



Carbon Accounting Report 2023



Paf commits to Net-Zero by 2040

Climate change is already here. According to IPCC's latest assessment report, there is an urgent need for action on climate change to avoid the most severe impacts of global warming. According to climate scientists the Global CO₂ emissions need to be cut by about 45% from 2010 levels by 2030 and reach Net-Zero by 2050 the latest to limit global warming to 1.5°C.

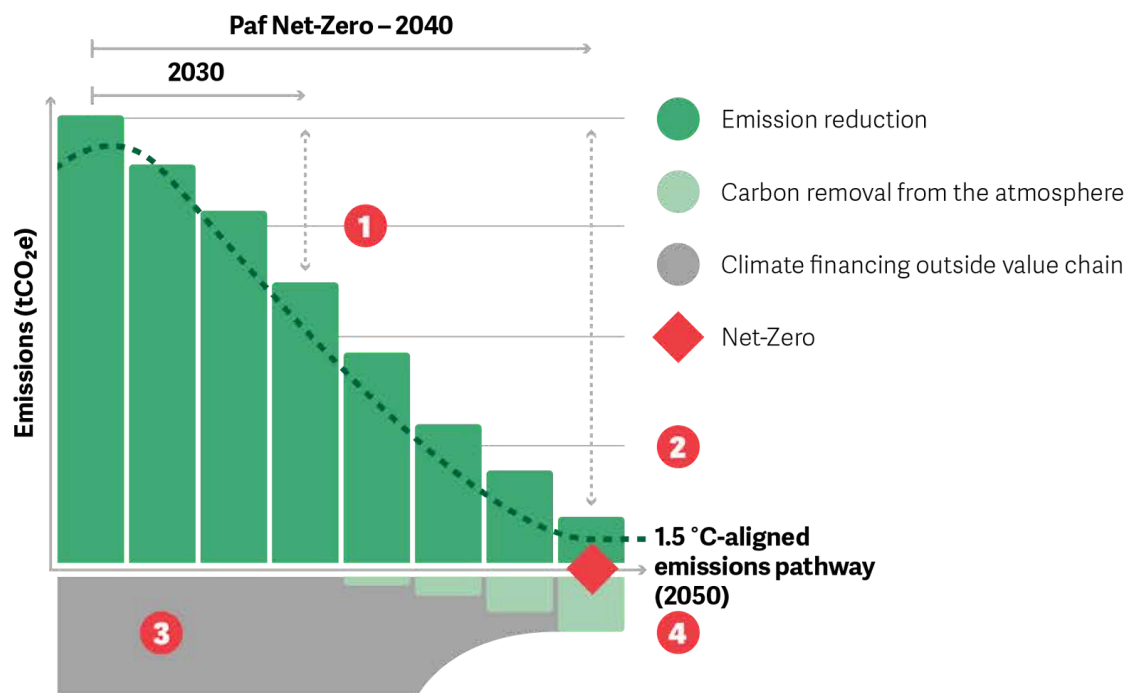
That's why Paf has committed to reach Net-Zero in greenhouse gas emissions by 2040, a goal that aligns with global standards set by the Paris Agreement.

In 2023, Paf's Net-Zero target was validated by The Science Based Targets initiative (SBTi), marking a significant step in our climate action efforts. Our plan involves reducing greenhouse gas emissions by 90% from 2019 years levels by 2040, with the remaining emissions to be neutralized through carbon removals.



Our selection of 2019 as a base year, reflects our company's habits before the Covid-19 pandemic. From 2019 to 2023, we reduced our total emissions from 5,919 tonnes of carbon dioxide equivalent (tCO₂e) to 5,896 tCO₂e. During this period, we also improved our efficiency, reducing our emission intensity from 51.83 tCO₂e/1M€ to 35.03 tCO₂e/1M€, demonstrating an ability to grow sustainably.

To achieve our Net-Zero target, we are focusing on direct emission reductions, enhancing energy efficiency, and engaging our supply chain in our environmental initiatives.



