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Smart Freight Centre

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DICTIONARY OF SUSTAINABILITY TERMS

Sustainability made Simple

Welcome to Sustainability made Simple – your compass through the maze of sustainability terminology. This go-to resource demystifies key terms around environmental impact, social responsibility, and economic considerations within this dynamic industry. From Carbon Border Tax to Well-to-wheel, our experts explain what they mean, in simple, plain English.

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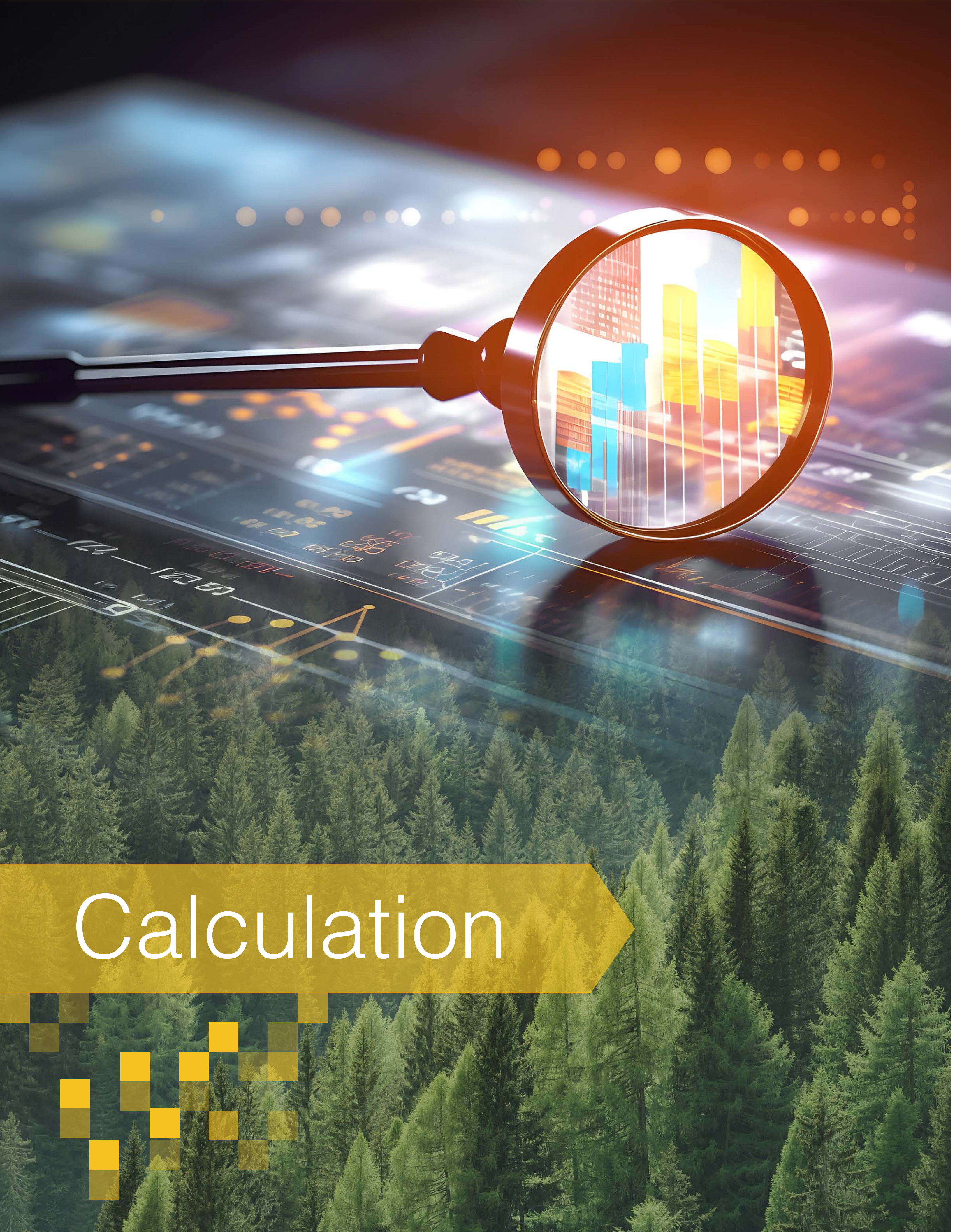

Black carbon

Black carbon is the term used for the sooty black material emitted from burning fossil fuels. Black carbon is a short-lived climate pollutant, but has a potent impact on global warming. It is also responsible for poor air quality, which has become the largest environmental risk to human health.

