FPS Flexible Packaging Solutions

ISO 14064-1
GHG Emissions Report

Reporting Period: 01/01/2024 – 31/12/2024

Reporting Date: 10/07/2025

Prepared in line with GHG Protocol and ISO 14064-1

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Glossary

CH4: Methane

CO2: Carbon Dioxide

CO2e: Carbon Dioxide Equivalent

EF: Emission Factor

GHG: Greenhouse Gas

HFCs:

Hydrofluorocarbons

N2O: Nitrous Oxide

PFCs: Perfluorocarbons

SF6: Sulfur Hexafluoride

NF3: Nitrogen Trifluoride

Emission Reduction: The elimination, reduction, or avoidance of greenhouse gas emissions.

Emission Factor or Coefficient: A coefficient used to convert the impact of an activity or the production or use of a product into units of CO_2e. Emission factors are typically expressed as "tons CO_2e/unit of activity".

Carbon Footprint: Sum of all greenhouse gas emissions, typically measured in carbon dioxide equivalents (CO_2e), caused by an individual, organization, event, or product over a given time frame.

Carbon Offsetting: Carbon offsetting is a process that involves a reduction in, or removal of, carbon dioxide or other greenhouse gas emissions from the atmosphere to compensate for emissions made elsewhere.

Carbon Dioxide Equivalent (CO_2e): A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential (GWP), expressed as the amount of CO_2 that would have the equivalent impact on global warming.

Data Holders: FPS Colleagues who are responsible for tracking, holding and providing the relevant activity data for each emission sources.

Executive Summary

The greenhouse gas inventory report for FPS covers the period of January 2024 to December 2024. Throughout this report, "emissions" refers to greenhouse gas emissions. The report shows that FPS's total emissions for the reporting period are 361,169 metric tons of CO_2-equivalent[1]. The primary contributor to FPS's emissions is Purchased PP granulates, accounting for 31% of the total emissions.

The report also includes information on the methods used to measure the emissions. We use the ISO 14064-1 standard for quantifying and reporting emissions and follow the GHG Protocol[2] Corporate Accounting and Reporting Standard (basis of ISO 14064-1) for estimation of emissions from various sources. Overall, this report demonstrates FPS's commitment to transparency and accountability in measuring and reducing its negative climate externalities, i.e., greenhouse gas emissions.

FPS's total carbon footprint for January 2024 - December 2024 is 361,169 tons of CO_2e. Table 1 and Table 2 present the categorization of emissions by GHG Protocol[3] Scopes and ISO 14064-1 Categories, respectively.

Table 1. FPS's Greenhouse Gas Emissions by Scope

Reporting Period	01/01/24 - 31/12/24
Scope 1 Direct emissions (tCO_2e)	1,693
Scope 2 Indirect emissions (tCO_2e)	24,300
Scope 3 Value chain emissions (tCO_2e)	335,176
Total Emissions (tCO_2e)	361,169

[1]A carbon dioxide equivalent or CO_2 equivalent, abbreviated as CO_2-eq is a metric measure used to compare the emissions from various greenhouse gases based on their global-warming potential (GWP), by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential.

[2] World Resource Institute – GHG Protocol

[3] The GHG Protocol categorizes corporate emissions into 3 categories: Scope 1 (direct emissions), Scope 2 indirect emissions), Scope 3 (value chain emissions).

Table 2. FPS's Greenhouse Gas Emissions by Category

Reporting Period 01/01/24 - 31/12/24

Category 1 Direct GHG emissions (tCO_2e)	1,693
Category 2 Indirect GHG emissions from purchased energy (tCO_2e) - Location Based	24,300
Category 2 Indirect GHG emissions from purchased energy (tCO_2e) - Market Based	24,199
Category 3 Indirect GHG emissions from transportation (tCO_2e)	30,641.18
Category 4 Indirect GHG emissions from products used by the organization (tCO_2e)	303,887.55
Category 5 Indirect GHG emissions associated with the use of products from the organization (tCO_2e)	624.93
Category 6 Indirect GHG emissions from other sources (tCO_2e)	22.75
Total Emissions (tCO_2e)	361,169

Introduction

Climate change, driven by human activities such as fossil fuel combustion and deforestation, presents a critical global challenge. These actions have substantially increased greenhouse gas emissions, contributing to rising global temperatures, altered weather patterns, sea level rise, and various adverse environmental and societal impacts.

In light of this, numerous corporations are actively engaging in initiatives to mitigate their greenhouse gas emissions and enhance sustainability. These efforts range from adopting renewable energy certificates to offset electricity-related emissions, implementing energy- efficient lighting systems, investing in carbon offset initiatives like reforestation or renewable energy, and promoting sustainable practices among employees.

The ISO 14064-1 standard offers a comprehensive framework for organizations to measure, report, and quantitatively verify their greenhouse gas emissions. This standard enables FPS to effectively manage its emissions, ensuring accurate, reliable, and transparent communication with stakeholders. Adherence to ISO 14064-1 underscores FPS's dedication to environmental responsibility. It also provides a solid basis for setting and achieving emission reduction goals and facilitates reporting in national or international emissions trading systems.

Company Name	FPS Flexible Packaging Solutions
Headquarters	The Netherlands
Sector	Packaging Manufacturing

Table 3. Point of Contacts

Name	Title	Email
Çağla Aksoy	Global Sustainability Director	cagla.aksoy@fps.com
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1. Reporting Carbon Footprint

1.1. Objective

Organizations are progressively evaluating and managing their climate impacts to comply with national and international climate policies, engage stakeholders, and maintain market competitiveness. Inadequate management and reporting of greenhouse gas emissions could lead to significant legal, financial, and reputational consequences. This includes potential challenges such as reduced access to favorable financing, carbon taxes, penalties, and business losses due to adverse public relations. It is essential for organizations to effectively calculate and manage their emissions to mitigate these risks.

Distinct objectives, crafted to drive the composition of this report for FPS:

- Deliver a detailed quantification of FPS's greenhouse gas emissions to grasp the breadth of their environmental impact.
- Showcase FPS's dedication to sustainability and responsible environmental stewardship through adherence to recognized GHG reporting standards.
- Pinpoint and analyze emission-intensive areas within FPS operations, providing a data-backed foundation for setting targeted reduction goals.
- Anticipate and align with forthcoming environmental regulations, ensuring proactive compliance.
- Cultivate climate change, energy efficiency, and sustainability consciousness among FPS's workforces.
- Initiate the disclosure of FPS sustainability initiatives and achievements to relevant stakeholders.