1. **Near-Term science-based targets.** Paf commits to reduce scope 1 and scope 2 GHG emissions by 46% by 2030 from a 2019 base year.
2. **Long-Term science-based targets.** Paf commits to reduce scope 1+2+3 GHG emissions by 90% and reach Net-Zero by no later than 2040.
3. **Beyond value chain mitigation (climate financing).** In the transition to Net-Zero, Paf finances climate projects outside its own value chain.
4. **Neutralization of remaining emissions.** Emissions caused by Paf after achieving Net-Zero must be counterbalanced by permanently removing and storing carbon from the atmosphere.

Looking ahead, Paf is dedicated to implementing climate action into every business aspect, working closely with suppliers and partners, and supporting external projects by climate financing.

This report provides an overview of Paf's greenhouse gas emissions, according to the GHG-protocol corporate standard.

Methodology

This report outlines Paf's approach to carbon accounting, detailing our emissions inventory, and gives us a transparent overview of our progress towards Net-Zero. By documenting our approach and progress in this report, we aim to provide stakeholders with a comprehensive insight into Paf's environmental progress.

The Greenhouse Gas Protocol

Since 2016, Paf has calculated its climate impact according to the guidelines of The Greenhouse Gas Protocol (generally referred to as GHG protocol), which are one of the world's most used greenhouse gas accounting standards. GHG offers a framework for measuring and managing emissions from private and public sector operations, value chains, products, and strategies.

Scope 1 / Direct Emissions	Scope 2 / Indirect emissions from purchased energy	Scope 3 / Indirect emissions from business activities
Direct greenhouse gas emissions from sources owned or controlled by the company (in Paf's case, company vehicles).	Emissions from heating, cooling and production of electricity purchased by Paf.	Indirect emissions caused by Paf's activities such as business travel, purchased technology, electricity consumption for physical games and server services, as well as capital goods, waste management and employee commuting. Scope 3 contains a total of 15 categories, eight of which are relevant to Paf's operations.

Carbon Accounting

In 2023, we began a partnership with Normative, a carbon accounting engine based on the GHG Protocol standard for corporate emissions calculations. Normative's science-backed platform enables businesses to accurately calculate, report, and reduce their greenhouse gas emissions. The dashboard provided by Normative offers a detailed overview of all our emissions across the organization, identifies Paf's emission hotspots, and, guided by Normative's Climate Strategy Advisors, suggests where to start reductions.

Normative calculates emissions using data from a variety of sources, including the UK government's **DESNZ** (formerly known as DEFRA) for Scope 1, Mobile Combustion (fuels usage), Scope 2, heating and cooling, and Scope 3, waste generated in operations, business travel (including hotel stays), employee commuting (including working from home), downstream leased assets; **IEA** for Scope 1, Mobile Combustion (Electric vehicles), Scope 3, downstream leased assets; **Idemat** for Scope 1, Mobile Combustion (Adblue); **AIB** for Scope 2, electricity, Scope 3, employee commuting (including working from home) and downstream leased assets; **Ecoinvent** for Scope 3, purchased goods and services; **Exiobase** for Scope 3, purchased goods and services, capital goods.

For more details on Normative emissions calculation methodology, [please click here](#).

Base year

Our selection of 2019 as a base year, reflects our company's habits before the Covid-19 pandemic. During 2023, we have recalculated our base year 2019 and 2023 emissions in significantly more comprehensive calculations, as it is a requirement from SBTi that at least 95% of the emissions should be included in the reporting. Our base year and 2023 are calculated under the same conditions and bases, therefore the climate impact of 2023 will mainly be compared with the base year.

Emissions Inventory

Paf's emissions inventory has been collected to align with the Science Based Targets initiative (SBTi) criteria, ensuring comprehensive coverage and accountability across all scopes of our greenhouse gas emissions. In compliance with SBTi requirements, our inventory accurately includes 100% of emissions from Scope 1 and Scope 2, and at least 95% of emissions from Scope 3, offering a transparent view of our carbon footprint.