Carbon dioxide
CO_2

Main GHG emission source, but not the only one.

Carbon dioxide equivalent
CO_2e

A CO_2 equivalent (CO_2e) is a metric measure used to compare the emissions from various GHGs on the basis of their global warming potential (GWP). It does this by converting the amount of other gases to the equivalent amount of carbon dioxide, with the same GWP. This way, a carbon footprint consisting of lots of different greenhouse gases can be expressed as a single number.

Carbon Footprint

Indicator to compare the total amount of GHG emissions associated with a country, a company, an individual or a product. Carbon footprints are usually reported in tons of emissions (CO_2 equivalent) per unit of comparison; such as per year, per product, per transport mode etc.

Cradle-to-cradle

A cradle-to-cradle emissions assessment considers the impact of a product's life-cycle from the moment the natural resources are extracted and processed, through subsequent stages of manufacturing, transportation, product use, and recycling/upcycling.

Cradle-to-gate
A cradle-to-gate emissions assessment considers the environmental impacts of a product lifecycle from the moment natural resources are extracted from the ground and processed through subsequent stage of manufacturing.

Cradle-to-grave
A cradle-to-grave emissions assessment considers the impact of a product's life-cycle from the moment the natural resources are extracted and processed, through subsequent stages of manufacturing, transportation, product use and disposal.

Default calculation
Industry default averages for GHG emission calculation. Bottom up calculations can be granular (considering weight, route, geography, countries, and fuel) but emissions would still be based on the average, calculated transport by transport. As per GLEC framework the emission intensity can range between 65g/ton-km and 191 g/ton-km. In contrast, top-down calculations use a fixed average (128g/ton-km) for each road transport, disregarding variables like carrier and geography. This creates results where all transports on the same lane have exactly the same emissions, independent from other variables, most notably the carrier.

Empty running
A trip done by a transportation vehicle without any cargo loaded. Empty running is one of the main drivers of emissions in transportation and therefore the goal is to reduce it.

Greenhouse gas emissions
GHG
Greenhouse gas emissions (GHG) blanket the Earth, trapping the sun's heat. This leads to global warming and climate change. GHG emissions are made up of around 76% carbon dioxide, 16% methane and 6% nitrous oxide.

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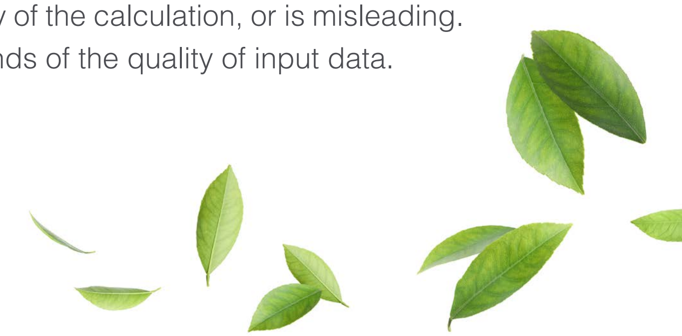
Global Logistics Emissions Council Framework
GLEC FW
Members of the Global Logistics Emissions Council (GLEC) developed the GLEC Framework to offer multinationals and their suppliers a harmonised, efficient and transparent way to calculate and report logistics emissions.

ISO 14083:2023
ISO 14083
ISO standard to establish a common methodology for the quantification and reporting of greenhouse gas (GHG) emissions arising from the operation of transport chains of passengers and freight. Published in March 2023 and based on GLEC Framework version 2.0

Life Cycle Assessment
LCA
LCA (also known as life cycle analysis) is a methodology for assessing environmental impacts associated with all stages of the life cycle of a product, process or service. They can be done at Cradle to Gate, Cradle to Grave, or Cradle to Cradle scopes.

Load factor
The portion of the cargo capacity of a transportation vehicle that is actually being used. According to a study by the World Shipping Council, a 10% increase in load factor can reduce CO_2 emissions by 6.5%. Therefore, the goal is to increase the load factor.

Modelled calculation
Modelling is where default values are combined with actuals, or more precise default values. There are very different approaches to modelling and it´s often not clear for a third party whether modelling adds to the quality of the calculation, or is misleading. Ultimately, everything depends of the quality of input data.