Anticipated advantages of this study for FPS include:

1.1.1. Internal Benefits

- Enhanced transparency around FPS's emission profiles, resource usage, and energy consumption.
- Recognition of key areas for emissions reduction and environmental

performance enhancement.

- Establishment of substantial emissions reduction goals and guidance for strategic investment in green technologies.
- Formation of a comprehensive GHG Management Plan to steer FPS's sustainability endeavors.
- Strengthening of internal commitment to FPS's sustainability agenda.

1.1.2. External Benefits

- Adherence to ISO 14064 standards affirming FPS's commitment to open and responsible environmental practices, potentially enhancing stakeholder trust and improving FPS's reputation in the market.
- Reliable emissions data provision, enabling FPS to actively engage stakeholders and transparently report on climate action.
- Affirmation of FPS's alignment with global standards, enhancing its competitive edge through transparent sustainability reporting.

1.2. Scope

The ISO 14064-1 Standard classifies an organization's greenhouse gas emissions into six distinct categories.

Category 1: Direct Greenhouse Gas Emissions

These encompass emissions from sources directly owned or controlled by the organization. This includes emissions from:

- Vehicles used in logistics,
- Natural gas for heating,
- Diesel for emergency generators and fire pumps,
- Fuel consumption in organization-owned or leased vehicles,
- Fuel for off-road work vehicles (e.g., forklifts),
- Fire extinguishers and industrial cylinders maintenance and use,
- Refrigerant gas leaks in air conditioning maintenance etc.

Category 2: Indirect Greenhouse Gas Emissions from Imported Energy

These are emissions from the generation of purchased electricity, steam and heat or cooling consumed by the organization:

- Emissions from electricity supplied by the power grid,
- Emissions from purchased steam and heat, cooling.

Category 3: Indirect GHG Emissions from Transportation

These are emissions resulting from the organization's activities, originating from sources not owned or controlled by the organization:

- Business travel emissions,
- Emissions from procured energy,
- Emissions from employee commuting.

Category 4: Indirect GHG Emissions from Products Used by the Organization

These emissions relate to products used within the organization:

- Emissions from outsourced transportation,
- Emissions from the production of purchased products, raw materials, and capital goods,
- Emissions from transportation and disposal of operational wastes.

Category 5: Indirect GHG Emissions Associated with the Use of Products from the Organization

This category involves emissions resulting from the end use of goods and services sold by the organization, covering a wide range of consumer use-phase emissions.

Category 6: Indirect Emissions from Other Sources

The purpose of this category is to capture any organization specific emission (or removal) that cannot be reported in any other category. In consequence, it is the organization's responsibility to define the content of this particular category.

This report details the greenhouse gas emissions of FPS across Category 1, Category 2, Category 3, Category 4, Category 5 and Category 6 for the period January 2024 and December 2024. It is prepared in alignment with the International Standards Organization's (ISO) principles, it adheres to the ISO 14064-1: 2018 standard for the calculation and reporting of greenhouse gas emissions.

1.3. Reporting Greenhouse Gas Emissions in line with ISO 14064-1

ISO 14064-1 outlines the guidelines and rules for creating, managing, and reporting greenhouse gas inventories at the organizational level. The standard includes instructions for establishing limits (i.e., operational boundaries) on greenhouse gas emissions, calculating the organization's emissions, identifying ways to reduce emissions, and providing recommendations for specific actions to improve greenhouse gas management. It also encompasses procedures for inventory analysis, quality assurance, reporting, internal auditing, and verification obligations. The ISO 14064 Standards Series comprises three integral parts:

ISO 14064-1: Greenhouse gases - Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals. This part of the standard provides the general principles and requirements for an organization to measure, report, and verify its greenhouse gas emissions.

ISO 14064-2: Greenhouse gases - Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements. This part of the standard guides the quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements resulting from a project.

ISO 14064-3: Greenhouse gases - Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions. This part of the standard guides the validation and verification of greenhouse gas assertions, including the principles, requirements, and guidelines for conducting validation and verification of greenhouse gas emissions and removals, as well as the qualification of validators and verifiers.

Adherence to the ISO 14064 standard offers numerous benefits for FPS, such as:

- **Compliance with regulations:** Meeting national and international legislative and reporting mandates related to greenhouse gas emissions.
- **Transparency and credibility:** Demonstrating environmental responsibility and openness, bolstering reputation and trust among consumers, investors, and stakeholders.
- **Identifying areas for improvement:** Recognizing opportunities to reduce emissions and enhance environmental performance, potentially leading to cost savings.
- **Setting and achieving emissions reduction targets:** Facilitating the establishment and realization of sustainability objectives and preparing for prospective regulations.
- **Compliance with international standards:** Ensuring that emission data is transparent, consistent, and comparable across organizations worldwide.
- **Improving efficiency and reducing costs:** Identifying and mitigating emissions can lead to improved operational efficiency and reduced expenses related to energy use and waste management.

The principles of greenhouse gas calculation and reporting outlined in the ISO 14064- 1 standard are the foundation for accurately and fairly determining information related to greenhouse gases. These principles include:

1. Relevance: The emissions data should be relevant to FPS and its operations, and should be relevant to the intended use of the data.

2. Completeness: The emissions data should be comprehensive and cover all relevant sources, activities, and locations within FPS.

3. Consistency: Annual inventory of emission trends be calculated consistently across all years, using the same method and data sources wherever possible. The aim is to accurately represent the actual year-to-year variations in emissions or removals, without being impacted by changes caused by variations in methodology.

4. Accuracy: The emissions data should be accurate, and the methods used to calculate the emissions should be appropriate for the level of precision required. Greenhouse gas inventories should not contain either over- or under- estimates, to the extent that can be reasonably determined.

5. Transparency: The emissions data should be transparent, and the methods and assumptions used to calculate the emissions should be clearly described so that all involved can understand how the inventory is compiled.

1.4. Base Year

The base year refers to a specific historical year chosen as a reference point for an organization to measure and compare its greenhouse gas (GHG) emissions over time per the ISO 14064 standard. This year serves as a benchmark against which emission reductions or increases are assessed in subsequent reporting periods, aiding in the tracking of progress towards GHG reduction targets. For FPS, the base year has been established as 2024.