The data for carbon accounting relies on two sets of data:

- **Spend data:** Covers outbound financial transactions from Paf's accounts, accessible via financial accounting. It encompasses all economic activities within the reporting period, offering a broad view of the company's economic engagements, especially in the supply chain. The data input contains the supplier name and country, the cost (ex. VAT), the currency, date and account.
- **Activity data:** The activity-based method gives us more precision of our carbon emissions, such as the actual quantities of goods or services acquired, e.g., the exact volume of fuel purchased instead of the monetary value spent on fuel. This data type enables a more accurate and granular analysis of the emissions.

Combining spend and activity data gives a comprehensive overview of our carbon footprint, from broad economic activities to specific operational inputs.

		Extent	Data	Comment
Scope 1	Refrigerants	Not relevant		
	Mobile combustion	Included	Activity data	Vehicles
	Stationary combustion	Included	Activity data	Solar energy produced on Åland
Scope 2	Electricity	Included	Activity data	Some of the heating and cooling emissions are calculated within the energy category.
	Heating	Included	Activity data	Including district heating
	Cooling	Included	Activity data	Including district cooling
Scope 3	1: Purchased goods	Included	Activity and spend data	All our IT equipment reported as activity data
	1: Purchased services	Included	Spend data	
	2: Capital goods	Included	Spend data	Purchased equipment for game machines
	3: Fuel- and energy-related activities	Included	Activity data	Calculation based on Scope 1 & 2
	4: Upstream transportation and distribution	Included	Spend data	
	5: Waste generated in operation	Included	Activity data	
	6: Business travel	Included	Activity data	
	7: Employee commuting	Included	Activity data	
	8: Upstream leased assets	Not relevant		
	9: Downstream transportation and distribution	Not relevant		
	10: Processing of sold products	Not relevant		
	12: End-of-life treatment of sold products	Not relevant		
	13: Downstream leased assets	Included	Activity data	Game machines
	14: Franchisers	Not relevant		
	15: Investments	Not relevant		

