Descriptive information	Company response
Company name	Paulig Group
Description of the company	Paulig is a family-owned, international enterprise in the food industry that is noted for its high-quality brands and services. We offer coffee, food concepts, spices, plant-based products and snacks. Our brands are Paulig, Santa Maria, Risenta and Poco Loco. We are a team of about 2,100 professionals in 13 countries.
Chosen consolidation approach (equity share, operational control or financial control)	Equity share
Description of the businesses and operations included in the company's organizational boundary	Paulig reports scope 1+2 emissions from all production sites of fully consolidated companies. Scope 1+2 emissions from leased office premises are included where information is available. Scope 1+2 emissions from external warehouses are accounted for in scope 3 category 1 purchased services emissions. Scope 3 emissions are reported for all Paulig Group companies in the consolidated financial statements. Operations included include sourcing of raw materials and packaging materials, logistics, manufacturing of goods as well as coffee making by end-customers as well as end-of-life treatment of packages brought to market.
The reporting period covered	Jan 1, 2022 – Dec 31, 2022
A list of scope 3 activities included in the report	Relevant scope 3 categories are identified being: Category 1: Purchased goods and services Category 2: Capital goods Category 3: Fuel- and energy-related activities (not incl. in Scope 1 or 2) Category 4: Upstream transportation and distribution Category 5: Waste generated in operations Category 6: Business travel Category 7: Employee commuting Category 9: Downstream transportation & distribution Category 11: Use of sold products (coffee and popcorn only) Category 12: End-of-life treatment of sold products (packaging only)
A list of scope 1, scope 2, and scope 3 activities excluded from the report with justification for their exclusion	**8. Upstream leased assets** Upstream leased assets are identified to include leased machinery and equipment. As the use-phase scope 1+2 emissions from the leased assets have already been accounted for in scope 1+2, thus, to avoid double-accounting, category 8 is excluded. **10. Processing of sold products** Paulig sells food products that can be processed in many ways during cooking before consumption and accurate data collection of the different use cases is challenging, thus due to the lack of data, the category is excluded. **13. Downstream leased assets** Paulig Group sources some coffee machines to-be-leased to out-of-home customers such as offices, coffee shops or restaurants, but the leasing contracts are made between the Paulig customer and a third-party finance company operating the leasing contracts and buying the machines from Paulig. Thus Paulig does not operate as the lessor except for in few single cases which are considered to be immaterial from full scope 3 perspective. Therefore, category not relevant for Paulig. **14. Franchises** Category not relevant as Paulig does not own or operate any franchises. **15. Investments**

Descriptive information	Company response
	Paulig Group does not operate in the professional investment sector. Thus, investment portfolio climate impact is excluded from the reporting.
The year chosen as base year and rationale for choosing the base year	2018 which was the most recent year with readily available data when planning the Science-based climate targets (validated in 2020).
Once a base year has been established, the chosen base year emissions recalculation policy. If base year emissions have been recalculated, the context for any significant emissions changes that triggered the recalculation.	Base year emissions recalculation is triggered by any significant (> 5%) change in baseline emissions due to change in calculation principles or methodology or change in corporate structure. In 2022, three changes took place that affect base year emissions: Paulig divested from it's operations in Russia, and from its subsidiary Gold&Green Finland Oy. Paulig also acquired a Spanish snacking manufacturer Liven. For GHG reporting, the base year and consecutive years have been fully restated to reflect the changes in corporate structure to enable a fair comparison of GHG emissions performance over the years. The net impact for 2021 emissions from the changes was an increase of +2% for scope 1+2 and decrease of -1% for scope 3. The Liven acquisition resulted in an increase of +13% for scope 1+2 and +7% for scope 3 emissions. Divestments resulted in a decrease of -11% for scope 1+2 and an -8% in scope 3.

Greenhouse gas emissions data

Scopes and categories	Metric tons CO_2e	Share of scope 3 emissions	Primary data	Secondary data
Scope 1: Direct emissions from owned/controlled operations	23,769		100%	
Scope 2: Indirect emissions from the use of purchased electricity, steam, heating, and cooling	36		100%	
Upstream scope 3 emissions				
Category 1: Purchased goods and services	472,518	80%	30%	70%
Category 2: Capital goods	14,358	2%		100%
Category 3: Fuel- and energy-related activities (not included in scope 1 or scope 2)	6,060	1%	100%	
Category 4: Upstream transportation and distribution	16,794	3%		100%
Category 5: Waste generated in operations	510	0%	100%	
Category 6: Business travel	982	0%	100%	
Category 7: Employee commuting	1,894	0%		100%
Category 8: Upstream leased assets	Not relevant			
Downstream scope 3 emissions				
Category 9: Downstream transportation and distribution	8,284	1%		100%
Category 10: Processing of sold products	Not relevant			
Category 11: Use of sold products	57,718	10%		100%
Category 12: End-of-life treatment of sold products	13,406	2%		100%
Category 13: Downstream leased assets	Not relevant			
Category 14: Franchises	Not relevant			
Category 15: Investments[1]	Not relevant			