2. Methodology

2.1. Greenhouse Gas Inventory Boundaries

2.1.1. Organizational Boundaries

Determining the organizational boundaries is a foundational step in the ISO 14064-1 greenhouse gas (GHG) reporting process, involving the delineation of the direct and indirect emissions associated with the entity. This decision should align with the inventory's objectives, the overarching goals of the organization, and the availability of data. The boundaries must be explicitly defined within the inventory report for clarity. In the context of ISO 14064-1 greenhouse gas (GHG) measurement and reporting, the organizational boundary can be defined using two different approaches: the control approach and the equity share approach.

- Control approach: This approach includes all direct emissions from sources that are owned or controlled by the organization. The organization accounts for all GHG emissions and/or removals from facilities over which it has financial or operational control.
- Equity share approach: This approach is used when an organization shares ownership or control of a source or activity with one or more other organizations. Emissions are included in the inventory based on the organization's proportionate share of ownership or control. The organization accounts for its portion of GHG emissions and/or removals from respective facilities.

FPS has defined its organizational boundaries based on the operational control approach for carbon footprint calculations from January 2024 to December 2024.

Table 4. Organizational Boundaries

Country	City	Site	Address
Belgium	Belgium	FPS Belgium	Lodewijk de Raetlaan 31, Izegem
Belgium	Belgium	FPS Benelux	Ambachtenstraat 33 Izegem, 8870 - Belgium
Chile	Chile	FPS Chile	Avenida Ventisquero 1204, Bodega 12 Renca, Santiago, Chile
China	Changzhou	FPS China - Changzhou	8 Tenglong Rd, Wujin Economic Development Zone Changzhou, Jiangsu, China 213149
China	Ji'an	FPS China - Ji'an	No. 36, Jinluo Road,Huayao Technology Industrial Park, Jizhou Industrial Park Jian
France	France	FPS France	ZA Ste Elisabeth 71300 Montceau les mines - France
Germany	Germany	FPS Germany	Industriestraße 55-57 48432 Rheine, Germany
Netherlands	Amstelveen	FPS HQ	Van Heuven Goedhartlaan 7a Amstelveen, 1181LE - The Netherlands
India	Mumbai	FPS India	Atlanta Building, Vinay K Shah Marg, Nariman Point, Mumbai
Ireland	Ireland	FPS Ireland	C/O DB Schenker Building, Unit 3, Harbour Point Hse, Harbour Point Bus Pk, Little Island Cork, T45 Y228 Ireland
Mexico	Mexico	FPS Mexico	Care. Central Km 612, Col. Olivar de las Ánimas, Matehuala SLP
Romania	Negresti	FPS Romania - Negresti - Big Bag Production	Strada Victoriei No.3, Negresti Oas, 445200, Satu Mare, Romania
Romania	Negresti	FPS Romania - Negreşti - Reconditioning (Rebu)	Strada Victoriei No.3, Negresti Oas, 445200, Satu Mare, Romania
Romania	Negresti	FPS Romania - Negreşti - Recycling	Strada Victoriei No.3, Negresti Oas, 445200, Satu Mare, Romania
Romania	Botosani	FPS Romania - Botosani	Strada Victoriei No.3, Negresti Oas, 445200, Satu Mare, Romania

Türkiye	İstanbul	FPS Turkey - Hadımköy	Yeşilbayır Mahallesi,Hadımköy Istanbul Yolu Caddesi, No:134 Hadımköy, Istanbul Türkiye 34555
Türkiye	İstanbul	FPS Turkey - Samandıra	Fatih Mah. Fabrika Cad. No: 10 Sacaktepe Istanbul Türkiye 34885
Türkiye	İstanbul	FPS Turkey - Sultanbeyli	Adil Mh. Mehmet Zahid Kotku Cd. Danişment Sk No:12 Sultanbeyli İstanbul, Türkiye 34935
United Kingdom	Yorkshire	FPS UK	Dalton Airfield Industrial Estate Dalton Thirsk North Yorkshire YO7 3HE UK
United States of America	Houston	FPS USA	14200 Hollister Rd, Houston, TX, USA
Ukraine	Ukraine	FPS Ukraine	1/154 Promyslova str. Zhytomyr, Ukraine
Vietnam	Vietnam	FPS Vietnam	Lot 1/10 Street No:7 Giang Dien Industrial Park, Trang Bom District

2.1.2. Reporting Boundaries

FPS has determined the greenhouse gas emissions and removals related to its activities and established and documented the reporting boundaries. The greenhouse gas inventory scopes included in this report are as follows:

- **Category 1**
- **Category 2**
- **Category 3**
- **Category 4**
- **Category 5**
- **Category 6**

We provide a detailed categorization of FPS's activities and the corresponding emissions in the following sections.

- **Biomass Combustion**

During the year 2024, under the operations of FPS, no incidents of biomass combustion were recorded. Consequently, it does not constitute a part of the emission sources.

- **Greenhouse Gas Reduction and Avoidance**

The activities related to the reduction or avoidance of greenhouse gases were not conducted throughout the reporting period.

2.1.3. Uncertainty Analysis

The process of estimating uncertainties in the greenhouse gas emissions inventory for FPS has incorporated two fundamental types of uncertainty. This involves a combined evaluation of the uncertainty in each emission source's activity data and the emission factor uncertainty, leading to the calculation of total uncertainties. For these calculations, methodologies outlined in the IPCC and calculation tables developed by the GHG Protocol have been employed.

For 1/2024 - 12/2024, the total uncertainties have been calculated while maintaining an acceptable level of confidence. There is ongoing development of published standards and forms to enhance the data collection methodology; this aims at ensuring the collection of reliable data and the reduction of uncertainty levels. The total uncertainty for FPS has been assessed as good.

2.1.4. Greenhouse Gas Inventory Quality Management System

This report, prepared following the principles of ISO 14064-1, falls under the greenhouse gas management system and is aligned with the "Greenhouse Gas Information Management Procedure" and the "Greenhouse Gas Inventory Calculation Procedure."

2.1.5. Verification of the Greenhouse Gas Inventory

The "Greenhouse Gas Inventory Report" for FPS, which encompasses both direct and indirect greenhouse gas emissions resulting from FPS’s operations between January 1, 2024, and December 31, 2024, has been verified—at a reasonable level of assurance for Scope 1 and Scope 2 emissions—by an independent third-party certification body. The verification activities for the "FPS – Greenhouse Gas Inventory Report for the year 2024" were conducted by TUV SUD.