Our Climate Impact 2023

5,896
tCO₂e

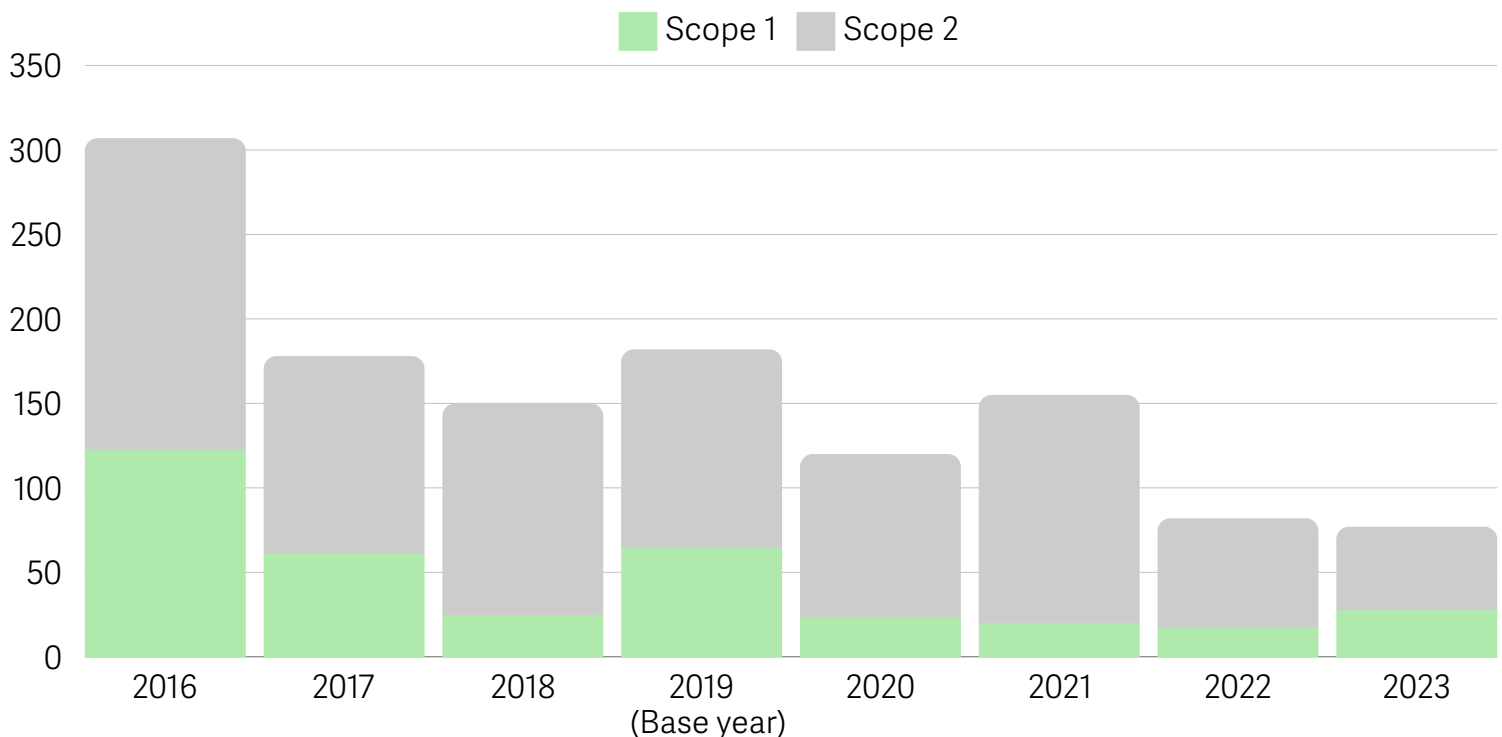
35.03
tCO₂e/1M€

20.19
tCO₂e/employee

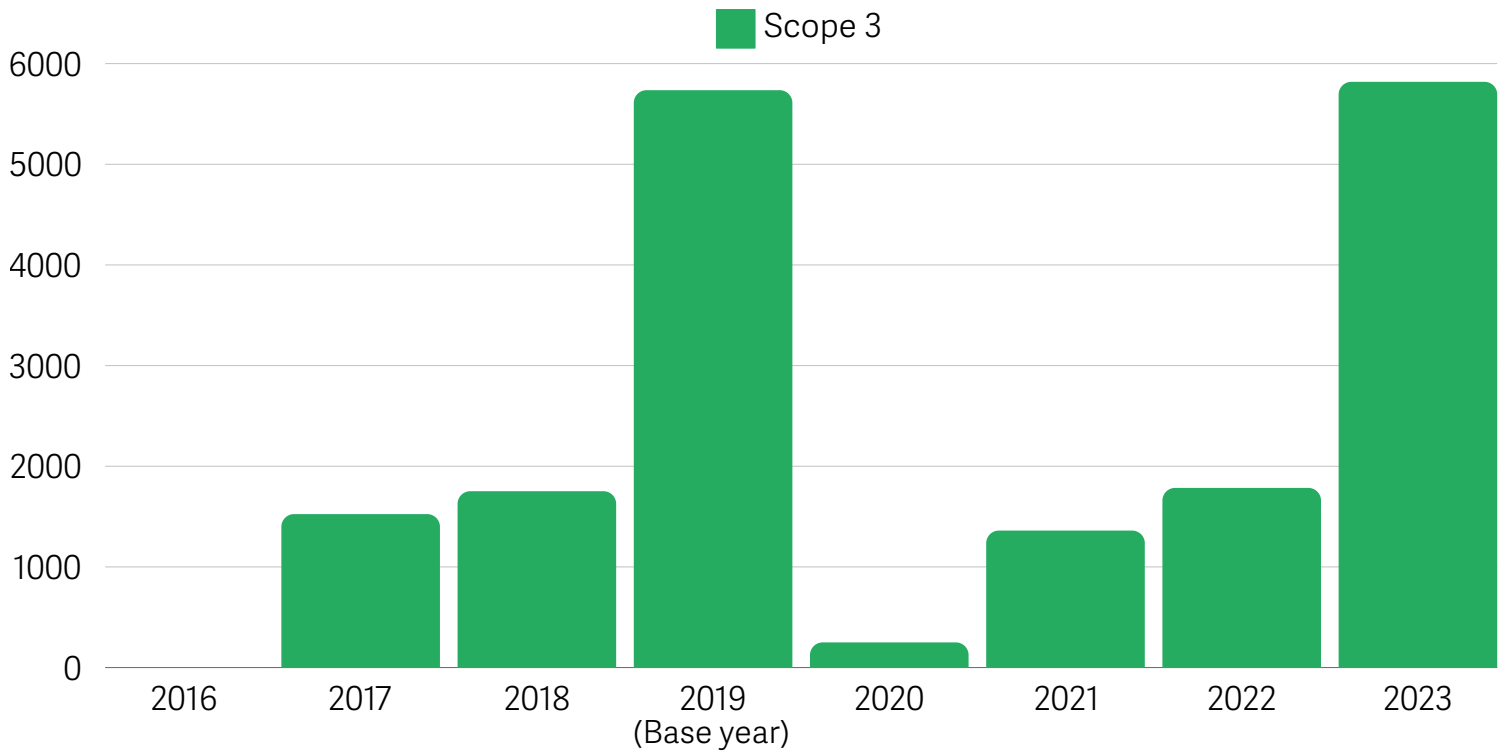
Paf's entire operations in 2023 had a total climate impact of 5,896 tonnes CO₂e, a slight decrease from 2019, which resulted in 5,919 tCO₂e. The biggest climate impact is within Scope 3 (98.7%), where the three largest categories are Purchased goods and services (3,827.05 tCO₂e), Capital goods (881.96 tCO₂e), and Downstream leased assets (613.20 tCO₂e).

