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Product CO2 Footprint

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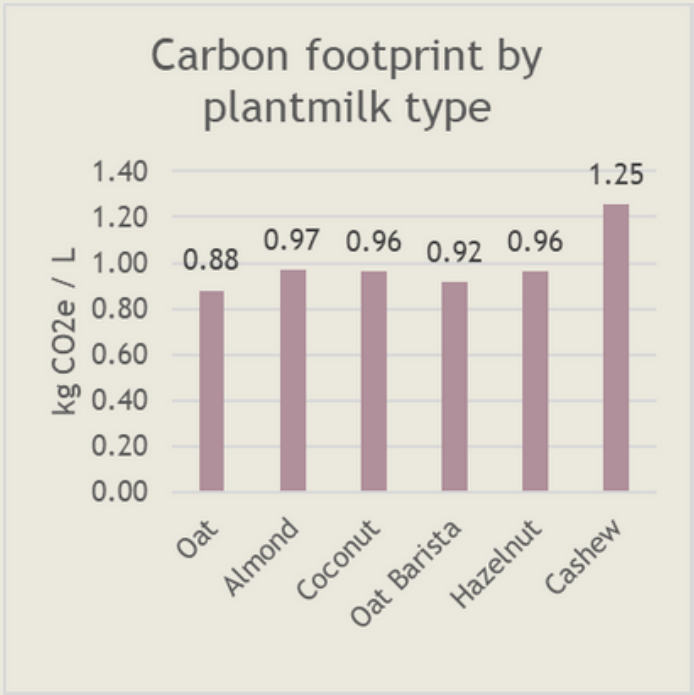
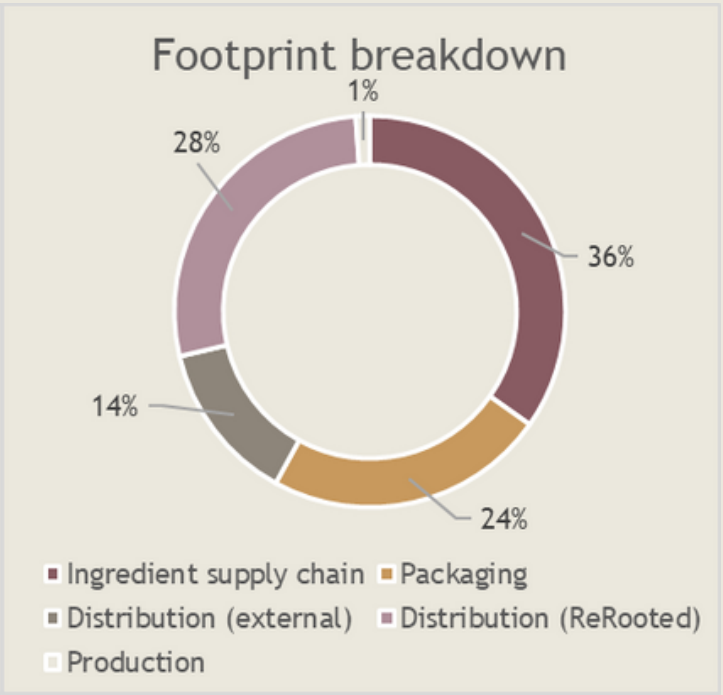
0.91 kg CO2e / litre on average





ReRooted is an organic plantmilk producer in Totnes, supplying plantmilk in reusable glass bottles to customers across the UK. Product greenhouse gas footprints were assessed for ReRooted's six main plantmilk flavors from cradle to customer (delivered to customer door or retail location) following the Greenhouse Gas Protocol Product Standard [1].

Major process steps assessed include farming and processing of ingredients, transportation to ReRooted, production and bottling of plantmilk, manufacturing of bottles, distribution to stockists or delivery to customer homes, and reverse logistics of bottle returns. Excluded from the analysis was customer use of the plantmilk and transportation from stockist to customer home. Per litre of plantmilk, the average carbon dioxide equivalent footprint is 0.91 kg. Data quality is between good and fair, as conservative assumptions and estimates were used for several components, but geography-specific, timely, and verified emissions factors were used [2, 3].

By choosing plantmilk over dairy, last year ReRooted customers saved

267,000
litres of diesel in carbon emissions

245
hectares of land

142,366,000
litres of freshwater

This estimate is in line with published global averages for plantmilk [4]. Accordingly, the footprint for ReRooted's plantmilk is about 1/3 of published global averages for dairy milk. ReRooted and its customers can be confident that their environmental footprint is being reduced in multiple impact areas, not just greenhouse gas emissions, by choosing plantmilk rather than dairy.

ReRooted could reduce the greenhouse gas footprint by 7% if the bottle return rate was increased to 80%; by 4% if all distributors electrified their delivery fleet; and by 13% if its two diesel vans were electrified.

Significant references

[1] W. Callahan, S. A. James Fava, S. Wickwire, J. Sottong, J. Stanway, and M. Ballentine, *Greenhouse Gas Protocol: Product Life Cycle Accounting and Reporting Standard* . Washington, D.C.: World Resources Institute, 2012. Accessed: Apr. 14, 2023. [Online]. Available: https://ghgprotocol.org/product-standard

[2] CarbonCloud, 'CarbonCloud Climate Hub', 2023. https://apps.carboncloud.com/climatehub (accessed Apr. 18, 2023).

[3] Department for Energy Security and Net Zero and Department for Business Energy and Industrial Strategy, 'Greenhouse gas reporting: conversion factors 2022: full set', *GOV.UK*, Sep. 20, 2022. https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2022 (accessed Apr. 27, 2023).

[4] J. Poore and T. Nemecek, 'Reducing food's environmental impacts through producers and consumers', *Science*, vol. 360, no. 6392, pp. 987–992, Jun. 2018.