4 of the Protocol (emissions from upstream transportation and distribution). The scope of our reporting and detailed methodology is presented below.

Data being reported	In-Scope	Out-of-Scope
CO_2e emissions from transport and distribution of finished goods and the return of empty reusable packaging containers, i.e. kegs and returnable glass bottles	Distribution of finished goods owned by operationally controlled Diageo sites from point of production to point of sale to first paying customer. Transportation of empty reusable packaging containers from point of collection to operationally controlled Diageo site. Items in transit at the year-end are included within the scope of reporting.	All other elements of WRI Scope 3 Category 4, and specifically: • Transportation and distribution of finished goods by air freight; • Transportation and distribution of products purchased by Diageo between Tier 1 suppliers and our own operations; • Transportation and distribution of products (i.e., 'unfinished goods') between Diageo facilities and/or between third party producers and Diageo facilities; • Transportation and distribution of Diageo finished goods where ownership of the goods has transferred to the customer; • Deliveries from joint ventures and associates; and • Logistics and distribution carbon emissions data, excludes USL (India).

The methodology utilised by Diageo to aggregate and calculate carbon emissions of finished goods from Diageo's controlled logistics to the first paying customer, reflects three distinct modes of transportation and geographic regions:

1. Emissions from ocean freight:
2. Emissions from road & rail transport in North America
3. Emissions from road & rail transport in Rest-of-World

1. Emissions from Ocean Freight:

Emissions from ocean freight is calculated once a year using the following methodology:

1) Diageo controlled freight is captured through booking data maintained in SAP or local Enterprise Resource Planning ("ERP") systems. Data on the number and size of actual deliveries is extracted from these systems for the manufacturing sites in the group.
2) The size of deliveries is converted to twenty-foot equivalent ("TEU") kilometres travelled using Clean Cargo Working Group ("CCWG")[1] guidance. TEU is a standardised unit of measure for container capacity. Where less than container load is to be delivered, this is excluded from the ocean freight calculation and included instead within the 'Rest-of-World Road and Rail' modelling as though it was transported by road.
3) Sea-Rates and/or Marine Traffic, global container tracking tools, are used to provide information on ocean freight routes from which distance travelled for the delivery can be calculated (TEU kilometre).
4) CO_2e emissions are calculated by applying emission factors developed by the Clean Cargo Working Group ("CCWG")[2] in grams CO_2e per TEU kilometre. Emission factors are selected based on container type (refrigerated or non-refrigerated) and size, and the shipping lane used; for intra-Asia lanes, an average factor is applied, as intra-Asia lanes are a very modest contributor to the overall.
5) To determine total CO_2e emissions per year, the appropriate emission factor is multiplied by TEU kilometre travelled. This is then multiplied by number of TEU containers shipped over that lane during the course of one year.

2. Emissions from Road & Rail Transport in North America

Emissions from road & rail in North America are calculated once a year using the following methodology:

1) Diageo collects data from third-party logistics providers on road & rail deliveries made in North America including carriers used, distance travelled, weight (excluding pallet weights) and mode of transportation.
2) This carrier activity data is entered into the EPA SmartWay tool, which contains carrier-specific EPA emission factors based on logistics data submitted to the EPA by SmartWay affiliated carriers and SmartWay assigned modal types. Performance data for truck, multi-modal and logistics partners correspond to data submittals for the 2017 calendar year. Conservative emission factors are applied to non-SmartWay affiliated carriers based on the lowest performing partners.
3) The SmartWay tool calculates mass CO_2e emissions (US tons) per carrier by multiplying the total ton-miles (one ton moving one mile) per carrier by the carrier-specific emission factors in CO_2e grams per ton-mile. CO_2e emissions in US tons are then converted to metric tonnes for reporting purposes.

3. Emissions from Road & Rail Transport in Rest-of-World

Emissions from road & rail outside North America are two-fold.

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[1] Clean Cargo Working Group Carbon Emissions Accounting Methodology,
The Clean Cargo Working Group Standard Methodology for Credible and Comparable CO_2 Emissions Calculations and Benchmarking in the Ocean Container Shipping Sector, June 2015.

[2] CCWG 2017 Global Maritime Trade Lanes Emissions Factors:
https://www.bsr.org/reports/BSR_Clean_Cargo_Working_Group_Emissions_Factors_2018.pdf

Primary emissions from transportation between (i) point of production and intermediary delivery centre – stock transfers, or (ii) point of production and port, or port and paying customer (supplementary to the ocean freight emissions).

(i) Stock transfers reflect the movement of finished goods through the network. Finished goods volumes moved is assumed to equal the volume of deliveries from intermediary deliver centre to paying customers. The frequency of stock transfer and vehicle size used is calculated by matching the frequency of deliveries with number of dispatches made from the intermediary delivery centre to the first paying customer. Assumptions based on management's knowledge of the network are applied to ensure accurate modelling of the stock transfers. BEIS[3] emission factors by vehicle size are applied to distances travelled in order to calculate emissions.

(ii) Transportation between point of production to port, or port and intermediary warehouse is calculated based on actual number of containers transported (identified as above for the ocean freight) and the actual distance travelled between these locations.

Secondary emissions from transportation between point of production or Diageo owned distribution centre to point of sale to first paying customer is modelled as per the step-by-step methodology below:

1) Delivery line level data is collated based on the number and size of deliveries made during the year, captured from SAP or local Enterprise Resource Planning ("ERP") system for each country in which Diageo has an in-market presence.
2) All locations are geocoded, using a supply chain modelling application (Llamasoft). In order to determine distance travelled by shipments, it is necessary to geocode (latitude and longitude) of each shipment start point and destination as extracted from the SAP/ERP system.
3) Delivery profile data and vehicles type are collated. Irrespective of where in the world the delivery is taking place, it is assumed that vehicle type is one of four vehicle options. The selection of the vehicle type is based upon the size of the delivery (i.e. number of cases).
4) Llamasoft model determines the distances travelled. The distance travelled is calculated as the straight line distance between the source and destination points, to which a '17%' circularity factor is applied. Where the granularity of the address is not known and this results in a travelled distance of zero (e.g. between two locations in one town/city), an assumption is made that the distance travelled for the delivery is 5km.
5) The distance travelled is converted to CO_2e emissions by specific vehicle size to emissions data using BEIS[3] conversion factors for diesel vehicles.

[3] BEIS carbon conversion factors 2018; https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2018