In 2023 we extended the calculation to meet SBTi's criteria to have at least 95% of the emissions included in the reporting, and we recalculated our base year 2019. Therefore, the comparison between 2019 and 2023 is the most significant.

Scope 1 & 2 emissions



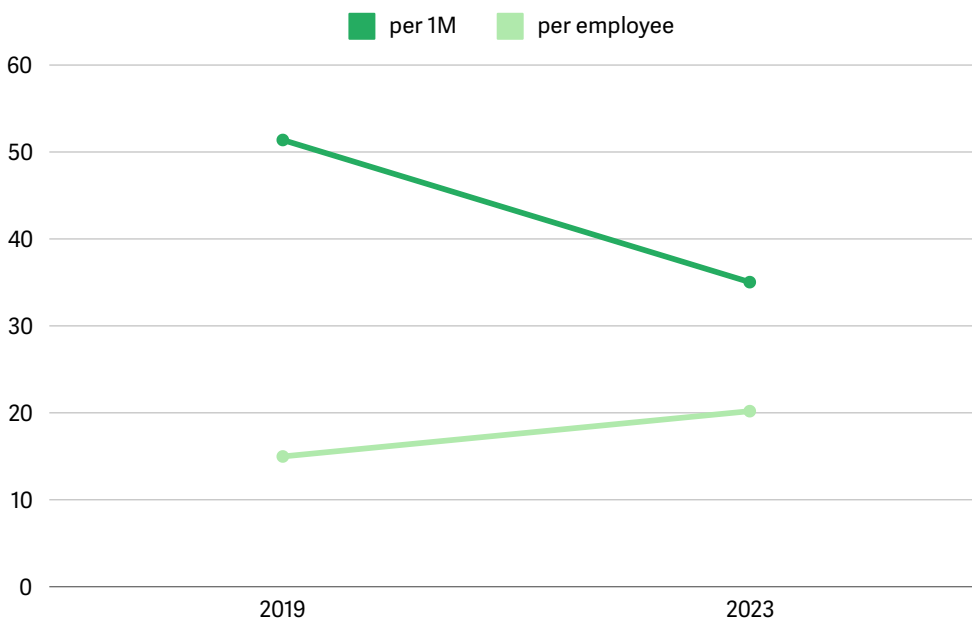
Scope 3 emissions (tCO₂e) per year



In 2023 we extended the calculation to meet SBTi's criteria to have at least 90% of the emissions included in the reporting, and we recalculated our base year 2019. Therefore, the comparison between 2019 and 2023 is significant. In 2017, 2018 and 2020, only the categories Business travel and Fuel- and energy-related activities were reported in Scope 3. Downstream leased assets were added in 2021.