2.2. Quantification of GHG Emissions and Removals

2.2.1 Identification of GHG Sources and Sinks

ISO 14064 specifies that an organization should identify all the sinks and sources of GHG emissions that are within the organizational boundary. This includes sources of direct emissions, such as the combustion of fossil fuels in boilers or vehicles, and sources of indirect emissions, such as purchased electricity or steam. FPS’s greenhouse gas sources and sinks have been defined according to all activities within the boundaries of the organization and the reporting scope of this study.

2.2.2 Selection of Calculation Methodology

To estimate FPS's emissions, a "calculation methodology" is utilized, which encompasses the multiplication of activity data by greenhouse gas (GHG) emission or removal factors. Below is a detailed representation of this methodology in the form of a general equation.

2.2.3 Data Selection and Collection Used for Quantification of GHG Emissions

Once the activities within the organization's greenhouse gas boundaries are selected, the activity data collected from the field have been consolidated using Azalt: ESG Software, which allows for ongoing entry of activity data by the responsible team members overseeing greenhouse gas management. The accuracy and consistency of the results are maintained at the highest possible level by verifying the collected data with concrete evidence, such as invoices and meter readings. In addition to the evidence documents, the activity data are recorded in the controlled web-based environment of the Azalt: ESG Software. The entered data have been reviewed for completeness, consistency, and accuracy by the authorized official responsible, prior to being converted into this report.

2.2.4 Selection/ Development of GHG Emission or Removal Factors

The selection of greenhouse gas emission or removal factors is guided by data obtained from the UK Government GHG Conversion Factors for Company Reporting, 2023, IPCC Sixth Assessment Report and the WRI's GHG protocol.

2.2.5 Calculation of GHG Emissions and Removals

All data have been calculated using the web-based Azalt: ESG Software. FPS calculates GHG emissions and removals in terms of tonnes of CO_2 equivalent, following the selected quantification approach. This is done by multiplying the activity data of each emission source by the corresponding GHG emission factors to determine FPS's carbon footprint. Apart from special cases, the following general equation is used to estimate the GHG emissions for a typical activity:

Total GHG emissions (tCO_2e) = Σ Total consumption (e.g., kg) × Emission factor (e.g., kg CO_2e/kg)

3. Greenhouse Gas Emissions Inventory

Table 5. Greenhouse Gas Emissions Inventory by Scope

Emissions (tCO_2e)	CO_2	CH_4	N_2O	Total Emissions (tCO_2e)
Scope 1	1,225.73	3.72	15.32	1,693
Scope 2	0.00	0.00	0.00	24,300
Scope 3	2,364.66	2,218.88	2,219.87	335,176.41
Total	3,590.39	2,222.60	2,235.19	361,169

Figures 1 and 2 demonstrate FPS's total carbon footprint across scopes. A significant portion of FPS's carbon footprint stems from Scope 3 emissions, and accounts for 92.81% of FPS's carbon footprint, with a value of 335,176 tCO_2e in 2024. Scope 2 emissions account for the second-highest share of FPS's emissions and account for 6.73% of FPS's carbon footprint, with a value of 24,300 tCO_2e in 2024. Meanwhile, Scope 1 emissions account for a smaller portion of FPS's total emissions. Scope 1 emissions account for the remaining 0.47% of FPS's carbon footprint, with a value of 1,693 tCO_2e. Figure 2 displays the total greenhouse gas emissions arising from FPS's activities within its organizational and reporting boundaries in 1/2024 - 12/2024.