Biogenic CO_2 emissions data

Scopes and categories	Metric tons biogenic CO_2
Direct biogenic CO_2 emissions from owned/controlled operations	6,027
Indirect biogenic CO_2 emissions from the use of purchased electricity, steam, heating, and cooling	N/A

Description of methodologies and data used

Scope	Methodologies used to calculate or measure emissions, providing a reference or link to any calculation tools used
Scope 1	Scope 1 emissions include GHG emissions from Paulig Group own operations/manufacturing facilities fuel (natural gas) consumption, refrigerant leaks and CO2 added to product packages. Fuel usage activity data is collected monthly from production sites who again obtain the activity data either from facility specific metering or energy provider reporting/invoicing. Refrigerant leakage data is obtained from maintenance/service provide mandatory maintenance reports & inspection documentation. CO2 used in product packaging is obtained from Paulig internal business management / ERP systems recording the sourcing and use of input materials in production. GHG conversion factors obtained from UK Defra (Government 2022 conversion factors for company reporting of greenhouse gas emissions). Regarding refrigerants, the conversion factors used (GWP) as published by the IPCC in its Fourth Assessment Report (IPCC, 2007).
Scope 2	Scope 2 emissions activity data include energy consumption data for electricity, district heating and steam obtained from either own metering or energy provider reporting system or energy invoices and reported monthly by the production sites. For electricity market-based emissions, energy-provider specific emissions factors are used. For national, location-based emissions, emissions conversion factors according to the AIB (Association of Issuing Bodies) European Residual Mixes 2021, "Results of the calculation of Residual Mixes for the calendar year 2021" are used.

Scope and category	Description of the types and sources of data used to calculate emissions	Description of the methodologies, allocation methods, and assumptions used to calculate emissions
Category 1: Purchased goods and services	Purchased goods related to PG product categories: coffee, tex mex, healthy meals & Customer Brands, including packaging materials. **For direct sourcing:** Activity data used is the sold volume of ready-made-products during the reporting year. Product-specific emissions factors are based on some supplier-specific emissions factors, company-commissioned LCA studies (for coffee and taco meal) by research institutes in Finland (Natural Resources Institute) and Sweden (former SIK, current RISE, Research Institutes of Sweden) as well as some external database emissions factors such as Ecoinvent, Agribalyse and Danish The Big Climate Database https://denstoreklimadatabase.dk/en Since no specific product level LCA's exist for all products, sold products are categorized into 12 "climate categories" based on their estimated emissions intensity and representative emissions factors were assigned to each climate category. More details on the coffee LCA calculation and data sources: https://link.springer.com/article/10.1007/s11367-020-01799-5.) **For indirect sourcing**: Activity data is the monetary spend used product and service categories in scope. Emissions factors for the monetary spend on products and services were obtained from the 2012 Guidelines to DEFRA/DECC's GHG Conversion Factors for Company Reporting, Annex 13 (Indirect emissions from supply chain).	In the referred to LCA's the scope has been cradle-to-grave. However, for reporting purposes, the product life cycle has been split between cradle-to-gate (category 1) and gate-to-grave (categories 4,9,11,12). Estimated emissions from land use or land use change in are not included in the scope. Paulig 1+2 emissions own operations/production was deducted from the cradle-to-gate emissions. For taco meal LCA, infrastructure was included in background data retrieved from Ecoinvent database applying, for example, to data for packaging materials and energy. Contributions from the maintenance of machinery, buildings, transport or roads were not included in the study, nor was infrastructure for the other parts of the value chain. The climate categorization of sold products relates to 98% of sales by volume, the leftover category being "Others", 2%. Others category mainly includes in-store display pallets for which a higher EF is used for precautionary purposes in order not to underestimate the climate impact. Regarding indirect sourcing as well, estimated emissions from some indirect sourcing categories are presented in other scope 3 categories such as up- and downstream transportation in categories 4 and 9 (when sourced from an external service provider), business travel in category 6.