The emission intensity, i.e. the total amount of emissions in relation to Paf's turnover, decreased from 51.83 tCO₂e/1M€ (2019) to 35.03 tCO₂e/1M€ (2023).

Emissions Intensity (tCO₂e) per 1M revenue & per employee





Scope 1

28.2 tCO₂e

11,208.50 l
fuel used

148,491 MWh
solar energy produced

The climate impact within Scope 1 accounts for 28.2 tonnes tCO₂e corresponding to 0.5% Paf's calculated climate impact. Our Scope 1 consists mainly of emissions from fuel that are used in our car fleet (mobile combustion).

Compared to the base year, there has been a significant reduction in Scope 1 climate impact, where emissions in scope 1 have decreased by 56.64%. This is also reflected in the number of kilometers driven, from 248,123 km in 2019 to 157,640 km in 2023. The emissions have decreased from 65.03 tCO₂e to 28.20 tCO₂e. The biggest reason is the ongoing switch in the car fleet, changing diesel cars to electric cars.

Our solar panels are categorized within Scope 1 emissions, despite the fact that they do not directly produce any emissions. This classification aligns with the guidelines set forth in the GHG Protocol, which requires that any direct energy sources owned or controlled by the company be reported under Scope 1 (stationary combustion).

Scope 1 emissions (tCO₂e) per year

	2019 (base year)				2023			
	Emissions (tCO ₂ e)	Energy (KWh)	Volume (liters)	Distance (km)	Emissions (tCO ₂ e)	Energy (KWh)	Volume (liters)	Distance (km)
Diesel	65.03	256,662.16	25,619.62	248,123.40	28.16	110,811.77	11,208.50	147,568.24
HVO					0.04	10,790.67	1,131.95	10,072.36
Solar PV	0	159,746,000			0	148,491,000		
Total	65.03	160,0002,662.16	25,619.62	248,123.40	28.2	148,612,602.44	12,340.45	157,640.6



Scope 2

48.7 tCO₂e

89 %
renewable energy used

Electricity 53.7%
Heating 43.3%
Cooling 0%

Our emissions from Scope 2 comes from electricity usage, cooling and heating in the offices. The climate impact from Scope 2 in 2023 based on the market-based method, accounts for 48.7 tCO₂e corresponding to 1,4% of our total climate impact. Compared to the base year Paf's Scope 2 emissions has decreased with 58.4%. A major reason for the reduction is the shift from bigger offices in Stockholm and Helsinki to coworking spaces.

Scope 2 emissions (tCO₂e) per year

	2019 (base year)	2023
Electricity	0.79	26.14
Heating	102.27	22.56
Cooling	14.27	0
Total	177.33	48.70



