

GHG EMISSIONS SCOPE 1 AND SCOPE 2 GHG EMISSIONS

We report our greenhouse gas (GHG) emissions according to the GHG Protocol developed by the World Resources Institute (WRI) and the World Business Council on Sustainable Development (WBCSD).

Emissions reported are all from entities over which Logoplaste has operational control.

Global warming potential (GWP) values for a 100-year time horizon are from 4th assessment report (AR4).

Scope 1 and 2 GHG emissions are calculated based on the Greenhouse Gas Protocol: Corporate Accounting and Reporting Standard (Revised Edition). Carbon dioxide (CO₂) is the predominant gas included in the calculation of Scope 1 and 2 emissions, but emissions factors may also include small amounts of methane (CH₄) and nitrous oxide (N₂O). Sulfur hexafluoride SF₆, used in the electrical industry as a gaseous dielectric medium for high-voltage circuit breakers, switchgear, and other electrical equipment, is also considered. As Logoplaste uses refrigerants, HFC's are also included.

Emissions factors for Scope 1 are from DEFRA's Greenhouse gas reporting conversion factors 2019-2022.

Detail of Scope 1 Emissions

SCOPE 1	Unit	2019			2020			2021			2022		
		Consumption	Emissions (Tons CO ₂ e)	%	Consumption	Emissions (Tons CO ₂ e)	%	Consumption	Emissions (Tons CO ₂ e)	%	Consumption	Emissions (Tons CO ₂ e)	%
Natural Gas	m ³	748 956	1 521	36,7%	723 405	1 463	32,7%	662 482	1 339	43,5%	1 119 004	2 256	52,8%
LPG	kg	54 499	160	3,9%	74 485	219	4,9%	85 189	250	8,1%	85 501	251	5,9%
Red Diesel	L	14 899	41	1,0%	3 126	9	0,2%	2 280	6	0,2%	9 982	28	0,6%
Petrol	L	0	0	0,0%	892	2	0,0%	707	2	0,1%	1 102	2	0,1%
Diesel - Company Cars	L	236 980	615	14,9%	397 402	1 012	22,7%	362 224	910	29,6%	397 177	1 016	23,8%
Petrol - Company Cars	L	54 453	120	2,9%	63 498	138	3,1%	76 389	168	5,4%	116 508	252	5,9%
Refrigeration Gases Leakages	kg	809	1 682	40,6%	829	1 625	36,4%	213	404	13,1%	266	464	10,9%
TOTAL		-	4 139	100,0%	-	4 468	100,0%	-	3 079	100,0%	-	4 269	100,0%

NATURAL GAS + COMPANY CARS 82.5%

THE METHODOLOGICAL PROCESS AND ASSUMPTIONS FOR GHG EMISSIONS CALCULATION

Emission factors provided by the electricity suppliers are used for the calculation of market-based Scope 2 GHG Emissions, when available. Otherwise, the following sources described in the below table are used:

Electricity emission factor sources

COUNTRY	ELECTRICITY EMISSION FACTOR SOURCES (LOCATION-BASED)	ELECTRICITY EMISSION FACTOR SOURCES (MARKET-BASED)
Belgium, Czech Republic, Spain, France, Italy, Netherlands, Portugal, Poland	European Production Mix Reports - AIB (Association of Issuing Bodies)	European Residual Mix Reports - AIB (Association of Issuing Bodies)
United Kingdom	DEFRA UK Conversion Factors	
Brazil	Fatores de Emissão de CO2 pela geração de energia elétrica no Sistema Interligado Nacional do Brasil, Inventário Corporativo - Ministério da Ciência, Tecnologia e Inovação	Fatores de Emissão de CO2 pela geração de energia elétrica no Sistema Interligado Nacional do Brasil, Inventário Corporativo - Ministério da Ciência, Tecnologia e Inovação
Canada	National Inventory Report (NIR) 1990-2020, Part 3, Annex 13 (published 2022) - Environment and Climate Change Canada	National Inventory Report (NIR) 1990-2020, Part 3, Annex 13 (published 2022) - Environment and Climate Change Canada
Mexico	Factores de Emisión del Sistema Eléctrico Nacional - CRE (Comisión Reguladora de Energía)	Factores de Emisión del Sistema Eléctrico Nacional - CRE (Comisión Reguladora de Energía)
United States	eGRID2019 (published 2021), eGRID2020 (published 2022), eGRID2021 (published 2023)	eGRID2019 (published 2021), eGRID2020 (published 2022), eGRID2021 (published 2023)
Russia, Ukraine, Vietnam	Emissions Factors - 2022 Edition - IEA (International Energy Agency)	Emissions Factors - 2022 Edition - IEA (International Energy Agency)

Note: Electricity emission factor sources for scope 2 location-based and scope 2 market-based GHG emissions calculations

For Canada and US, regional emissions factors are used, when specific emission factors provided by the electricity suppliers are not available.

Although through the report we refer only to scope 2 market-based emissions we also calculate scope 2 location-based emissions, as shown in the following table.

Scope 2 location-based and scope 2 market-based

Year	Emissions (Tons CO2e)	
	Scope 2: Location-Based	Scope 2: Market-Based
2019	99 526	102 376
2020	126 509	124 990
2021	133 000	86 623
2022	137 882	80 630

SCOPE 3 GHG EMISSIONS

Logoplaste's Scope 3 GHG emissions are calculated according to the Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard. Carbon dioxide (CO₂) is the predominant gas included in the calculation of Scope 3 emissions, but emissions factors may also include small amounts of methane (CH₄) and nitrous oxide (N₂O).

Majority of emissions factors for Scope 3 are from DEFRA's Greenhouse gas reporting conversion factors 2019-2022. To calculate GHG emissions associated with raw materials, we used the latest eco-profiles published by Plastics Europe and WARM.

Our GHG inventory for previous years will only be recalculated if it impacts more than 5% of the overall scope.