Scope and category	Description of the types and sources of data used to calculate emissions	Description of the methodologies, allocation methods, and assumptions used to calculate emissions
Description of the data quality of reported emissions		Fairly good The data quality varies between the different raw materials. In general, the quality of climate data is considered to be relatively good. The climate impact not only varies between different food products but can also vary for the same product depending on how production is conducted, For some of the raw materials, existing life cycle analyzes/climate calculations are completely missing, which entails data gaps in the climate calculations. This applies, for example, to chili, chili powder, oregano, cumin and other spices except salt in the taco spice mix LCA analysis. Therefore, the climate impact from certain raw materials was substituted or calculated using assumptions and general calculations. This applied, for example, to dextrose and maltodextrin. Other examples are that certain origin production data was substituted with productions from different geographical location, for example Swedish cultivation of onions represented all onions in the products. The allocations made in the product-level climate calculations are in most cases based on economic allocation.
Percentage of emissions calculated using data obtained from suppliers or other value chain partners		Approx. 30% of sold products GHG emissions based at least on partly on supplier primary data (coffee farms) and/or industrial production. However, for coffee the primary data used was from 2014-2016, and for wheat from 2018.
Category 2: Capital goods	Capital goods relate to capital expenditure on land, buildings & construction, machinery & equipment and other long-term investments. Activity data is the monetary spend on capital goods activated to the Paulig Group balance sheet during the reporting year. Spend data obtained from Paulig internal accounting systems. Emissions estimated based on monetary value of investments by investment type. Emissions factors for the monetary spend on added PPE were obtained from the 2012 Guidelines to DEFRA/DECC's GHG Conversion Factors for Company Reporting, Annex 13 (Indirect emissions from supply chain).	Estimated GHG emissions from capital goods purchased during the reporting year were calculated based on categorizing the PPE additions (land, buildings & construction, machinery & equipment) and mapping to relevant SIC sector codes such as construction and machinery and equipment. The amount of monetary spend was then multiplied by the respective GHG conversion factor and subsequently added up to the total GHG emissions from capital goods. It is assumed that the used sector specific average-spend conversion factors do not include the use-stage energy consumption climate impacts of the buildings, machinery and equipment (which is included in scope 1+2 emissions).
Description of the data quality of reported emissions		Fair
Percentage of emissions calculated using data obtained from suppliers or other value chain partners		0%
Category 3: Fuel- and energy-related activities (not included in scope 1 or scope 2)	Transmission and distribution losses of sourced energy calculated from the same energy consumption data as in scope 1 and 2. Conversion factors we're obtained from UK Defra's (Government conversion factors for company reporting of greenhouse gas emissions).	
Description of the data quality of reported emissions		Fairly good.
Percentage of emissions calculated using data obtained from suppliers or other value chain partners		0%
Category 4: Upstream transportation and distribution	Upstream transportation data for inbound raw material deliveries to Paulig production sites is based on data collected for the coffee and taco meal LCA studies conducted in 2016 and 2012. Ingredient specific distances transported and transportation methods used were collected for each material raw material and component. In the coffee LCA transportation data including vehicle types, loads and distances inside coffee cultivation	For taco meal LCA, for all road transport, a 70% load factor was assumed. For transports in Sweden, a Lorry / truck + trailer or semi-trailer on dolly (40-60 tons) was counted. For truck transports outside Sweden, a tractor + semi-trailer has been adopted (30-40 tonnes). For all boat transports, an 80% load factor has been assumed. For "shorter" boat transports ((<1000 km) a ro-ro ship has been adopted, while for long boat distances a container ship has been counted. In cases where were used, it was based on a 60% load factor and European electricity production.

Scope and category	Description of the types and sources of data used to calculate emissions	Description of the methodologies, allocation methods, and assumptions used to calculate emissions
	countries was based on information collected from the farms, but in case of Nicaragua, the distance from processing site to harbor was based on Google Maps information. Emission factors were based on EcoInvent database (Frischknecht et al. 2005). Inventory data from transportation from coffee cultivation countries to the Paulig's roastery including the routes and distances was according to information from transportation companies. The data took into account ship transportations to Hamburg and from Hamburg to the Vuosaari harbor. Emission factors for transportation were from transportation companies for different routes as well. Data and assumptions about load grades were taken from method reports and the calculation tool "NTMcalc 3 professional" within the Network for Transport and the Environment (www.ntmcalc.org).	In the coffee LCA, data for a route from Honduras to Helsinki was missing, and the data form Nicaragua route was used instead.
Description of the data quality of reported emissions		Fair
Percentage of emissions calculated using data obtained from suppliers or other value chain partners		0%
Category 5: Waste generated in operations	Waste generated at Paulig production sites and those offices located in the same buildings with production sites. Activity data is the volume amount (kg) of waste by type and handling method collected and reported by Paulig waste service provider partners and their reporting systems and/or invoices. Waste water treatment GHG emissions we're calculated based on the water consumption(in m3) by production facilities. Conversion factors we're obtained from UK Defra's (Government conversion factors for company reporting of greenhouse gas emissions).	Reported waste amount data by waste type and handling method multiplied by the relevant GHG emissions conversion factor. Reported water consumption data was assumed to correspond to the amount of water being emitted to wastewater treatment by each production site. Consumption data was multiplied by the respective GHG emissions conversion factor.
Description of the data quality of reported emissions		Fairly good
Percentage of emissions calculated using data obtained from suppliers or other value chain partners		0%
Category 6: Business travel	Business travel emissions from business flights and hotel nights when booked through Paulig business travel service partner. GHG emissions calculation of flights conducted directly by the service provider based on the mileage of flights. Activity data regarding hotel nights is the number of nights per country of stay obtained from the travel service provider.	Flight emissions multiplied by two to incorporate the Radiative Forcing Index of flight emissions. Emissions factors per hotel were obtained for three geographic areas respectively: Finland/Sweden/Norway (using Finland EF), UK, Belgium, Spain (and Estonia, Latvia and Lithuania).
Description of the data quality of reported emissions		Good
Percentage of emissions calculated using data obtained from suppliers or other value chain partners		0%
Category 7: Employee commuting	Employee commuting impacts calculated based on the number of active employees per each country of operation and estimating the country/area-specific profiles for average commuting distances on transportation methods with an average of 250 working days per year. Emission factors for specific transportation methods (cars and buses) are based on UK Defra GHG conversion factors.	For the exceptional Covid-19 year in 2020, the amount of commuting was estimated to have decreased for white collar workers due to remote working so that during Q2-Q4, the commuting was estimated to be only 50% compared to previous year per active employee. For 2022 a hybrid working model for white collar workers was assumed to be 40% working remotely and 60% at the office as per company policy.