Scope 3

5,819.43
tCO₂e

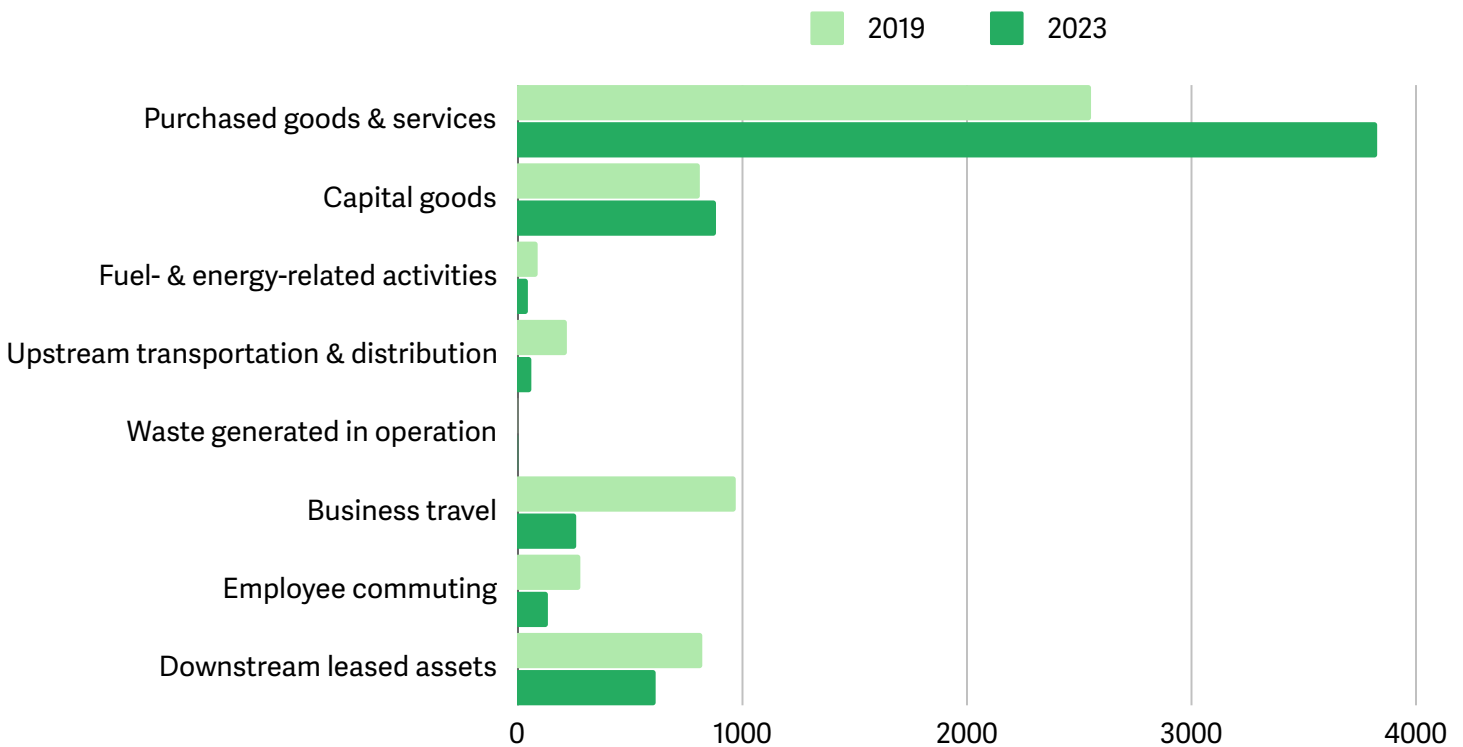
3,827 t CO₂e
from purchased
goods & services

3 million
kilometers less
traveled

As in previous years, the majority of our greenhouse gas emissions come from scope 3, representing 98.7% of our total emissions or 5,819.43 tCO₂e, which is a slight increase from 2019 (5,736.32 tCO₂e).

The scope 3 measurements were extended to include all relevant categories for Paf. These categories are purchased goods and services, capital goods, fuel and energy related activities, upstream transport and distribution, waste, business travel, employee commuting, downstream transport and distribution and downstream leased assets.

Scope 3 emissions (tCO₂e) per year



In 2023 within scope 3, most emissions came from purchased goods and services (3,827.05 tCO₂e). Within the category, 33 % of the emissions came from online advertising, 15% from purchased technology and IT equipment and 12.7% from hosting.

Other significant sources of emissions came from:

- Capital goods such as purchased gaming machines, 881.96 tCO₂e 2023 in comparison to 810.01 tCO₂e 2019.
- Downstream leased assets resulted in 613.20 tCO₂e in 2023, compared to 820.92 in 2019, which represents our game machines electricity consumption, mainly at sea.

We traveled 75% less in 2023 compared to 2019, which corresponds to a reduction of 3 million kilometers. Our employees commuting also decreased with 52%, mainly due to more remote work.