Scope 1 emissions

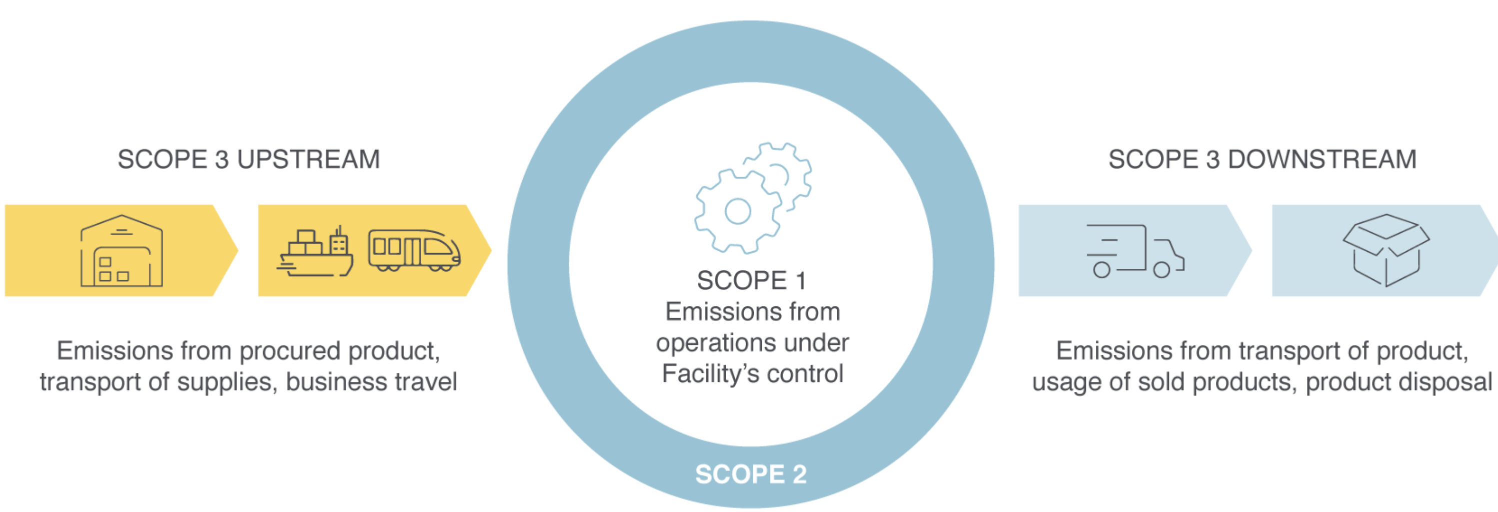
Direct emissions produced by a company. These can caused by running machinery to make products, driving vehicles, or just heating buildings and powering computers. Can be directly influenced and are mostly measured using sensors.

Scope 2 emissions

Indirect emissions associated with energy purchased from a utility provider. If the supplier provides 100% renewable (green) energy then the impact will be zero. In many countries the supplier is requested to share its energy mix.

Scope 3 emissions

Indirect emissions from up and down the value chain. They are under the control of suppliers or customers, and affected by decisions made outside the company and outside the direct control of a company (at least in the short term). Difficult to measure. It may be noted that scope 3 emissions make up an average of 80% of the total CO2e footprint of a company.



Emissions from procured product, transport of supplies, business travel

Emissions from usage of electricity and/or steam purchased from 3rd parties

Emissions from transport of product, usage of sold products, product disposal

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Primary data calculation

There are a variety of definitions of primary data. For calculating emissions we define primary data as data that: A) Comes directly from a sensor (telematics in particular) and B) Allows direct emissions calculation, instead of guessing the emissions, based on a number of parameters such as product weight, likely transport mode and vehicle type, or estimated driving distance. For a simple use-case such as FTL [full truckload] primary data means: Energy (fuel) consumption from loading to un-loading including empty miles, plus knowledge about energy (fuel) type and origin. In case of LTL [less-than-truckload] parcel information on the other consignment is needed to split the total emissions accordingly.

Tank to Wheel
TTW

TTW measures the emissions during vehicle operation, and excludes the emissions which occur during the production of the energy (fuel) and of the vehicle itself. For example the TTW emissions of a BEV (battery electric vehicle) are zero by definition, while they are larger than zero WTW.

Well to Tank
WTT

WTT emissions consist of all processes between the source of the energy (the well) through the energy extraction, processing, storage and delivery phases, up until the point of use (the tank). WTT values can vary by energy source, region, method of production and the transportation required to move the fuel to market.

Well to Wheel
WTW

This is a method to evaluate all emissions produced as a result of fuel production, processing, distribution, and operation. WTW calculation adds WTT (Well to Tank) to TTW (Tank to Wheel). See above for more information. The emissions caused during the vehicle production are not included. Therefore, two BEVs (battery electric vehicles) may have very different WTW emissions, if one uses electricity supplied by 100% hydro power and the other by a coal-fired power-plant.