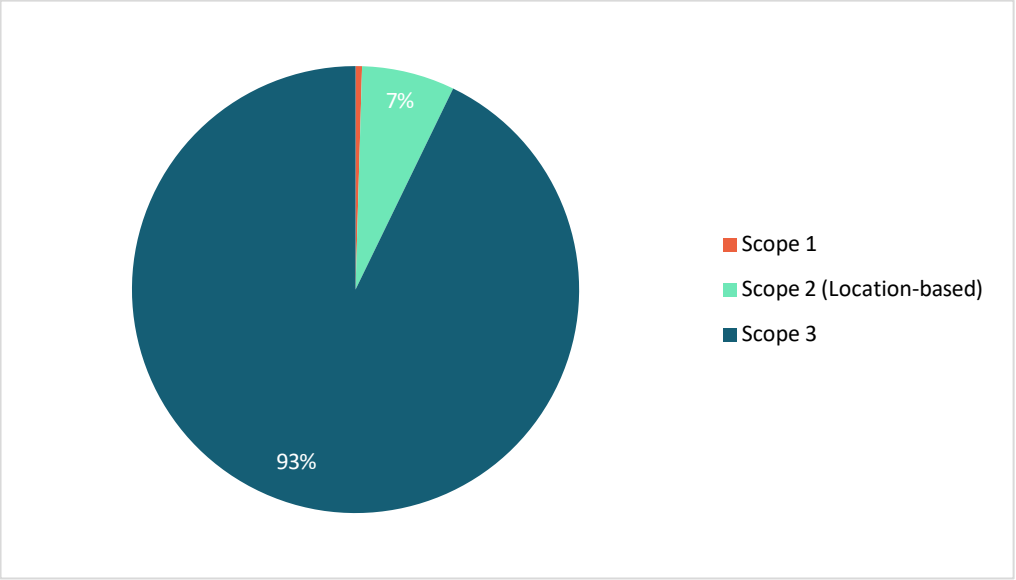

Figure 1. Share of GHG Emissions across Scopes

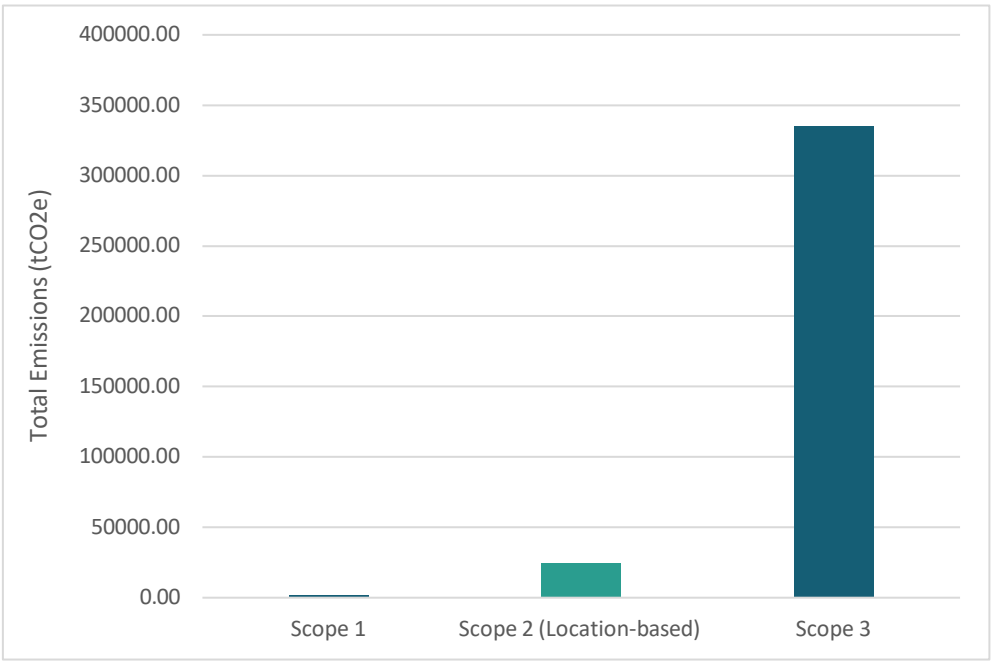

Figure 2. GHG Emissions across Scopes

Scope 1 emissions refer to direct emissions from sources that FPS owns or controls, such as on-site combustion of fossil fuels. Natural Gas (Gross CV) contributes the highest share of FPS's Scope 1 emissions and accounts for 25.29% of the Scope 1 emissions which correspond to 425.47 tCO_2e. Diesel (On Road) emissions account for 17.74% of the Scope 1 emissions which corresponds to 298.42 tCO_2e. Petrol (On Road) emissions account for 10.35% of the Scope 1 emissions which corresponds to 174.11 tCO_2e. Figure 3 illustrates environmental footprint shares of Scope 1 emissions across campaigns.

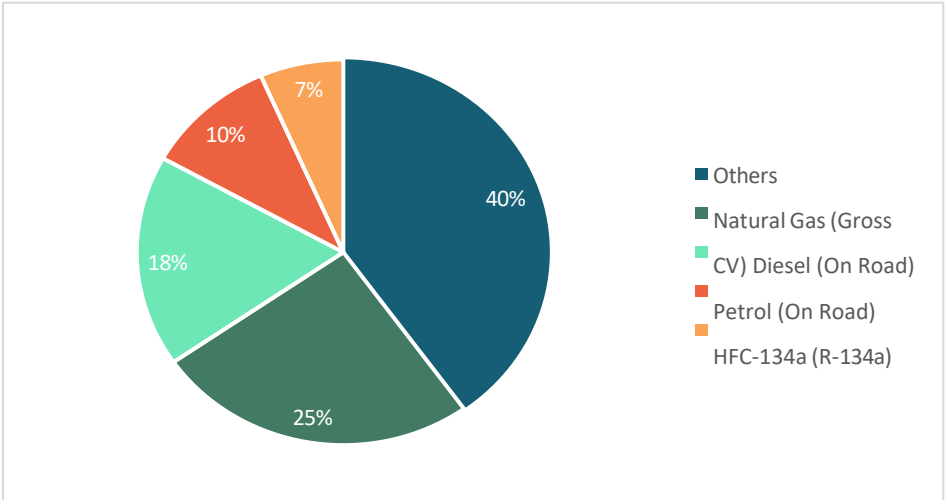

Figure 3. Environmental Footprint Shares of Scope 1 Emissions

Scope 2 emissions refer to indirect greenhouse gas emissions that result from the generation of purchased electricity, consumed by FPS. Scope 2 emissions are generated outside FPS's organizational boundary but are still associated with its operations. Electricity contributes the highest share of FPS's Scope 2 emissions and accounts for 59.41% of the Scope 2 emissions which correspond to 14,432.85 tCO_2e. Electricity (China) emissions account for 21.70% of the Scope 2 emissions which corresponds to 5,271.87 tCO_2e. Electricity (Romania) emissions account for 13.39% of the Scope 2 emissions which corresponds to 3,253.03 tCO_2e. Figure 4 illustrates environmental footprint shares of Scope 2 (Location-based) emissions across campaigns.

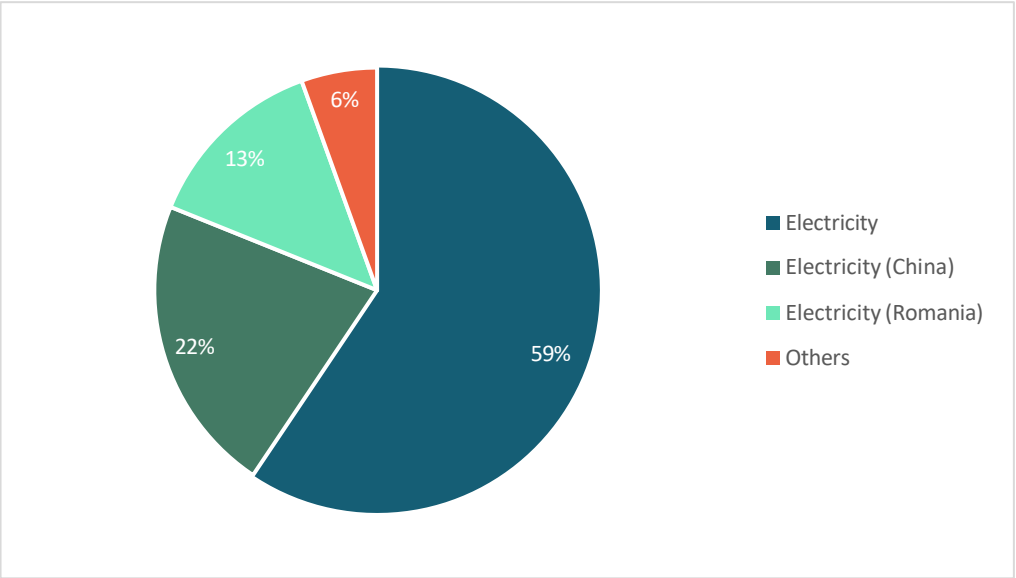

Figure 4. Environmental Footprint Share of Scope 2 Emissions

Scope 3 emissions are indirect greenhouse gas emissions that result from FPS's value chain, including its suppliers, customers, and other external stakeholders. Raw materials/granulates contributes the highest share of FPS's Scope 3 emissions and accounts for 34.63% of the Scope 3 emissions which correspond to 105,096 tCO_2e.