Terms and definitions

Base year	A historic year (a specific year or, in the case of a base period, an average over multiple years) against which a company's emissions are tracked over time.
Carbon credit	A carbon credit is a tradable unit that represents one metric tonne of GHG emission reductions or removals. When a carbon credit is purchased and retired for offsetting purposes, it is sometimes referred to as a carbon offset credit.
Carbon removals / GHG removals	Anthropogenic activities removing CO ₂ from the atmosphere and durably storing it in geological, terrestrial, or ocean reservoirs, or in products.
Climate Finance	SBTi refers to Beyond value chain mitigation. Investments that fall outside of the company's value chain. These often include financing renewable energy projects, reforestation efforts, and innovations that slow down climate change.
Commitment (of science-based targets)	Announcement to show intention to submit a near-term or net-zero science-based emissions reduction target in accordance with SBTi standards within a specific period.
Emissions intensity	Emissions per a specific unit, for example: tCO ₂ e/€million invested, tCO ₂ e/MWh, tCO ₂ e/ton produced, tCO ₂ e/€million company revenue
Emissions reductions	Measures that companies take to prevent, reduce, or eliminate sources of GHG emissions within or beyond their value chain. Examples include reducing energy use, switching to renewable energy, and reducing chemical fertilizer use.
Market-based accounting for scope 2	A method to quantify the scope 2 GHG emissions of a reporter based on GHG emissions emitted by the generators from which the reporter contractually purchases electricity bundled with contractual instruments, or contractual instruments on their own.
Near-term science-based target	GHG reduction targets that are in line with what the latest climate science deems necessary to limit warming to 1.5°C above pre-industrial levels and that are achieved within a 5-10 year timeframe from the date of submission to the SBTi.
Net-Zero	A Net-Zero science-based target is a emission reduction target that implies reducing scope 1, 2, and 3 emissions to zero or a residual level consistent with reaching global net-zero emissions or at a sector level in eligible 1.5°C-aligned pathways. When reaching Net-Zero the company must permanently neutralize any residual emissions at the net-zero target year and any GHG emissions released into the atmosphere thereafter.
Neutralization	Measures that companies take to counterbalance the climate impact of unabatable (i.e., residual) GHG emissions which are released into the atmosphere at and after net-zero target date through permanent removal and storage of CO ₂ from the atmosphere.
The Paris Agreement	Legally binding international treaty on climate change adopted within the United Nations Framework Convention on Climate Change (UNFCCC) in December 2015. The Paris Agreement commits participating countries to limit global temperature rise to well-below 2°C above pre-industrial levels and pursue efforts to limit warming to 1.5°C, adapt to changes already occurring, and regularly increase efforts over time.
Science-based targets (SBTs)	Corporate targets to reduce GHG emissions that are in line with what the latest climate science says is necessary to meet the goals of the Paris Agreement – to pursue efforts to limit warming to 1.5°C.
The Science Based Targets initiative (SBTi)	SBTi is a collaboration between CDP, the UN Global Compact, the World Resources Institute (WRI) and the World Wildlife Fund (WWF). The initiative was launched in the context of the 2015 Paris Agreement.

Appendix 1 - Biogenic Carbon Dioxide Emissions

Biogenic carbon dioxide emissions come from burning biomass or biofuels. The GHG protocol states that these emissions don't count towards a business's total reported emissions because the amount of carbon dioxide absorbed by the biomass equals the amount released when it's burned. However, according to The GHG protocol, biogenic emissions must still be reported separately, which we do in this appendix. Emissions of biogenic methane and nitrous oxide are covered under the GHG protocol and are included in the report.

In 2023 161.92 tCO₂e of biogenic carbon dioxide were emitted. These emissions came from biofuels used in cars, combustion of biomass for district heating on Åland, and electricity at Paf's facilities.

Biogenic Scope 1	5.09
Vehicles	5.09
Biogenic Scope 2	153.50
Electricity	6.95
Heating	146.55
Biogenic Scope 3	3.33
Downstream leased assets	3.33
Total	161.92