Institutions

Carbon Disclosure Project
CDP

CDP is a not-for-profit charity that runs the global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts.

Clean Cargo

Partnership led by Smart Freight Centre, focused on tracking and reducing greenhouse gas emissions from ocean container shipping.

Global Logistics Emissions Council
GLEC

Partnership led by Smart Freight Centre, where companies and NGO's are dedicated to drive widespread, transparent and consistent calculation and reporting of logistics GHG emissions.

Greenhouse Gas Protocol
GHG Protocol

The GHG protocol serves as a basis for climate change related standards. It has been developed by the WCSBD (World Council for Sustainable Business Development) together with the WRI (World Resources Institute).

Science Based Targets initiative
SBTi

The SBT is an organisation with UN involvement. It defines and promotes best practice in science-based target setting and offers a range of target-setting resources and guidance. It has around 5,000 corporate members, who have agreed to adhere to a decarbonisation strategy to limit the temperature increase (usually 1.5°C or 2°C). Members are also requested to provide a detailed and plausible action programme in order to reach these targets.

Smart Freight Centre
SFC

Smart Freight Centre (SFC) is an international non-profit organisation focused on reducing the impact of emissions from global freight transportation. It has the collaboration of over 150 multinational member and partner organisations who are working to quantify impacts, identify solutions and advocate logistics decarbonisation strategies.
SFC runs several programmes, including Global Logistics Emissions Council (GLEC), Clean Cargo, Sustainable Freight Buyers Alliance (SFBA), and Clean Air Transport (CAT).

Sustainable Freight Buyers Alliance
SFBA

Partnership led by Smart Freight Centre, which unites freight buyers and freight decarbonisation initiatives to shift to zero emissions freight transport. The core focus of SFBA is to collaborate on projects, influence policy, foster collaborative partnerships and use the power of procurement.

Task Force on Climate-related Financial Disclosures
TCFD

The Financial Stability Board (FSB) created the TCFD to develop recommendations on the types of information that companies should disclose to support investors, lenders and insurance underwriters in appropriately assessing and pricing a specific set of risks related to climate change. Following the release of the 2023 Status Report the TCFD has been disbanded.

Regulations

Carbon Border Adjustment Mechanism
CBAM

Compensation for emission taxation for any goods imported into the EU.

Carbon Border Tax
CBT

Also known as CBAM (Carbon Border Adjustment Mechanism).

Carbon neutral

A carbon neutral company claims to have compensated all its carbon emissions. Compensation can include offsetting, insetting or other measures. Non-carbon GHG emissions are not considered. In air freight this would mean that more than 50% of the GHG effect remains untouched.

Climate neutral

A climate neutral company claims to have compensated all GHG emissions, not only its CO_2 emissions. Measures of compensation include offsetting and insetting.

Corporate Sustainability Reporting Directive
CSRD

Extended sustainability reporting as part of compulsory financial reporting within the EU. Issued together with FY balance sheet and PNL. Includes scope-3 emissions, except where marginal or irrelevant. Rolled out in waves starting with FY 2024 for entities subject to non-financial reporting, closing FY 2026 for all listed companies. Will impact > 55,000 European companies.

CountEmissions EU

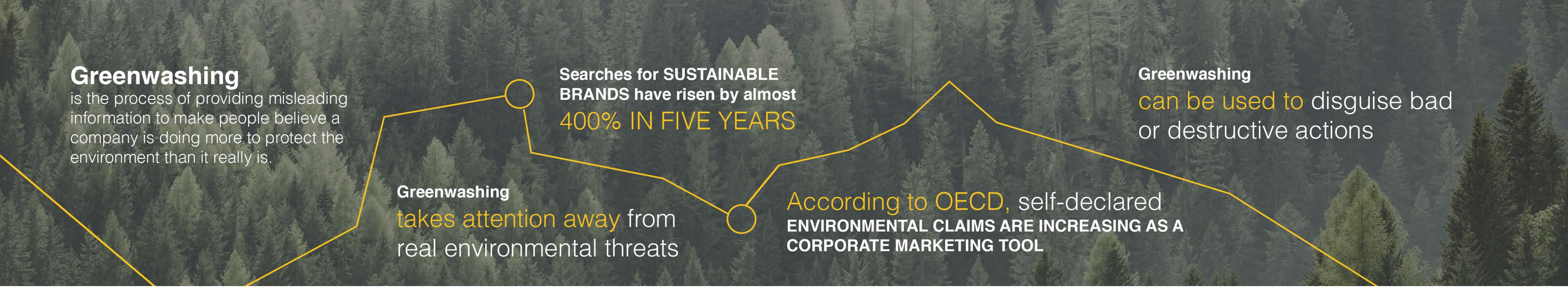
This initiative sets out a common framework to calculate and report transport-related GHGs. It uses the ISO 14083 standard as a basis and prioritises calculations based on primary data. That is data obtained during the carrying out of a transport operation. The use of this framework won't initially be compulsory.