Table 6 shows FPS sites emissions breakdowns.

Table 6. FPS's Emissions Breakdown by Sites

FPS Site	GHG Emission (tCO2e)			
	Scope 1	Scope 2	Scope 3	Total
FPS Turkey Hadimkoy	111.56	6,846.07	53,055.71	60,013.34
FPS Turkey Sancaktepe	567.77	5,687.93	45,083.85	51,339.55
FPS Romania Negresti	48.69	3,145.20	4,387.32	7,581.21
FPS China Changzhou	49.63	3,922.76	40,558.87	44,531.26
FPS China Ji'ân	4.14	1,349.11	14,066.62	15,419.86
FPS Germany	193.03	58.34	21,643.89	21,895.25
FPS USA	47.86	27.93	6,286.44	6,362.23
FPS UK	91.87	0.00	42,786.70	42,878.57
FPS Ukraine	231.07	350.91	27,900.57	28,482.54
FPS Benelux	13.21	0.00	1,518.25	1,531.45
FPS Mexico	9.25	705.85	6,139.77	6,854.87
FPS France MLM	17.3	8.54	29,735.38	29,761.22
FPS Turkey Sultanbeyli	118.93	1,898.86	3,551	5,568.79
FPS Vietnam	0.68	150.32	18,562.92	18,713.91
FPS Chile	1.56	1.98	2,973.53	2,977.06
FPS Romania Botosani	110.52	107.82	10,147.63	10,365.98
FPS Recycling	28.85	0.00	154.00	182.85
FPS Ireland	11.42	0.00	6,365.52	6,376.94
FPS Rebu	0.13	0.00	164.25	164.38
FPS India	4.05	2.18	88.91	95.14
FPS Belgium	15.29	2.73	0.44	18.47
FPS HQ	5.36	28.4	4.87	38.64

4. References

1. WRI's GHG Protocol.

2. 2006 IPCC Guidelines for National Greenhouse Gas Inventories -Volume 2-Chapter 1 Introduction-Table 1.2 Default Net Calorific Values (NCVs) and Lower and Upper Limits of the 95% Confidence Int.

3. 2006 IPCC Guidelines for National Greenhouse Gas Inventories-Volume 2-Chapter 2 Stationary Combustion -Table 2.4 Default Emission Factors for Stationary Combustion in the Commercial Institute.

4. 2006 IPCC Guidelines for National Greenhouse Gas Inventories-Volume 2-Chapter 3 Mobile Combustion -Table 3.2.1. Road Transport Default CO2 Emissions Factors and Uncertainty Ranges.

5. 2006 IPCC Guidelines for National Greenhouse Gas Inventories -Volume 2-Chapter 3 Mobile Combustion -Table 3.2.2 Road Transport N20 and CH4 Default Emission Factors and Uncertainty Ranges.

6. 2006 IPCC Guidelines for National Greenhouse Gas Inventories-Volume 2-Chapter 3 Mobile Combustion-Table 3.3.1 Default Emission Factors for Off-Road Mobile Sources and Machinery.

7. IPCC Sixth Assessment Report (AR6).

8. GHG Protocol-Calculating HFC and PFC Emissions from the Manufacturing Installation, Operation and Disposal of Refrigeration & Airconditioning Equipment (Version 1.0) Table 1 GWP of Common Greenhouse Gases and Refrigerants.

9. AR6 WGI Report – List of corrigenda to be implemented.

ANNEX I: FPS GHG INVENTORY DESCRIPTION

Direct GHG Emissions	
Direct Emissions from Stationary Combustion	
Natural Gas	a) Natural gas consumptions throughout the reporting period are recorded by authorized people b) Values are compared with the monthly invoices issued by the natural gas supply company, and the monthly data are consolidated by the data holder in the calculations made at the end of the year. c) Activity data (m^3 or kWh) is multiplied by natural gas density values and included in the calculation in tons.
Direct Emissions from Mobile Combustion	
Stationary Combustion Diesel	a) Diesel consumption amounts are obtained from fuel stock tracking and invoices and internal records of purchased fuels and are consolidated by the data holder. b) Activity data (L) is multiplied by the diesel density values and included in the calculation in tons.
Stationary Combustion Other Emission Sources	a) Consumption of other kinds of emission sources such as LPG, and propane is obtained from the invoices and internal system records of purchased fuels and are consolidated by the data holder. b) Activity data is included in the calculation in liters or tons.
Mobile Combustion Diesel	a) Diesel consumption amounts are obtained from the relevant invoices and vehicle identification documents and consolidated by the data holder. b) All data is provided in litres (l) and the Fuel-based method was generally used, where this was not possible, the Distance-based method was chosen. c) Activity data (L) is multiplied by the diesel density values and included in the calculation in tons.
Mobile Combustion Petrol	a) Petrol consumption amounts are obtained from the relevant invoices and vehicle identification documents and consolidated by the data holder. b) Activity data (L) is multiplied by the petrol density values and included in the calculation in tons.
Mobile Combustion LPG	a) LPG consumption amounts are obtained from the relevant invoices and vehicle identification documents and consolidated by the data holder. b) Activity data (L) is multiplied by the LPG density values and included in the calculation in tons.
Fugitive Emissions from Anthropogenic Activities	
Refrigerant and Fire Extinguishing Gas Leakages	a) Inventory is taken of all devices and fire extinguishing equipment/systems within the boundaries of the facility containing refrigerant gas by device type, location within the facility, gas capacity in kg and gas type. All information is consolidated by the data holders. b) The invoices, dispatch notes, or filling receipts for all cooling has and fire extinguishing devices that have been refilled or undergone maintenance are shared by the relevant unit as proof documents. c) Information regarding the source of the CO_2 contained within CO_2 based fire extinguishing devices is verified in writing by the supplier and is shared by the kg. For fire extinguishing system containing any substance other than CO_2 and FM200, the SDS document(s) pertaining to such information is shared by the kg. d) During the calculations mostly Simplified Material Balanced Method were used, otherwise Screening Method was chosen.
Anthropogenic Biogenic GHG Emissions	The biogenic emissions resulting from human activities should be included in the GHG inventory. b) If there is biomass consumption/burning that creates greenhouse gas emissions within the boundaries of the facility, the consumption data is followed by the relevant persons. c) Purchased amount (kg or ton) are tracked from the relevant invoices and consolidated by the relevant unit. During the year 2024, under the operations of FPS, no incidents of biomass combustion were recorded. Consequently, it does not constitute a part of the emission sources.