Scope and category	Description of the types and sources of data used to calculate emissions	Description of the methodologies, allocation methods, and assumptions used to calculate emissions
Description of the data quality of reported emissions		Fair
Percentage of emissions calculated using data obtained from suppliers or other value chain partners		0%
Category 9: Downstream transportation and distribution	Downstream transportation data for outbound product deliveries material Paulig customers was based on data collected for the taco meal LCA studies conducted in 2012. Product group specific distances transported from the factories to customers (retail and out-of-home warehouses/logistics centers) and transportation methods used were estimated within the destination market.	Downstream transportation and distribution emissions exclude the last mile transportation by consumers from retail outlet or café/restaurant to home as this data is difficult to collect and track credibly for all Paulig markets and as the share of an individual product within the consumer shopping cart is likely to be quite small.
Description of the data quality of reported emissions		Fair
Percentage of emissions calculated using data obtained from suppliers or other value chain partners		0%
Category 11: Use of sold products	Climate impacts for the processing sold products has been calculated for the coffee products and microwave popcorn sold in 2022 since other product categories in the Paulig portfolio require relatively small amount of preparation and thus the use stage climate impact is considered to be small. Processing phase studied included automatic coffee machines and coffee making at home. Data used for the calculation is based on the LCA conducted by the Natural Resources Institute Finland, commissioned by Paulig in 2018 regarding the coffee GHG and water impacts. More details on the calculation and data sources: https://link.springer.com/article/10.1007/s11367-020-01799-5.)	The office coffee machines studied included six scenarios with different types of machines. Making coffee at home included water, coffee beans, filter (if used) and electricity used in two types of coffee machines; traditional coffee machine with filter (drip-brew) and French press. In case of French press, filter is not used and water need to be heated in electric water heater. It was assumed that the heat was on in coffee machine 37 minutes consuming 0,037 kWh/l (Humbert et al 2010). Electricity consumption for electric water heater it is 0,07 kWh/l (Vattenfall). However, in case of French Press, the pot has to be heated first with hot water, i.e. the double amount of water is needed, when electricity consumption in both cases is the same per one liter coffee, if the pot is heated with boiled water. For filter production, the emission factor of bleached paper was used. Filter weight is 51 g/m2 (Foodie 2017) and according to measurements the filter area is approximately 0,025 m2, when weight of one filter is 1,275 g. The consumption of coffee is 65 g / liter for both drip-brew and French press coffee machines.
Description of the data quality of reported emissions		Fair
Percentage of emissions calculated using data obtained from suppliers or other value chain partners		0%
Category 12: End-of-life treatment of sold products	End-of-life treatment of sold products concerns the climate impacts from assumed waste management methods of the packages of products sold by Paulig companies. Activity data used is the volume of goods sold by Paulig during the reporting year. The share of packaging climate impact of the life-cycle impacts of the products based on the climate categorization referred to in Category 1 description and the LCA's conducted for coffee and taco meal.	Regarding the waste management methods chosen, a worst-case assumption is applied from a climate impact perspective i.e. that the plastic packaging for example will result in incinerators instead of being recycled to new material.
Description of the data quality of reported emissions		Fairly good
Percentage of emissions calculated using data obtained from suppliers or other value chain partners		0%