Emissions Trading System
ETS

The EU Emissions Trading System (EU ETS) works on the 'cap and trade' principle. A cap is a limit set on the total amount of GHGs that can be emitted by energy-intensive industries and the power generation sector. The cap is expressed in emission allowances, where one allowance gives the right to emit one tonne of CO_2e (carbon dioxide equivalent). Within the cap, companies primarily buy allowances on the EU carbon market, but they also receive some allowances for free. Companies can also trade allowances with each other as needed. Since its introduction in 2005, the EU's emissions have decreased by 41%.

Emissions Trading System 2
ETS II

Separate emission trading system introduced for sectors which were not originally covered by the ETS, including road transport. ETS 2 will become operational from 2027 earliest, while high energy prices may even postpone its start until 2028. A cap of €45/ton CO_2e has been agreed until 2030 at least. Experts expect ETS 2 prices in excess of €100 and up to €300/ton as per mid 2030's. Intermediaries, such as companies selling fuel and heating (not shippers or carriers), will also be required to comply.



Environmental, Social and Governance
ESG

ESG is a set of criteria designed to guide conscious investors in their decision-making process.

Fit For 55

In order to reach climate neutrality by 2050 the EU has committed to reduce its net GHG emissions by at least 55% by 2030. The 'Fit for 55' package is a set of proposals to ensure all sectors of the EU's economy are fit to meet this target. As the initial ETS excluded some industries, the ETS (Emissions Trading System) has been extended to include other industries, such as transportation. The extension is called ETS 2.

Greenwashing

Providing misleading or even fake information which makes the public believe that a company is doing good for the environment. For example, investigation into the world´s leading carbon certifier has revealed more than 90% of their rainforest offset credits are likely to be 'phantom credits' and do not represent genuine carbon reductions. A study undertaken by the European Commission (EC) highlighted that 53.3% of examined environmental claims in the EU were found to be vague, misleading or unfounded and 40% were unsubstantiated. Hence the EC issued a proposal which targets explicit claims. Companies will have to respect minimum norms on how they substantiate these claims and how they communicate them.

Greenwishing

What is the difference between greenwash and greenwish? The former occurs when companies or investors cynically promote green tokenism to divert attention from unsustainable core businesses. Greenwish is the earnest hope that voluntary sustainability efforts are closer to achieving the necessary change than they really are.

Insetting

Where a company invests in carbon reduction projects within their own supply chain. A good example is airfreight where companies may purchase SAF (sustainable aviation fuel) to reduce its own emissions. However, this SAF is used for airfreight other than the one of the investing company, which triggers a risk for double-accounting of the emission savings. This is where a carbon credit is claimed by more than one entity, even though no additional carbon benefit is produced.

Offsetting

A way to compensate for a company's GHG emissions, by investing in green projects and activities that are not related to a company's products. Forestry offsetting is the most frequently used. This proposal is subject to controversial debate (see Greenwashing).

Vehicles

Battery electric vehicles
BEV

Vehicles that are powered by an electric motor, which relies on electricity-provided large batteries that must be plugged into an electric outlet to be recharged.

Fuel cell electric vehicle
FCEV

Vehicles that are powered by an electric motor, which relies on electricity provided by a fuel cell, powered by compressed hydrogen and oxygen.

Hybrid electric vehicles
HEV

HEVs have a small electric motor which assists the internal combustion engine (ICE), typically at start of a journey, at low speeds or steady cruising. Its electric battery is recharged by the internal combustion engine or by braking.

Internal combustion engine vehicles
ICEV

Vehicles that are powered by internal combustion engines (ICE), which rely on hydrocarbon fuels.

Plug-in hybrid electric vehicles
PHEV

Vehicles that are powered by both an internal combustion engine and an electric motor. PHEVs use batteries to power the electric motor and fuel, such as gasoline or diesel, to power the ICE. PHEVs can charge their batteries by being plugged into an electric outlet. It typically has the ability to run medium distances only on electricity.

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