Process Emissions	a) Any emissions besides burning emissions resulting from reactions between substances and/or the transformation of elements/substances, including chemical or electrolytic reduction of ores, thermal decomposition of substances, and the transformation of substances for use as raw material or end-product, are defined as process emissions. b) Process emissions resulting from chemical reactions and/or thermal processing are included in the calculations. c) There is no process emissions for FPS in the calculation year.
Energy Indirect Emissions	
Electricity	a) Total electricity consumption values throughout the reporting period are recorded by data holders. b) Values are compared with the monthly invoices issued by the electricity supply company, and the monthly data are consolidated by the data holder in the calculations made at the end of the year. c) The consolidated activity data representing the total consumption by the FPS are included in the calculation in kilowatt hours (kWh). d) A location-based method reflects the average emissions intensity of grids on which energy consumption occurs (using mostly grid-average emission factor data). e) A market-based method reflects emissions from electricity that companies have purposefully chosen (or their lack of choice). It derives emission factors from contractual instruments, which include any type of contract between two parties for the sale and purchase of energy bundled with attributes about the energy generation, or for unbundled attribute claims. f) Mostly grid average tariffs were used, otherwise national residual tariffs were used. g) Total electricity consumption is calculated by multiplying the T&D losses, Well-to-Tank generation, and Well-to-Tank (T&D) emission factors.
Indirect Emissions	
Indirect GHG emissions from transportation	
Transportation of Raw Materials	a) Emissions from transportation of all raw materials, chemicals and packaging materials purchased by the FPS are included in the inventory accounting. b) A data collection template was provided for all FPS sites. c) FPS USA provided emissions already calculated by the logistics partners and were directly inputted into the model without further modifications or calculations d) Based on the recorded data, quantity-based approaches were used. e) The resulting activity data is included in the calculation in ton.km. f) Duplicate accounts were prevented by checking the transportations between FPS entities. g) When given quantity-based data, if distances were not already provided, these were computed assuming transport within countries capital cities, and respecting the mode of transportation provided by FPS. Having all distances and transported weights per journey, emissions were calculated multiplying the by an emission factor. Emission factors varied upon transport modality and the assumptions used to determine them are listed within the model. h) GLEC Framework was taken as reference for transport emissions calculations.
Transportation of Capital Goods	a) Transport indirect emissions of all fixed assets (capital goods) purchased by the reporting FPS are included in the inventory accounting. b) The weight of capital goods, mode of transportation, and distance information is shared by the relevant unit. c) The activity data is included in the calculation in tons.km.

Transportation of Products	a) Information regarding the weight (kg) of products, mode of transportation and distance are shared by the relevant unit of the FPS. b) If distances were not already provided, these were computed assuming transport within countries capital cities, and respecting the mode of transportation provided by FPS. Having all distances and transported weights per journey, emissions were calculated by multiplying the by an emission factor. Emission factors varied upon transport modality and the assumptions used to determine them are listed within the model. c) The resulting activity data is included in the calculation in ton.km. d) Duplicate accounts were prevented by checking the transportations between FPS entities. e) If distances were not already provided, these were computed assuming transport within countries capital cities, and respecting the mode of transportation provided by FPS. Having all distances and transported weights per journey, emissions were calculated by multiplying the by an emission factor. Emission factors varied upon transport modality and the assumptions used to determine them are listed within the mode. f) GLEC Framework was taken as reference for transport emissions calculations.
Employee Commuting	a) The routes used in the relevant reporting year, the distance travelled (km) and the number of trips by the transport arranged by the FPS for the commutes of their employees are shared by the relevant unit. b) Secondary data is used to determine the average commuting distance per person in each country. This is based on UN classifications of countries, and an average mode of transport is selected based on the income and infrastructure of each country. c) For work from home (WFH) emissions, an average emission intensity by region accounted for electricity and natural gas from home working is accounted for based on the average number of days a geography/headcount type worked from home during the year. d) The headcount of the reporting company by country then determines that average emissions associated with their employee commute. This has been multiplied by the BEIS average UK commuting factors to calculate emissions. e) The activity data is included in the calculations as in km.
Business Travel	a) Relevant BEIS emission factor was applied to business travel data, based on mode of transport, class of travel and distance (km). c) Spend based data consists of spend in local currency. This was first converted to EUR, and the relevant EEIO emission factor was applied to this data, simply based on the mode of transport. d) Number of days and number of person/room data was collected for hotel stays. When available, country-specific emission factors were used. When it is not available for some countries, the global average emission factor was used, as the country of stay was not available in the data provided.
Transportation of Wastes	a) Emissions from transportation of wastes generated in the activities within the included facilities are included in the inventory accounting. b) Information regarding the weight of waste generated and distance travelled to waste processing/disposal plants, as well as the waste declaration forms are shared by the data holders. c) The resulting activity data is included in the calculation in tons.km. d) The applicable BEIS end-of-life emission factor was applied to each quantity of waste to calculate the emissions for this category.
Indirect GHG emissions from products used by an organization	
Raw Materials and other incoming materials used in the production and transportation of our products	a) Emissions associated with the production of the products purchased by the FPS according to the well-to-tank approach are included in the inventory. b) Information regarding the type, composition, and weight of the materials are obtained from the suppliers and are shared by the procurement teams. c) The resulting activity data is included in the calculation of kilograms (kg). d) The applicable Ecoinvent emission factor was applied to each quantity materials to calculate the emissions for this category

