Tea's Carbon Footprint: The Kettle, Not the Miles

From the teas.co.uk wiki

> **Tea's carbon footprint, in summary:** Counter-intuitively, how you make the tea, boiling the kettle and adding milk, usually matters far more per cup than how far the leaf travelled. Boil only what you need, go easy on dairy, and tea is a low-carbon drink.

Tea's carbon footprint is widely misunderstood, and the most useful fact is counter-intuitive: for most everyday drinkers, how you make the tea, especially boiling the kettle and adding milk, typically matters more than how far the leaf travelled. The popular instinct to worry mainly about "food miles" gets the biggest lever wrong, and it's worth saying so.

Last reviewed by the teas.co.uk team in February 2026.

Where tea's emissions actually come from

Multiple life-cycle analyses converge on a consistent picture for a cup of British-style black tea with milk, and the use phase in your own kitchen dominates it. The kettle is the largest single contributor: boiling a litre of water in a UK electric kettle uses roughly 100 watt-hours, which at the current UK grid intensity (around 150g CO2 per kWh in 2025) is about 15g CO2, spread across however many cups you actually pour. Milk is next: dairy milk carries a footprint of roughly 1.3kg CO2 per litre, so a splash adds around 4g per cup. The tea leaf itself is tiny by comparison, since growing, processing and shipping a kilo generates only some 5 to 15kg CO2 and a bag uses about 2g of tea, leaving an agricultural footprint per cup of a few tens of milligrams. Tea leaf is light and ships efficiently in bulk, so per-cup transport emissions are small. The headline, then, is that the cup's carbon mostly sits in your kitchen, not on a ship.

The kettle: the biggest everyday lever

The single most effective thing most people can do for tea's footprint is mundane: boil only the water you need, and do not re-boil. UK consumers boil an estimated two to three times more water than they use, and over-filling repeated billions of times a day is a large, invisible waste of energy. Halve the water you boil and you roughly halve the kettle's contribution, which is close to halving the whole cup's footprint, at zero cost. Electric kettles are also more efficient than a gas hob for small quantities, converting most of their input into heat. And the kettle's footprint is shrinking on its own: the UK grid has fallen from around 460g CO2 per kWh in 2010 to roughly 150g in 2025 as renewables grow, which quietly decarbonises every cup, unlike the milk or the agriculture. A grounded footprint guide leads with the kettle because that is where the numbers

actually are.

Milk: the other big lever

For people who take milk, dairy is frequently a bigger per-cup contributor than the tea itself, and the difference between milks is genuine and easy to apply. Per litre, cow's milk is around 1.3kg CO2 with significant land use and methane on top, oat milk around 0.4kg with low land use, soya around 0.2kg, and almond around 0.4kg but with far higher water use. Oat is the most climate-friendly mainstream option for UK tea drinkers: widely available, acceptable in tea, and lowest in combined footprint. If milk in tea is non-negotiable, switching to oat cuts a typical cup's footprint by about a third. Black tea drunk without milk is, on carbon grounds, already very low impact. The how much milk in tea guide covers the taste side.

Where origin and packaging matter

The nuance, so this is not one-sided: compared with the kettle and milk, the agricultural and packaging footprint is small in the cup maths but real in aggregate. CTC commodity tea carries a slightly higher footprint per kilo than whole leaf because of the extra cutting energy, organic tea is marginally lower (no synthetic nitrogen fertiliser to manufacture), and loose-leaf packaging averages slightly lower per cup than teabag packaging, though since a cup uses only about 2g of tea the absolute differences are small. Two things do matter more: air-freighted tea, rare and mostly early-flush premium sold quickly, is far worse per cup than the normal sea route, and land-use change, the deforestation covered separately, is a serious land-carbon issue at the industry scale. So origin and packaging are not irrelevant; they are simply usually smaller per-cup levers for the individual while being significant across the system.

What the marketing claims actually mean

"Carbon neutral" tea has become a common brand claim: the producer calculates a per-bag footprint and buys offsets to balance it, so whether it means anything depends entirely on the offset quality. Some offsets fund genuine sequestration with long-term monitoring (reforestation, peatland restoration); others fund projects that would have happened anyway or double-count reductions. The Verified Carbon Standard and Gold Standard offer reasonable assurance, while cheap offsets often do not, so without third-party verification treat "carbon neutral" as marketing. "Net zero by 2030" pledges from major UK tea brands are more substantive, typically involving direct emissions cuts plus supply-chain commitments, but track records vary, so read them as direction-of-travel signals rather than confirmed action. Meanwhile, tea agriculture itself is slowly improving, with shade trees and soil-carbon practices (composting, reduced tillage, cover crops) moving some estates towards carbon-positive farming.

Cutting through the carbon marketing

A few habits keep it in proportion. The kettle and milk dominate your personal footprint, so brand claims about leaf and packaging matter less per cup than your own habits. "Carbon neutral" via offsets is only as good as the offsets, so without verification treat it as marketing. And the easy wins are at your kitchen tap and your fridge, not on the supermarket shelf: fill the kettle smaller, switch to oat milk if that works for you, and the cup's footprint drops meaningfully. Stated like that, tea is a low-footprint drink whose biggest everyday emissions are in your own kitchen, a useful, slightly surprising and genuinely actionable conclusion

rather than a vague "buy ethical" gesture. This is general environmental information, not a health claim.

Tea's carbon footprint at a glance

Stage	Share of a typical cup
Boiling the kettle	About 40 to 50% of a black-tea-with-milk cup, depending on how much water you boil.
Milk (if added)	About 30 to 40%. Dairy is the second-biggest lever; oat or soya drops it sharply.
Tea growing and processing	About 10 to 15%. Fuel, fertiliser and processing energy.
Transport (sea freight)	About 2 to 5%. A container ship is efficient per kilo.
Packaging	About 3 to 5%. Carton, pouch and bag add up across millions of cups.
Distribution and retail	About 2 to 5%. Lorries to depots, supermarket energy.
A cup of black tea with milk	Roughly 20 to 30g CO2 equivalent.
A cup of black tea, no milk	Roughly 8 to 12g CO2 equivalent.

Fill the kettle smarter, switch milk if you can, and drink your loose leaf or your bag without guilt, since per-cup tea is one of the lower-carbon drinks in the British kitchen. Browse the range in the full tea shop, where UK delivery is free over £35.

Reference noted

- Our World in Data: Environmental impacts of food

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