QAS certified calculation methodologies for clear.eco

Data sources used for emissions factors: 2025 DESNZ tCO2e including emissions for the extraction, processing and production of fuels, their transport disposal and other activities not directly present at point of use, where available.

Both business and personal online offset products use the same methodologies for calculation.

Flights

- All distance calculations are made using Great Circle calculations between actual airport lat/ long coordinates
- RFI 1.7 and 8% distance uplift for ATC routings and holding are included by default as required by the QAS
- International emissions factors are used which average out the efficiencies achieved on short, medium and long haul flights; economy flights under 1000km use domestic factors

Car/ van/ motorcycle

- Uplift of 23% is included over and above manufacturer's data to allow for real world conditions, as required by the QAS. No uplift is applied where real world average fuel economy figures are used.
- Figures for Plugin Hybrid Electric Vehicles (PHEV) and Battery Electric Vehicles (BEV) are calculated from energy calculations using real world uplift and fuel and country-specific emission factors for electricity, and include t&d losses and WTT factors.
- Motorcycle emissions are calculated from fuel used (distance travelled ÷ fuel economy), multiplied by the 2025 DESNZ factor for the fuel selected (petrol/ gasoline or diesel average biofuel blend, or LPG) including WTT.
- The default motorcycle fuel economy is the US real world average of 44.0 mpg (US) (FHWA Highway Statistics 2024, Table VM-1). Users should enter their own fuel economy where known.

Energy

- Natural gas uses gross CV figure for kWh conversion
- Domestic factors are used for coal
- Diesel & petrol/ gasoline use average biofuel blend as appropriate

Hotels

- Country specific hotel factors derived from DESNZ 2025 factors, using most recent historical data available where not current.

Commuting

- Our default working year of 220 working days per year is based on 253 minus 8 days of public holidays and 25 days of annual leave. This can be changed as required.

International electricity factors

- Grid emission factors change according to the country selected and are country-level generation-mix factors used as location-based proxies as required by the QAS. Clear includes transmission and distribution (t&d) losses and WTT emissions for all countries to provide consistent coverage of T&D and upstream emissions.
- Generation (Scope 2) factors: UK – DESNZ 2025; USA – US EPA eGRID2023; Canada – ECCC National Inventory Report 2026 (2024 data); Australia – DCCEEW National Greenhouse Accounts Factors 2025; New Zealand – MfE Measuring Emissions Catalogue 2026 (2025 data); South Africa – DFFE Grid Emission Factors Report (2023 data); Singapore – EMA Singapore Energy Statistics 2025 (2024 data); 33 further European countries – AIB European Residual Mixes 2025, production mix (2025 data); all other countries – IEA Electricity 2026 global average (2025).
- Where a source publishes CO2 only (AIB, EMA, IEA), a CO2e uplift of 1.2% is applied, equal to the ratio of CO2e to CO2 in the DESNZ 2025 UK electricity generation factor.
- T&d losses use published national figures where available (UK, USA, Canada, Australia, New Zealand, South Africa); elsewhere t&d is estimated as 10.47% of generation emissions, the ratio in the DESNZ 2025 UK factors.
- WTT for electricity is published by DESNZ for the UK only; for all other countries WTT is estimated as 28.18% of generation emissions, the ratio of WTT to generation in the DESNZ 2025 UK factors. Actual country-specific WTT may be higher or lower; the resulting uncertainty is disclosed as a methodology limitation.

Sea freight cargo

- Sea freight cargo calculations are based on large container vessel (8,000+ TEU) emission factors and include WTT emissions. If a significant amount of cargo is transported on alternative vessel types please contact us to discuss alternatives.

Internet

- Emails based on typical daily numbers of emails received/ sent by office workers and expected split into spam and with/ without attachments (Radicati, Mike Berners-Lee)

- Streaming figures based typical data usage for TV services (via CDN networks), 4K video, Zoom video, Skype video and music/ podcasts and KWh/ GB figures (Pihkola, Wandera, Android Central) using country-specific grid intensities (see above). Additional data works in the same way.
- OS/ App updates are based on typical operating system & app update downloads for a device connected by Wifi.

Skydiving

- The calculator uses load factors and reported fuel consumption figures from British Parachute Association (BPA) jump schools. The standard AvGas CO2e figures are used, combined with the capacity of the planes and the average reported load factors.

Balloon flights

- Based on 100L LPG and 40 mile retrieval round trip in average diesel van per hour of balloon flight
- Includes adjustment for fuel distribution (WTT)

Offline Business Carbon Footprint audit tools

- Methodology described under the Definitions tab of the tool itself

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