Capital Goods	a) Emissions created by fixed assets (capital goods) purchased by the FPS according to the well-to-tank approach are included in the inventory. b) Information regarding the type, composition, and weight of fixed assets are shared by the data holders. c) The resulting activity data is included in the calculation in kilograms (kg). d) The applicable Ecoinvent emission factor was applied to each quantity materials to calculate the emissions for this category
Purchased Services	a) Services purchased within the scope of FPS activities are reviewed. b) Consumption data (total spent amount in USD) is provided, and included in the inventory. dc) The applicable emission factor was applied to each services to calculate the emissions for this category
Waste	a) Indirect emissions generated by the FPS's activities are included in the inventory account according to the type of waste processing used. b) Information on all wastes based on waste type, disposal method, and amount of waste as well as the waste declaration forms are shared by the data holders. c) The resulting activity data is included in the calculation in tons.
Indirect GHG emissions associated with the use of products from the organization	
Emissions from end-of-life stage of the product	a) Indirect emissions resulting from the disposal of goods produced by the FPS are included in the inventory. b) This category includes the total expected end-of-life emissions from all products sold by the reporting company. c) The GHG emissions included in the calculation accounts for all products released on the market during the reporting year. d) Considering the composition of the product(s) released on the market, emissions based on the end-of-life assessment of the relevant product(s) is obtained. The calculations cover the end-of-life evaluation of the sold products in the calculation year as well as accounting for the unit of the emission factor. e) Based on the compositions of the products used by the customers in the calculation year, a scenario study of the amounts of product for each potential type of end-of-life processing is carried out and included in the calculations. f) The majority of product sold data was provided in total weight sold per FPS site. Products without an associated weight have been converted from pieces to kg using a conversion factor based on the average weight of products sold. g) As no end-of-life fate data was provided, the fate of products sold at each site were estimated based on from the Plastics Europe: Plastics-The Facts 2022 report, as FPS sells plastic products. The report provides the total end of life fate split for plastic in Europe. h) The applicable BEIS end-of-life emission factor was applied to each quantity of product sold to calculate the emissions for this category.

Table 7. Emissions Breakdown by GHG Sub-Categories

Scope	Category	tCO2e	% of total emissions
Scope 1: Direct GHG Emissions	Stationary Combustion	724.03	0.20%
Scope 1: Direct GHG Emissions	Mobile Combustion (On/Off Road)	613.60	0.17%
Scope 1: Direct GHG Emissions	Fugitive Emissions	344.56	0.10%
Scope 2: Energy Indirect GHG Emissions	Purchased Electricity	24,300	6.73%
Scope 3: Other Indirect GHG Emissions	Cat.1: Purchased Goods and Services	303,484.83	84.03%
Scope 3: Other Indirect GHG Emissions	Cat.2: Capital Goods	248.53	0.07%
Scope 3: Other Indirect GHG Emissions	Cat.9: Downstream Transportation and Distribution	18,367.51	5.09%
Scope 3: Other Indirect GHG Emissions	Cat.4: Upstream Transportation and Distribution	8,229.82	2.28%
Scope 3: Other Indirect GHG Emissions	Cat.5: Waste Disposal	154.19	0.04%
Scope 3: Other Indirect GHG Emissions	Cat.6: Business Travels	753.83	0.21%
Scope 3: Other Indirect GHG Emissions	Cat.7: Employee Commuting	3,312.76	0.92%
Scope 3: Other Indirect GHG Emissions	Cat.12: End-of-Life Treatment of Sold Products	624.93	0.17%

ANNEX II: REFERENCE VALUES/SOURCES FOR GREENHOUSE GAS EMISSION CALCULATIONS

STATIONARY COMBUSTION

				CO2		CH4		N2O		
Activity (Task)	**Unit**	**Density (kg/unit)**	**Net Calorific Value (TJ/Gg)**	**Emission Factor(kg CO2/TJ)**	**Global Warming Potential**	**Emission Factor(kg CO2/TJ)**	**Global Warming Potential**	**Emission Factor(kg CO2/TJ)**	**Global Warming Potential**	**References**
Natural Gas / Stationary Combustion	m3	0.700	48.0	56,100	1	1.0	27.9	0.1	273	1 & 3
Diesel / Stationary Combustion	liters	0.830	43.0	74,100	1	3.0	27.9	0.6	273	1 & 3
Propane / Stationary Combustion	liters	0.54	47.3	63,100	1	1.0	27.90	0.1	273	1 & 3
Fuel Oil / Stationary Combustion	liters	0.94	40.4	77,400	1	3.0	27.90	0.6	273	1 & 3
Coal / Stationary Combustion	kg	-	11.9	101,100.00	1	1.0	27.90	1.5	273	1 & 3

MOBILE COMBUSTION:

ON-ROAD EMISSIONS

				CO2		CH4		N2O		
Activity (Task)	**Unit**	**Density (kg/unit)**	**Net Calorific Value (TJ/Gg)**	**Emission Factor(kg CO2/TJ)**	**Global Warming Potential**	**Emission Factor(kg CO2/TJ)**	**Global Warming Potential**	**Emission Factor(kg CO2/TJ)**	**Global Warming Potential**	**References**
Diesel / on-road	liters	0.830	43.0	74,100	1	3.9	27.9	3.9	273	4 & 5
Petrol / on-road	liters	0.735	44.3	69,300	1	25.0	27.9	8.0	273	4 & 5
LPG	liters	0.51	47.30	63,100.00	1.00	62.00	27.90	0.2	273	4 & 5
LPG / on-road	kg	-	47.30	63,100.00	1.00	62.00	27.90	0.2	273	4 & 5

OFF-ROAD EMISSIONS

				CO2		CH4		N2O		
Activity (Task)	**Unit**	**Density (kg/unit)**	**Net Calorific Value (TJ/Gg)**	**Emission Factor(kg CO2/TJ)**	**Global Warming Potential**	**Emission Factor(kg CO2/TJ)**	**Global Warming Potential**	**Emission Factor(kg CO2/TJ)**	**Global Warming Potential**	**References**
Diesel / off-road	liters	0.830	43.0	74,100	1	4.2	27.9	28.6	273	4 & 6
Petrol / off-road	liters	0.735	44.3	69,300	1	130.0	27.9	0.4	273	4 & 6

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GLOBAL WARMING POTENTIAL

Gas	Unit	GWP	References
CO2	kg	1	9
CH4	kg	27.9	9
N2O	kg	273	9
SF6	kg	25200	9
HFC-134a	kg	1530	9
R410A	kg	2256	9
R404A	kg	4728	9
R417-A	kg	2515	9
R407C	kg	1908	9
R22	kg	1960	9
Carbon Dioxide	kg	1	9
FM200 (HFC-227ea)	kg	3600	9

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